

70006582

NONNEOPLASTIC EFFECTS OF VINYL CHLORIDE IN MOUSE LUNG

SUZUKI Y

ENVIRON. SCI. LAB., DEP. COMMUNITY MED., MT. SINAI SCH.
MED., CITY UNIV. N.Y., ONE GUSTAVE LEVY PL., NEW YORK, N.Y.
10029, USA.

ENVIRON RES 21 (1), 1980, 235-253. Coden: ENVRA

Language: ENGLISH

In a previous study, a high incidence of pulmonary tumors (alveologenic neoplasia) in mouse lung exposed to vinyl chloride at heavy dose (2500 and 6000 ppm) for long durations (5 and 6 mo.) was reported (Y. Suzuki). In the present study, nonneoplastic effects in mouse lung were investigated by light microscopy and EM. As major light microscopic alterations, proliferation and hypertrophy of the terminal bronchiolar cells, consisting of ciliated and Clara cells, hypersecretion of the epithelial mucin in the goblet cells of both the bronchial and the proximal bronchiolar epithelium, hyperplasia of alveolar epithelium, mobilization of alveolar macrophages and occasional presence of peribronchial or bronchiolar chronic inflammation, were observed. Electron microscopically, Clara cells of the terminal bronchiolar epithelium showed proliferation of the rough and smooth surfaced endoplasmic reticulum and appearance of large and abnormally shaped mitochondria. Similar alterations were found in the ciliated cells. Submicroscopic changes of pulmonary alveoli were represented by focal thickening of the basement membrane, multiple foci of hyperplastic type II cell (the precondition of the alveologenic tumor), active discharge of osmophilic lamellar bodies from the type II cell and phagocytosis of the bodies by macrophages, appearance of cholesterol crystalloids in the macrophages, degeneration of alveolar septal cells and occasional appearance of a large nucleus with swelling of the capillary endothelium.

Descriptors: MACROPHAGE CILIATED CELLS CLARA CELLS
CARCINOGEN INFLAMMATION LIGHT MICROSCOPY ELECTRON MICROSCOPY

Concept Codes: MICROSCOPY-HISTOL,HISTOCHEM TECH(01056);
ELECTRON MICROSCOPY(01058); CYTOLOGY/CYTOCHEM-ANIMAL(+02506);
BIOCHEM STUD-GENERAL(10060); BIOPHYS-MEMBRANE PHENOMENA(10508);
ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); PATHOLOGY-INFLAMMA-
TN,INFLAM DIS(12508); METABOLISM-GENL STUD,METAB PATHW(13002);
BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006); BLOOD/BODY
FLOS-LYMPHAT TISS,RES(15008); RESPIRATORY SYST-GENL
STUD,METHS(16001); RESPIRATORY SYST-PATHOLOGY(+16006);
TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INO-
USTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON
HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: MURIDAE(86375)

70006370

THE PERMEABILITY OF PROTECTIVE CLOTHING MATERIALS TO BENZENE VAPOR

SANSONE E B; TEWARI Y B

ENVIRON. CONTROL RES. LAB., FREDERICK CANCER RES. CENT.,
FREDERICK, MD. 21701, USA.

AM IND HYG ASSOC J 41 (3), 1980, 170-174. Coden: AIHAA

Language: ENGLISH

The permeability coefficient of benzene vapor in air was calculated from experimentally measured values of solubility coefficient and diffusion coefficient for natural rubber, nitrile, neoprene, natural rubber plus neoprene, butyl rubber, polyvinyl chloride and polyethylene membranes. The permeability coefficient for natural rubber at room temperature (apprx. 23.degree. C) was 4.2 times, 10-10 cm²/s when the concentration of benzene in air was 10 ppm. This means that a worker (1.8 m² surface area) completely clothed in a 0.0254 cm (10 mil) natural rubber suit would be exposed via the skin to 0.3 .mu.g benzene in an 8 h shift if the benzene concentration were 10 ppm. In the same time period and with the same benzene concentration the worker would inhale 1600 .mu.g benzene if his tidal volume were 700 cm³, his breathing rate were 15/min, and he was wearing a respirator with a protection factor of 100. Permeability coefficients for other vapor-membrane systems available in the literature suggest that exposure to vapors penetrating protective garments are in general negligible when compared with inhalation exposures for low vapor concentrations.

Descriptors: SKIN RUBBER NITRILE NEOPRENE BUTYL RUBBER POLY VINYL CHLORIDE POLY ETHYLENE IMIALATION

Concept Codes: MATHEMATIC BIDL/STATISTIC METH(04500); SOCIAL
BIOL/HUMAN ECOLOGY(05500); BIOCHEM-GASES(10012); BIOCHEM
STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(13002);
RESPIRATORY SYST-GENL STUD,METHS(16001); INTEGUMENT SYST-GENL
STUDS,METHS(18501); ROUTES OF IMMUNIZ,INFECT,THERAP(22100);
TOXICOL-ANTIDOTES,PREVENTIVE(+22505);
TOXICOL-ENVIRONMNTL,INDUSTR(+22506);
TEMPERATURE-GENL,METHS(23001); ENVIRON HEALTH-OCCUPATNL
HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

70003714

VINYL CHLORIDE AND TRI CHLORO ETHYLENE COMPARISON OF ALKYLATING EFFECTS OF METABOLITES AND INDUCTION OF PRE NEOPLASTIC ENZYME DEFICIENCIES IN RAT LIVER

LAIB R J; STOECKLE G; BOLT H M; KUNZ W
INST. TOXIKOL., UNIV. TUEB., WILHELMSTR. 74, D-7400
TUEBINGEN, W. GER.J CANCER RES CLIN ONCOL 94 (2). 1979. 139-148. Coden:
JCROD

Language: ENGLISH

[1,2-14C] Vinyl chloride and [1,2-14C] trichloroethylene were incubated with rat liver microsomes, NADPH and RNA (from yeast). Whereas trichloroethylene metabolites were irreversibly bound to proteins in microsomal incubations to a higher extent than vinyl chloride metabolites, irreversible binding to RNA was lower for trichloroethylene metabolites. Hydrolysis of the RNA which was reisolated from microsomal incubations with 14C-vinyl chloride or 14C-trichloroethylene and separation of the nucleosides showed different alkylation products arising from vinyl chloride and from trichloroethylene, characteristic for vinyl chloride being formation of 1,N6-ethenoadenosine and 3,N4-ethenocytidine. The different reactivities of metabolites of vinyl chloride and of trichloroethylene prompted a comparison of the oncogenic effects of both compounds against the rat liver cell. Newborn rats were exposed for 10 wk to 2000 ppm vinyl chloride or trichloroethylene (8 h/day; 5 days/wk). After this period livers of the animals were stained for nucleoside-5-triphosphatase. Whereas the vinyl chloride-exposed rats showed focal hepatocellular deficiencies in this enzyme, which are supposed to represent an early sign of malignancy, no such changes were induced by trichloroethylene exposure. The data suggest differences between the hepatocarcinogenic activity of vinyl chloride and possible effects of trichloroethylene on the liver.

Descriptors: YEAST RNA CARCINOGEN NUCLEOSIDE 5 TRI
PHOSPHATASE

Concept Codes: MICROSCOPY-CYTOLOG,CYTOCHEM TECH(01054); CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURINS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); ENZYMES-GEN,-COMPAR STUD,COENZYMES(10802); ENZYMES-METHODS(10804); ENZYMES--PHYSIOLOGICAL STUDIES(+10808); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM-PROTNS,PEPTDS,AM ACDS(13012); METABOLISM-NUCL ACD,PURINS,PYRM(13014); DIGESTIVE SYST-PATHOLOGY(+14006); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/-NEOPL AGENTS-CARCINOGENS(+24007); PEDIATRICS(25000); TISS CULTURE-APPARAT,METHS,MEDIA(32500); IN VITRO STUDS-CELLULR,SUBCELL(32600); PLANT PHYSIOL-CHEM CONSTITUENTS(51522)

Biosystematic Codes: FUNGI-UNSPECIFIED(15000); MURIDAE(8637-5)

MOEED A; DAWSON D G

ECOL. DIV., DEP. SCI. IND. RES., PRIV. BAG, LOWER HUTT, N.Z.
N Z J ZOOL 6 (4). 1979 (RECD. 1980). 613-618. Coden:
NZJZA

Language: ENGLISH

The reproductive success of starlings (*S. vulgaris*) using nest boxes in Hawke's Bay, New Zealand, differed significantly according to the type of box, but this may reflect the competence of the parents as well as the quality of the site. The most young fledged from boxes of 310 cm² internal basal area, significantly fewer from boxes of 520 cm² or more, and insignificantly fewer from boxes of 180 cm². Success increased with the depth of the nest box up to at least 200 mm. Sites with large entrance holes were little used, suggesting that starlings prefer minimal access clearance (perhaps to exclude predators) and the nest bowl to be dark. The box material (wood, concrete or PVC [polyvinyl chloride]) had no significant effect on use or success.

Descriptors: HAWKES BAY NEW-ZEALAND WOOD CONCRETE POLY VINYL
CHLORIDE YOUNG SUCCESS DEPTH ENTRANCE HOLE SIZE PREDATORS

Concept Codes: GENERAL FIELD METHODS(01008); GENERAL FIELD APPARATUS(+01010); MATHEMATIC BIOL/STATISTIC METH(04500); ECOLOGY-ANIMAL(+07508); EXTERN EFF-LIGHT,DARKNESS(10604); REPRODUCT SYST-GENL STUDS,METHS(+16501); PEDIATRICS(25000); DEVELOPMNTL BIOL-GEN MORPHGENSIS(+25508); SOIL SCI-GENL STUDS,METHS(52801)

Biosystematic Codes: SPERMATOPHYTA-UNSPECIFIED(25000);
ANIMALIA-UNSPECIFIED(33000); PASSERIFORMES(85548)

70001360

BREEDING OF STARLINGS STURNUS-VULGARIS IN NEST BOXES OF

R&S 138442

70001322

EFFECT OF COEXISTING SUBSTANCES ON THE SPORICIDAL ACTIVITY OF GASEOUS PROPYLENE OXIDE TOWARD BACILLUS-SUBTILIS-VAR-NIGER
TAWARATANI T; INUI Y; SHIBASAKI I
DEP. FERMENT. TECHNOL., FAC. ENG., OSAKA UNIV., YAMADA, SUITA, OSAKA 565, JPN.

HAKKOKOGAKU KAISHI 58 (1). 1980. 1-9. Coden: HKOKD

Language: JAPANESE

This paper describes the mechanism of the protective action of coexisting substances, i.e., milk casein, agar powder, cellulose powder, polyvinyl chloride powder, teflon powder and glass beads, against the sporicidal activity of gaseous propylene oxide (PO) toward *B. subtilis* var. *niger* 4380 spores. The first 4 substances showed remarkable protective action, while the others had no effect. The isothermal PO adsorption curve of spores was of the Henry's type, so the D [decimal reduction time] value of spores was dependent on the amount of adsorbed PO. But the amount of PO adsorbed by spores decreased with increasing water content of spores. When spores were exposed to gaseous PO, the amount of PO adsorbed by spores was significantly decreased in the presence of coexisting protective substances. Although spores lost the water during the gaseous PO treatment, loss of water from spores was suppressed by the coexistence of protective substances. The protective effect of the gaseous treatment.

Descriptors: MILK CASEIN AGAR POWDER CELLULOSE POWDER POLY VINYL CHLORIDE POWDER TEFLON POWDER GLASS BEAD

Concept Codes: BIOCHEM-PHYSIOLOGI WATER STUD(10011); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); BACTERIA-MORPHOLOGY, CYTOLOGY(30500); BACTERIA-PHYSIOLOGY, BIOCHEMISTRY(*31000); DISINFECTION, DISINFECTANTS, STERIL(*39500)

Biosystematic Codes: BACILLACEAE(05610)

diamminemalonatoplatinum(II); 60, diammineoxalatoplatinum(II); and 16, trans-diamminedichloroplatinum(II). Frameshift mutations were not reverted in treated cells of strains TA 98, TA 1537 or TA 1538. Compounds which reacted with the most active mutagen, cis-platin, such as pantoyl lactone, adenine or cytidine, caused a decrease in number of revertants when added with the drug to plate-incorporation assays. The effect of methionine on mutagenicity of cis-platin was exceptional in that preincubation of methionine and cis-platin was required for decreasing its mutagenic activities. When methionine and cis-platin were added concomitantly to assays there was an elevation of its mutagenicity. Methionine may enhance mutagenicity of the platinum drug by increasing activities of some enzymes associated with error-prone DNA repair.

Descriptors: TA-98 TA-100 TA-1535 TA-1537 TA-1538 STRAINS PLASMID PKM-101 RAT LIVER METABOLIC ACTIVATION CIS DI AMMINE DI CHLORO PLATINUM II DI CHLOROETHYLENE DI AMINE PLATINUM II DI AMMINE MALONATO PLATINUM II DI AMMINE OXALATO PLATINUM II TRANS DI AMMINE DI CHLORO PLATINUM II ANTINEOPLASTIC-DRUG DNA METHIONINE PHARMACODYNAMICS FRAMESHIFT SUBSTITUTION BASE PAIR SUBSTITUTION PANTOYL LACTONE ADENINE CYTIDINE ERROR PRONE DNA REPAIR ENZYME

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(*02506); GENETICS/CYTOGENET-ANIMAL(*03506); BIOCHEM STUD-NUCL ACD, PURNS, PYRM(100-62); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACD(10064); MINERALS(10069); ENZYMES-PHYSIOLOGICAL STUDIES(*10808); METABOLISM-PROTNS, PEPTDS, AM ACD(13012); METABOLISM-NUCL ACD, PURINS, PYRIM(*13014); DIGESTIVE SYST-PHYSIOL, BIOCHEM(1400-4); PHARMACOL-DRUG METAB, METAB STIMU(*22003); TOXICOL-PHARMACOLOGICAL(*22504); NEOPLSMS/NEOPL AGNTS-THERAP, AGNT(*24008); BACTERIAL AND VIRAL GENETICS(31500); MICROBIOLOG APPARAT, METHS, MEDIA(32000); CHEMOTHERAPY-GEN STUD, METH, METAB(*38502)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); MURIDAE(863-75)

69079706

MUTAGENICITY OF PLATINUM COORDINATION COMPLEXES IN SALMONELLA-TYPHIMURIUM

BECK D J; FISCH J E

DEP. BIOL. SCI., BOWLING GREEN STATE UNIV., BOWLING GREEN, OHIO 43403, USA.

MUTAT RES 77 (1). 1980. 45-54. Coden: MUREA

Language: ENGLISH

The mutagenic properties of 5 Pt compounds [antitumor drugs] were studied using Ames plate-incorporation mutagenesis assays and strains of *Salmonella typhimurium*. Platinum drugs were direct mutagens as their mutagenicity was not dependent on metabolic activation by rat liver extracts. Ability of the compounds to revert a base-pair substitution mutation causing histidine dependency was promoted by plasmid-mediated DNA-repair since cells of strain TA 100 were reverted and not cells of strain TA 1525; these strains are isogenic except that TA 1525 lacks the pKM101 plasmid. Mutagenic potencies (revertants per μ g compound), as determined from linear dose-response curves, were in order of decreasing mutagenicities: 450, cis-diamminedichloroplatinum(II) (cis-platin); 100, dichloroethylenediamineplatinum(II); 90,

69072845

A GAS CHROMATOGRAPHIC HEAD SPACE METHOD FOR MONITORING VINYL CHLORIDE IN LIQUID DRUG AND COSMETIC PRODUCTS

WATSON J R; LAWRENCE R C; LOVERING E G
PHARM. CHEM. DIV., DRUG RES. LAB., HEALTH PROT. BRANCH,
OTTAWA, ONT. K1A 0L2, CAN.

CAN J PHARM SCI 14 (3). 1979. 57-60. Coden: CNJPA

Language: ENGLISH

A gas chromatographic method is described for monitoring vinyl chloride [a carcinogen] levels in liquid drug and cosmetic preparations packaged in polyvinyl chloride containers. A weighed aliquot of the commercial product in a tightly septum-sealed vial with accurately known headspace volume is heated to 50.degree. for 30 min. A portion of the warm headspace gas is then injected into a gas chromatograph equipped with a flame ionization detector and a styrene-divinylbenzene porous polymer column. The vinyl chloride is eluted isothermally at 125.degree. and is quantitated by simple computation relative to a response factor determined daily using a standard vinyl chloride-air calibration gas mixture. The procedure was subjected to collaborative study by 5 analysts. Two mouthwash products, 2 commercial shampoos, 2 large volume parenteral solutions and 2 baby oil preparations were analyzed. Statistical evaluation of the results of the study showed that the method had an overall coefficient of variation of about 17%. The limit of detectability of the procedure is about 0.1 ppb in the sample solution.

Descriptors: CARCINOGEN MOUTHWASH SHAMPOO PARENTERAL SOLUTION BABY OIL

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); BIOCHEM METH-GENERAL(*10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); EXTERN EFF-HOT(10618); MOVEMENT(12100); DENTAL/ORAL BIOL-GENL STUD.METHS(19001); PHARMACOL-GENERAL STUDIES(22002); TOXICOL-GENL/EXP STUDS.METHS(*22501); TOXICOL-PHARMACOLOGICAL(*22504); TEMPERATURE-GENL.-METHS(23001); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007)

69069687

IN-VIVO EVALUATION OF ARTIFICIAL SURFACES WITH A NONHUMAN PRIMATE MODEL OF ARTERIAL THROMBOSIS

HANSON S R; HARKER L A; RANTER B D; HOFFMANN A S
DIV. HEMATOL., DEP. MED., HARBORVIEW MED. CENT., 325 9TH
AVE., SEATTLE, WASH. 98104, USA.

J LAB CLIN MED 95 (2). 1980. 289-304. Coden: JLCMA

Language: ENGLISH

Factors determining the thrombotic response to artificial surfaces in vivo were investigated in a baboon [Papio cynocephalus] cannular shunt model. Overall rates of thrombus formation in vivo were kinetically assessed with autologous ⁵¹Cr-labeled blood platelets and ¹²⁵I-labeled fibrinogen. Rates of cannula platelet consumption per unit area (platelets/cm²-day) depended strongly on material type yet were independent of large variations in cannula blood flow rate, circulating platelet concentration and total cannula surface area. ¹²⁵I-fibrinogen kinetics were also studied. In

grafted acrylic polymers and copolymers there was a direct linear correlation (r [correlation coefficient] = 0.833) between the water content of the grafted layer and the rate of platelet consumption per unit area. With 5 commercial polyurethanes there was a good inverse correlation (r = 0.935) between platelet consumption per unit area and the percentage of surface carbon atoms forming C-H bonds as determined by ESCA [electron spectroscopy for chemical analysis]. Polytetrafluoroethylene, polyvinyl chloride, polydimethylsiloxane and polyethylene consumed less than 2 times. 108 platelets/cm² per day and were the least consumptive materials tested. In 5 experiments with consumptive shunts, heparin anticoagulation did not alter significantly the rate of platelet consumption (P > 0.80) compared to 7 control studies without heparin. Platelets taken from donor animals with consumptive shunts survived normally in recipient animals without shunts, demonstrating that the residual lifespan of circulating platelets was not reduced. Consumptive shunts positioned in the renal arteries of 3 animals caused progressive occlusion of the renal microcirculation by platelet emboli. In simultaneous control studies utilizing Silastic cannulas in the opposing kidneys, emboli could rarely be detected. Platelet consumption induced by artificial surfaces results in the production of platelet microemboli. This process strongly depends on the physicochemical properties of prosthetic materials.

Descriptors: PAPIO-CYNOCEPHALUS PLATELET HEPARIN ANTICOAGULANT HEMATOLOGIC-DRUG PLATELET EMBOLUS RENAL MICRO CIRCULATION OCCLUSION POLY ETHYLENE POLY DI METHYL SILOXANE POLY VINYL CHLORIDE POLY TETRA FLUORO ETHYLENE FIBRINOGEN SILASTIC

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM METH-GENERAL(10050); BIOCHEM METH-PROTNS,PEPTDS,AM AC(10054); BIOCHEM STUD-GENERAL-(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); BIOPHYS--BIOENGINEERING(*10511); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); MOVEMENT(12100); METABOLISM-PROTNS,PEPTDS,AM ACDS(13012); CARDIOVASC SYST-GENL STUDS.METHS(*14501); CARDIOVASC SYST-BLD VESS PATHOL(*14508); BLOOD/BODY FLDS-GENL STUDS.METHS(15001); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(*15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(*15004); URIN SYST/EXT SECR-PATHOLOGY(15506); PHARMACOL-BLOOD,HEMATO AGENTS(22008)

Biosystematic Codes: PRIMATES-UNSPECIFIED(86190); CERCOPITHICIDAE(86205)

69069368

BLOOD COMPATIBILITY OF MEDICAL DEVICE MATERIALS AS MEASURED BY LYMPHOCYTE FUNCTION

WILSNACK R E; BERNADYN S A
HUNTINGDON RES. CENT., DIV. BECTON DICKINSON CO., P.O. BOX 527, BROOKLANDVILLE, MD. 21022, USA.
BIOMATER MED DEVICES ARTIF ORGANS 7 (4). 1979 (RECD. 1980). 527-546. Coden: BMDOA

Language: ENGLISH

Bovine lymphocyte compatibility of a variety of device materials was assessed by quantification of effect on PHA-M (phytohemagglutinin) mediated lymphocyte activation in a whole blood assay. Samples of polypropylene, polyethylene, stainless steel, Teflon, polycarbonate, silicone rubber and some polyurethane proved lymphocompatible. Polyvinyl chloride plastics and rubber yielded the largest proportion of lymphosuppressive samples. Lymphocyte inactivation manifested characteristics suggestive of specific receptor alteration, demonstrated typical dose response kinetics and proved a more sensitive indicator of specific aspects of blood compatibility than hemolysis. Most lymphosuppressive materials failed to induce hemolysis under the defined test parameters.

Descriptors: BOVINE LYMPHO SUPPRESSION HEMOLYSIS PHYTO HEM AGGLUTININ RUBBER POLY VINYL CHLORIDE POLY URETHANE POLY PROPYLENE POLY ETHYLENE STAINLESS STEEL TEFLON POLY CARBONATE SILICONE RUBBER

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); BIOPHYS-BIOENGINEERING(+10511); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004); BLOOD/BODY FLDS-LYMPHAT TISS.RES(+15008); PHARMACOL-BLOOD,HEMATO AGENTS(22008); PHARMACOL-IMMUNO PROCES,ALLERGY(22018); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); PHARMACOGNOSY/PHARM-ACEUT BOTANY(54000)

Biosystematic Codes: PLANTAE-UNSPECIFIED(11000); BOVIDAE(85-715)

69068020

TOTAL ELEMENTAL CONTENT PASSIVE PERSONAL MONITORS

MONTALVO J G JR
SOUTH. REG. RES. CENT., P.O. BOX 19687, NEW ORLEANS, LA. 70179, USA.
AM IND HYG ASSOC J 40 (12). 1979. 1046-1054. Coden: AIHAA

Language: ENGLISH

The development of specific passive personal monitors for each volatile form of an element should ultimately lead to a common monitor which can detect any or all forms of that elements. Such a device is a total elemental content passive personal monitor and depends upon diffusion to bring gaseous pollutants into its collecting matrices. How to compute and limit the ambient concentration error attributed to molecular diffusion approximations for such monitors is shown. The error depends upon the value for the weighted diffusion coefficient used to convert the mass of element collected to ambient

concentration. A computed average diffusion coefficient tends to be nonideal, because the relative concentrations of the volatile forms of an element entering the monitor are variable during the work day. Since it is not possible to calculate an exact diffusion coefficient, a finite error exists between monitor and ambient concentration values. Total organic Cl at a vinyl chloride plant can be estimated by use of an average diffusion coefficient without imparting significant error.

Descriptors: DIFFUSION GASEOUS POLLUTANTS TOTAL ORGANIC CHLORINE VINYL CHLORIDE

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); ECOLOGY-BIOCLIMATOL,BIOMETEOROL(+07504); BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); MOVEMENT(12100); TOXICOL-ENVIRONMNTL,INDISTR(+22506); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

69067933

GASEOUS HYDROGEN SULFIDE DETERMINATION BY DIS COLORATION OF LEAD STABILIZED POLY VINYL CHLORIDE

GRAEDEL T E; FRANEY J P

BELL LAB., MURRAY HILL, N.J. 07974, USA.

AM IND HYG ASSOC J 40 (11). 1979. 947-954. Coden: AIHAA

Language: ENGLISH

The discoloration of Pb-stabilized PVC [polyvinyl chloride] resulting from its interaction with H₂S gas was investigated as a potential H₂S measurement technique. Color measurements of PVC samples exposed to controlled concentrations of H₂S over a range of humidities and temperatures demonstrated that toxic H₂S concentrations can be detected in less than 5 min. The technique was appropriate for industrial applications such as the pretesting of manhole atmospheres prior to entry. Exposure times of several hours were sufficient to detect the much lower H₂S concentrations that might be present in ambient e.g., 15 h exposures were needed for 10 +/- 3 ppb H₂S, a level typical of certain oil field, swamp and sewage treatment areas. The technique is inexpensive and can be performed by unskilled personnel.

Descriptors: MANHOLE ENTRY HUMIDITY TEMPERATURE OIL FIELD SWAMP SEWAGE TREATMENT

Concept Codes: ECOLOGY-BIOCLIMATOL,BIOMETEOROL(+07504); ECOLOGY-LIMNOLOGY(+07514); ECOLOGY-WATR RESRCH,FISHERY BIOL(07517); BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(10511); EXTERN EFF-TEMPERATURE(10614); EXTERN EFF-HUMIDITY(10620); TOXICOL-ENVIRONMNTL-INDISTR(+22506); TEMPERATURE-GENL,METHS(23001); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-SCWG DISP,SANITAR(+37014); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

69065887

CARCINOGENICITY OF CHLORO ETHYLENE OXIDE AN ULTIMATE REACTIVE METABOLITE OF VINYL CHLORIDE AND BIS CHLOROMETHYL ETHER AFTER SUB CUTANEOUS ADMINISTRATION AND IN INITIATION PROMOTION EXPERIMENTS IN MICE

ZAUDELA F; CROISY A; BARBIN A; MALAVEILLE C; TOMATIS L; BARTSCH H

UNIT CHEM. CARCINOGEN., 150 COURS ALBERT-THOMAS, 69372 LYON CEDEX 2, FR.

CANCER RES 40 (2). 1980. 352-356. Coden: CNREA

Language: ENGLISH

Repeated s.c. administration of chloroethylene oxide, a reactive metabolite of the carcinogen vinyl chloride, induced local tumors in mice, with an incidence comparable to that of bis(chloromethyl)ether, a structurally related human and animal carcinogen, when both compounds were applied at maximum tolerated chronically toxic doses; no tumors distant from the injection site were produced. Bis(chloromethyl)ether, chloroethylene oxide and its rearrangement product chloroacetaldehyde, a highly toxic compound, were further tested in an initiation-promotion experiment. Application to the skin of a single dose of bis(chloromethyl)ether or chloroethylene oxide, followed by 3-times-weekly applications of 12-O-n-tetradecanoylphorbol-13-acetate for 42 wk. produced skin tumors in mice; chloroacetaldehyde under comparable conditions produced no increase in benign or malignant tumors. A good correlation between the chemical reactivity, on the basis of hydrolysis constants in aqueous media, and the carcinogenicity of the 3 compounds was noted. Apparently epoxidation of the ethylenic double bond in vinyl chloride yields an ultimate carcinogenic metabolite, chloroethylene oxide, a highly reactive compound which also appears to be largely responsible for the known genetic changes caused by the parent compound.

Descriptors: HUMAN 12-O-N TETRA DECANOYL PHORBOL 13 ACETATE CARCINOGEN CHLORO ACETALDEHYDE

Concept Codes: GENETICS/CYTOGENET-ANIMAL(+03506); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(+13002); INTEGUMENT SYST-GENL STUDS,METHS(18501); INTEGUMENT SYST-PATHOLOGY(+18506); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

69064055

RAT AND HUMAN LIVER MICROSOMAL EPOXIDE HYDRATASE EC-4.2.1.63 PURIFICATION AND EVIDENCE FOR THE EXISTENCE OF MULTIPLE FORMS

GUENGERICH F P; WANG P; MITCHELL M B; MASON P S
DEP. BIOCHEM., VANDERBILT UNIV. SCH. MED., NASHVILLE, TENN.
37232, USA.

J BIOL CHEM 254 (23). 1979. 12248-12254. Coden: JBCHA

Language: ENGLISH

Liver microsomal epoxide hydratase was purified from untreated rats, from rats treated with phenobarbital, 3-methylcholanthrene, or trans-stilbene oxide, and from 3 different human autopsy samples. More than 1 form of epoxide

hydratase could be separated from each liver source. Most of the rat and human preparations were apparently homogeneous as judged by polyacrylamide gel electrophoresis in the presence of sodium dodecyl sulfate; all of the preparations examined had apparent MW of 50,000 as judged by this technique. Different epoxide hydratase fractions showed differences upon rechromatography or agarose gel electrophoresis. Amino acid compositions were determined for all of the apparently homogeneous enzyme preparations; analysis of the data indicated differences between some of the isolated proteins. Differences were also found between some of the epoxide hydratase fractions when their activities toward the substrates styrene-7,8-oxide, benzo(a)pyrene-4,5-oxide, benzo(a)pyrene-7,8-oxide, benzo(a)-anthracene-5,6-oxide, dibenzo(a,h)anthracene-5,6-oxide, 3-methylcholanthrene-11,12-oxide and 2-chloroethylene oxide were examined under conditions of fixed time and enzyme and substrate concentrations. Some apparent differences were also observed in the effects of fixed concentrations of metyrapone, cyclohexene oxide and 3,3,3-trichloropropylene oxide on enzymatic activities of the various epoxide hydratase fractions. These observations, coupled with immunological studies provide evidence that: rat and human liver microsomal epoxide hydratases are similar to each other in many respects but are distinguishable by several criteria; multiple forms of epoxide hydratase exist in livers of individual rats or humans; and the natures of these forms and the levels of each can be altered by treatment with various xenobiotics.

Descriptors: BENZO A PYRENE 7 8 OXIDE STYRENE 7 8 OXIDE BENZO A ANTHRACENE 5 6 OXIDE DI BENZO A PYRENE 7 8 OXIDE BENZO A PYRENE 4 5 OXIDE 3 METHYL CHOLANTHRENE 11 12 OXIDE 2 CHLORO ETHYLENE OXIDE METYRAPONE CYCLO HEXENE OXIDE 3 3 3 TRI CHLORO PROPYLENE OXIDE METABOLIC-DRUG AMINO-ACID COMPOSITION GEL ELECTROPHORESIS IMMUNOCHEMISTRY

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(+10010); BIOCHEM METH-PROTNS,PEPTDS,AM AC(+10054); BIOCHEM STUD-GENERAL-(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(+10064); BIOPHYS-GENERAL BIOPHYS TECH(+10504); ENZYMES-GEN,COMPAR STUD,COENZYMES(+10802); ENZYMES-METHOOS(+10804); ENZYMES-CHEM,-PHYSICAL STUDIES(+10806); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004); PHARMACOL-DRUG METAB,METAB STIMU(+22003); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); IMMUNOL/IMMUNOCHEM-GEN METH(+34502)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

R&S 138446

69062467

BLOOD SURFACE INTERACTIONS FOURIER TRANSFORM IR STUDIES OF PROTEIN SURFACE ADSORPTION FROM FLOWING BLOOD PLASMA AND SERUM

GENDREAU R M; JAKOBSEN R J

BATTELLE COLUMBUS LAB., COLUMBUS, OHIO 43201, USA.

J BIOMED MATER RES 13 (6). 1979 (RECD. 1980). 893-906.

Codon: JBMRB

Language: ENGLISH

Adsorption of blood proteins onto various surfaces in contact with flowing [human and rabbit] blood plasma or serum was investigated using Fourier Transform IR spectroscopy (FT-IR) coupled with attenuated total reflection (ATR). Comparison of adsorption from a static versus a flowing blood plasma system indicated that a greater amount of protein was adsorbed when the static system was employed, but desorption was observed with the static system and not in the flowing system. When plasma and serum were compared in terms of amount and type of protein absorbed, little difference was noted in kinetics of adsorption or stability of the adsorbed layers. Variations in ratios of IR adsorption bands (from plasma or serum) indicate that changes occur during the adsorption process in the protein layers. Comparison of poly(vinyl chloride) to germanium as the protein adsorbing surface in the static system showed differences in composition of the adsorbed layers.

Descriptors: RABBIT HUMAN

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); RADIATION BIOL-RADTN, ISOTOP TECH(06504); BIOCHEM METH-PROTNS, -PEPTDS, AM AC(10054); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO AC(10064); BIOPHYS-GENERAL STUDIES(10502); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(*10511); MOVEMENT- (12100); BLOOD/BODY FLDS-GENL STUDS, METHS(*15001); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(*15002)

Biosystematic Codes: LEPORIDAE(86040); HOMINIDAE(86215)

69061114

A SELECTIVE GAS CHROMATOGRAPHY COLUMN FOR TRACE ANALYSIS OF VINYL CHLORIDE IN AIR

KROCKENBERGER D; LORKOWSKI H; ROHRSCHEIDER L

ZENT. FORSCH. ENTWICK., CHEM. WERKE HUELS AG, POSTFACH 1320, D-4370 MARL, W. GER.

CHROMATOGRAPHIA 12 (12). 1979 (RECD. 1980). 787-789.

Codon: CHRGB

Language: ENGLISH

A selective GC [gas chromatography] column for the determination of vinyl chloride monomer in air was developed. The 1.5 m. times. 1/8 in column was filled with a mixture of Porapak S and T (80:20). The selectivity was tested with 21 possible pollutants. All of the tested compounds were separated from vinyl chloride, a potential carcinogen.

Descriptors: POLLUTANTS CARCINOGEN

Concept Codes: ECOLOGY-BIOCLIMATOL, BIOMETEOROL(*07504); BIOCHEM METH-GENERAL(*10050); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); TOXICOL-ENVIRONMNTL, INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); ENVIRON HEALTH-AIR, WATR, SL POLLN(*37015)

69058960

HEPATIC ANGIO SARCOMA ASSOCIATED WITH ANDROGENIC ANABOLIC STEROIDS

FALK H; POPPER H; THOMAS L B; ISHAK K G

CHRONIC DIS. DIV., BUR. EPIDEMIOL., CENT. DIS. CONTROL., US PUBLIC HEALTH SERV., ATLANTA, GA. 30333, USA.

LANCET 2 (8152). 1979. 1120-1122. Codon: LANCA

Language: ENGLISH

A retrospective epidemiological study of deaths from hepatic angiosarcoma (HAS) in the USA showed that during 1964-1974 there were 168 such cases, of which 37 (22%) were associated with previously known causes (vinyl chloride, thorotrast and inorganic arsenic) and 4 (3.1%) of the remaining 131 cases with the use of androgenic-anabolic steroids. The long-term use of androgenic-anabolic steroids is the 4th cause of HAS, the majority of cases still being of unknown etiology. The presented cases serve as a link in a spectrum of hepatic disorders recently recognized to be caused by environmental agents such as vinyl chloride, arsenic, and thorotrast and by contraceptive and anabolic steroids. Similar precursor stages, usually not recognized by clinical laboratory tests and consisting of areas of hyperplasia of hepatocytes and sinusoidal cells and sinusoidal dilatation, lead potentially to hepatic adenoma, carcinoma, peliosis and angiosarcoma.

Descriptors: HUMAN HEPATIC ADENOMA PELIOSIS CARCINOMA VINYL CHLORIDE THOROTRAST ARSENIC USA

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(02508); MATHEMATIC BIOL/STATISTIC METH(04500); BEHAVIOR BIOL-HUMAN BEHAVIOR(0700-4); CLIN BIOCHEM-GENL STUDIES(10006); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-STEROLS, STEROIDS(10067); ANATOMY/HISTOL-MICRO, ULTRAMICRSC(11108); PATHOLOGY-COMPARATIVE(12503); PATHOLOGY-NECROSIS(12510); METABOLISM-STEROLS, STEROIDS(*13008); DIGESTIVE SYST-GENL STUDS, METHS(14001); DIGESTIVE SYST-PATHOLOGY(*14006); CARDIOVASC SYST-BLD VESS PATHOL(*14508); ENDOCRINE SYST-GONADS, PLACENTA(*17006); PSYCHIATRY-ADDICTION(INC SMOKNG)(21004); PHARMACOL-ENDOCRINE SYST(*22016); TOXICOL-GENL/EXP STUDS, METHS(*22501); TOXICOL-PHARMACOLOGICAL(*22504); TOXICOL-ENVIRONMNTL, INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-BIOCHEM(*24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); PUB HEALTH-ADMINISTR, STATISTICS(37010); ENVIRON HEALTH-AIR, WATR, SL POLLN(37015); EPIDEMIOL-ORGANIC DIS, NEOPLASMS(37054)

Biosystematic Codes: HOMINIDAE(86215)

69055842

IN-VIVO ASSESSMENT IN SHEEP OF THROMBO RESISTANT MATERIALS BY DETERMINATION OF PLATELET SURVIVAL

LINDON J N; COLLINS R E C; COE N P; JAGODA A; BRIER-RUSSELL D; MERRILL E W; SALZMAN E W

DEP. SURG., BETH ISR. HOSP., 330 BROOKLINE AVE., BOSTON, MASS. 02215, USA.

CIRC RES 46 (1), 1980. 84-90. Coden: CIRUA

Language: ENGLISH

The thromboresistance of 13 potentially blood-compatible polymers was assessed in sheep by determining survival of ⁵¹Cr-labeled platelets. Polymer tubing (120-150 cm .times. 2.0-2.3 mm i.d. [internal diameter]) coiled around the neck was incorporated into the circulation through silicone rubber connectors as a carotid artery-external jugular vein shunt. The mean platelet half-life in control animals (shunt control) was 78.2 +/- 2.8 (SEM [standard error of the mean]) h. Of the 13 polymers tested, 11 significantly shortened platelet half-life [t1/2]. Polyvinyl chloride (t1/2 = 45.4 +/- 3.0 h), polyperfluoro ethylene (t1/2 = 47.0 +/- 1.6 h), and a polymethyl acrylate (PMA)/acrylonitrile copolymer (t1/2 = 50.7 +/- 7.0 h) produced the greatest shortening. Only silica-free polydimethyl siloxane (t1/2 = 74.7 +/- 4.9 h) and PMA (t1/2 = 81.5 +/- 3.4 h) were indistinguishable from shunt controls. Pretreatment of PMA tubing with autologous plasma in a paired trial significantly increased platelet half-life (P < 0.05 vs. untreated PMA). This system offers an economical, reproducible, sensitive and biologically relevant method for assessment of the reactivity of artificial surfaces with platelets.

Descriptors: PLASMA POLY VINYL CHLORIDE POLY PER FLUORO ETHYLENE POLY DI METHYL SILOXANE ACRYLONITRILE CO POLYMER ARTIFICIAL SURFACE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); MATHEMATIC BIOL/STATISTIC METH(04500); RADIATION BIOL-RADTN,ISOTOP TECH(06504); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); BIOPHYS-BIOENGINEERING(-*10511); ANATOMY/HISTOL-EXPERIMENTAL(11104); CARDIOVASC SYST-GENL STUDS,METHS(14501); CARDIOVASC SYST-BLD VESS PATHOL(*14508); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(*15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(*15004)

Biosystematic Codes: BOVIDAE(85715)

69053996

A DIRECT AND SENSITIVE GAS CHROMATOGRAPHIC METHOD FOR SELECTIVE MEASUREMENT OF VINYL CHLORIDE IN AMBIENT AIR

BURGHARDI E; JELTES R; VAN DE WIEL H J; ORANJE E J
TNO RES. INST. ENVIRON. HYG., P.O. BOX 214, 2600 AE DELFT, NETH.

ATMOS ENVIRON 13 (7), 1979. 1057-1060. Coden: ATENB

Language: ENGLISH

For the measurement of ppb concentrations of vinyl chloride in ambient air, a relatively wide bore column packed with a highly selective and efficient picric acid coated Carbopack C phase was used. In the method applied, air samples were

separated vinyl chloride from 65 potential interfering substances like low-boiling hydrocarbons and halogenated hydrocarbons.

Descriptors: CARCINOGEN INTERFERING SUBSTANCES

Concept Codes: ECOLOGY-BIOCLIMATOL,BIOMETEOROL(*07504); BIOCHEM METH-GENERAL(*10050); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); NEOPLSM-S/NEOPL AGNTS-CARCINOGENS(*24007); ENVIRON HEALTH-AIR,WATR,SL POLLN(*37015)

69051989

COMPARISON OF THE HYDROXYLATION OF BENZO A PYRENE WITH THE METABOLISM OF VINYL CHLORIDE N NITROSO MORPHOLINE AND N NITROSO-N'-METHYL PIPERAZINE TO MUTAGENS BY HUMAN AND RAT LIVER MICROSOMAL FRACTIONS

SABADIE N; MALAVEILLE C; CAMUS A-M; BARTSCH H

UNIT CHEM. CARCINOGEN., INT. AGENCY RES. CANCER, 69372 LYON CEDEX 2, FR.

CANCER RES 40 (1), 1980, 119-126. Coden: CNREA

Language: ENGLISH

Carcinogen metabolism in vitro was studied in 20 surgical liver specimens from adult male and female human subjects. A 60-fold interindividual variation in aryl hydrocarbon [benzo(a)pyrene] hydroxylase activity was seen; the capacity to convert vinyl chloride, N-nitroso-N'-methylpiperazine and N-nitrosomorpholine into electrophiles mutagenic to *Salmonella typhimurium* varied 9-, 17-, and 35-fold, respectively. The mean enzymic capacity relative to liver from untreated rats was 84% for vinyl chloride, 42% for N-nitrosomorpholine and 380% for N-nitroso-N'-methylpiperazine. When aryl hydrocarbon [benzo(a)pyrene] hydroxylase activity in human liver specimens was plotted against mutagenicity in *S. typhimurium* mediated by liver microsomes from the same specimens, a positive correlation was obtained in the presence of vinyl chloride (r [correlation coefficient] = 0.55; $P < 0.1$). N-nitrosomorpholine ($r = 0.86$; $P < 0.01$), or N-nitroso-N'-methylpiperazine ($r = 0.94$; $P < 0.01$). The results are discussed in relation to the possible development of methods for assessing rates of metabolism of environmental carcinogens in human subjects in vivo using nontoxic drugs that are metabolized by the same enzymes that metabolize carcinogens. Hepatic aryl hydrocarbon [benzo(a)pyrene] hydroxylase activity following treatment of rats with phenobarbitone, pregnenolone-16.alpha.-carbonitrile, dibenamine, aminoacetonitrile or disulfiram, but not after treatment with 3-methylcholanthrene, showed a positive correlation with the mutagenicity of the respective 9000 times g liver supernatant fraction mediated in the presence of N-nitrosomorpholine, vinyl chloride or aflatoxin B₁. Cytochrome P-450-linked monooxygenases in rat liver apparently convert N-nitrosomorpholine, vinyl chloride and aflatoxin B₁ into mutagenic electrophiles.

Descriptors: SALMONELLA-TYPHIMURIUM AFLA TOXIN B-1 CARCINOGEN PHENO BARBITONE PREGNENOLONE 16-ALPHA CARBONITRILE DIBENAMINE AMINO ACETONITRILE DISULFIRAM 3 METHYL CHOLANTHRENE METABOLIC-DRUG ARYL HYDRO CARBON HYDROXYLASE CYTOCHROME P-450

Concept Codes: GENETICS/CYTOGENET-ANIMAL(+03506); GENETICS/CYTOGENET-HUMAN(+03508); MATHEMATIC BIOL/STATISTIC METH(+04500); COMPARATIVE BIOCHEM-GENL STUDIES(+10010); BIOCHEM STUD-GENERAL(+10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(+10064); BIOCHEM STUD-PORPHYRINS, BILE PIGM(+10065); BIOPHYS-GENERAL BIOPHYS TECH(+10504); ENZYMES-GEN, COMPAR STUD, COENZYMES(+10802); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); ANATOMY/HISTOL-SURGERY(+11105); METABOLISM-GENL STUD, METAB PATHW(+13002); METABOLISM-PROTNS, PEPTDS, AM ACDS(+13012); DIGESTIVE SYST-GENL STUDS, METHS(+14001); DIGESTIVE SYST-PHYSIOL, BIOCHEM(+14004); PHARMACOL-DRUG METAB, METAB STIMU(+22003); TOXICOL-ENVIRONMNTL-INDUSTR(+22506); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007).

BACTERIAL AND VIRAL GENETICS(+31500); MICROBIOLOG APPARAT, METHS, MEDIA(+32000); TISS CULTURE-APPARAT, METHS, MEDIA(+32500); IN VITRO STUDS-CELLULR, SUBCELL(+32600); MED/CLIN MICROBIOL-MYCOLOGY(+36008); PLANT PHYSIOL-CHEM CONSTITUENTS(+51-522)

Biosystematic Codes: ENTEROBACTERIACEAE(+04810); DEUTEROMYCE-TES(+15500); HOMINIDAE(+86215); MURIDAE(+86375)

69051939

1 YEAR TIME SEQUENCE INHALATION TOXICITY STUDY OF VINYL CHLORIDE IN RATS 3. MORPHOLOGICAL CHANGES IN THE LIVER

FERON V J; SPIT B J; IMMEL H R; KROES R

DEP. TOXICOL., CENT. INST. NUTR., P.O. BOX 360, 3700 AU ZEIST, NETH.

TOXICOLOGY 13 (2), 1979, 143-154. Coden: TXYA

Language: ENGLISH

Wistar rats were exposed to atmospheres containing 0 (control) or 5000 ppm vinyl chloride monomer (VCM), 7 h/day, 5 days/week, for 52 wk. After 4, 13, 26 and 52 weeks each time 10 rats/sex per group were killed and subjected to extensive examinations. The morphological changes found in the liver were described. The major parenchymal changes comprised swelling and malformation of mitochondria, an increased amount of smooth endoplasmic reticulum, necrosis, nuclear and cellular polymorphism of hepatocytes, foci of cellular alteration, neoplastic nodules and hepatocellular carcinomas. A reduced glucose-6-phosphatase activity in hepatocytes and a strong sinusoidal activity of alkaline phosphatase were found within foci of cellular alteration. The non-parenchymal alterations included focal dilatation of sinusoids, focal proliferation of atypical sinusoidal cells and multicentric angiosarcomas. The effects of VCM on the hepatic parenchyma seemed to precede those on the hepatic stroma.

Descriptors: GLUCOSE 6 PHOSPHATASE ALKALINE PHOSPHATASE MITOCHONDRIAL SWELLING NECROSIS MULTICENTRIC ANGIO SARCOMA

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); BIOCHEM STUD-GENERAL(+10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(+10064); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); ANATOMY/HISTOL-MICRO, ULTRAMICRSC(+11108); PATHOLOGY-INFLAMMATN, INFLAM DIS(+12508); PATHOLOGY-NECROSIS(+12510); METABOLISM-GENL STUD, METAB PATHW(+13002); METABOLISM-PROTNS, PEPTDS, AM ACDS(+13012); DIGESTIVE SYST-GENL STUDS, METHS(+14001); DIGESTIVE SYST-ANATOMY(+14002); DIGESTIVE SYST-PATHOLOGY(+14006); BLOOD/BODY FLDS-OTHER BODY FLDS(+15010); RESPIRATORY SYST-GENL STUD, METHS(+16001); BONE, JNTS, FASC, CONN/ADIP-PATHOL(+18006); ROUTES OF IMMUNIZ, INFECT, THERAP(+22100); TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR, WATR-SL POLLN(+37015)

Biosystematic Codes: MURIDAE(+86375)

69051938

1 YEAR TIME SEQUENCE INHALATION TOXICITY STUDY OF VINYL CHLORIDE IN RATS 2. MORPHOLOGICAL CHANGES IN THE RESPIRATORY TRACT CERUMINOUS GLANDS BRAIN KIDNEYS HEART AND SPLEEN

FERON V J; KROES R
DEP. TOXICOL., CENT. INST. NUTR., P.O. BOX 360, 3700 AU ZEIST, NETH.
TOXICOLOGY 13 (2), 1979, 131-142. Coden: TXCYA
Language: ENGLISH

Wistar rats were exposed to atmospheres containing 0 (control) or 5000 ppm vinyl chloride monomer (VCM), 7 h/day, 5 days/wk, for 52 wk. After 4, 13, 26 and 52 wk each time 10 rats/sex per group were killed and subjected to extensive examinations. The morphological changes observed in the respiratory tract, ceruminous glands, brain, kidneys, heart and spleen were described. The VCM-effects included increased degree of tubular nephrosis, mild focal degeneration of the myocard and increased hematopoietic activity in the spleen. Primary tumors were found in the brain (ependymoma), lungs (papillary adenoma and mesenchymal type of tumor), ceruminous glands (mainly keratinized squamous cell carcinomas), and nasal cavity (carcinomas of the olfactory epithelium, carcino-sarcoma, esthesioneuroepithelioma).

Descriptors: NASAL CAVITY EPENDYMOMA PAPILLARY ADENOMA MESENCHYMAL TYPE TUMOR SQUAMOUS CELL CARCINOMA OLFACTORY EPITHELIAL CARCINOMA CARCINO SARCOMA ESTHESIO NEURO EPITHELIOMA

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM STUD-GENERAL(10060); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); PATHOLOGY-NECROSIS(12510); METABOLISM-GENL STUD,METAB PATHW(13002); CARDIOVASC SYST-HEART PATHOLOGY(+14506); BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006); BLOOD/BODY FLDS-LYMPHAT TISS,RES(15008); URIN SYST/EXT SECR-PATHOLOGY(+15506); RESPIRATORY SYST-GENL STUD,METHS(16001); RESPIRATORY SYST-PATHOLOGY(+16006); BONE,JNTS,FASC,CONN/ADIP-PATHOL(+18006); SENSE ORGANS-ANATOMY-(20002); SENSE ORGANS-PATHOLOGY(+20006); NERVOUS SYST-PATHOLOGY(+20506); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(22501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: MURIDAE(86375)

69047289

POLY VINYL CHLORIDE PNEUMOCONIOSIS EPIDEMIOLOGICAL STUDY OF EXPOSED WORKERS

MASTRANGELO G; MANNOR M; MARCE R G; BARTOLUCCI G B;
GEMIGNANI C; SALADINO G; SIMONATO L; SAIA B
INST. IMI, MED., UNIV. PADOVA, PADOVA, ITALY.
J OCCUP MED 21 (8), 1979, 540-542. Coden: JOCMA
Language: ENGLISH

Among 1216 workers who were employed in a polyvinyl chloride [PVC] production factory and who had had no previous dust exposure elsewhere, 20 cases of pneumoconiosis were found. Chest X-ray abnormalities were characterized by limited profusion, irregular type and low gravity. All 20 workers were

exposed to high PVC dust levels. The chest X-ray changes were observed after a minimum exposure of 5 yr and, in a small percentage of cases, were associated with slight restrictive respiratory function impairments. In the whole group of workers 388 cases (31.9%) were found with non-specific X-ray abnormalities mainly related to age and smoking.

Descriptors: HUMAN RESPIRATORY IMPAIRMENTS AGE SMOKING

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); SOCIAL BIOL/HUMAN ECOLOGY(05500); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BEHAVIOR BIOL-HUMAN BEHAVIOR(07004); ECOLOGY-BIO-CLIMATOL,BIOMETEOROL(07504); BIOCHEM STUD-GENERAL(10060); ANATOMY/HISTOL-RADIOLOGIC(11106); CHORDATE BODY REGNS-THORAX(-11312); METABOLISM-GENL STUD,METAB PATHW(13002); RESPIRATORY SYST-GENL STUD,METHS(16001); RESPIRATORY SYST-PHYSIOL,BIOCHEM-(16004); RESPIRATORY SYST-PATHOLOGY(+16006); PSYCHIATRY-ADDIC-TION(INC SMOKNG)(21004); TOXICOL-GENL/EXP STUDS,METHS(22501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); PUB HEALTH-ADMINISTR,STATISTICS(+37010); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015); EPIDEMIOL-ORGANIC DIS,NEOPLASMS(+37054); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); AGRONOMY-TOBACCO CROPS(52512)

Biosystematic Codes: SOLANACEAE(26775); HOMINIDAE(86215)

69040820

ACUTE HEPATO TOXICITY OF VINYL CHLORIDE AND ETHYLENE
MODIFICATION BY TRI CHLORO PROPENE OXIDE DI ETHYL MALEATE AND
CYSTEINE

CONOLLY R B; JAEGER R J
IMP. CHEM. IND. LTD., CENT. TOXICOL. LAB., ALDERLEY PARK,
CHESHIRE SK10 4TJ, ENGL., UK.
TOXICOL APPL PHARMACOL 50 (3). 1979. 523-532. Coden:
TXAPA

Language: ENGLISH

Vinyl chloride (VC) and ethylene are acutely hepatotoxic in rats pretreated with polychlorinated biophenyl (PCB). Several chemical treatments were used to investigate the mechanisms of acute VC and ethylene toxicity in PCB-pretreated rats. Trichloropropene oxide (TCPO) depletes hepatic glutathione (GSH) and inhibits hepatic epoxide hydrase (EH). Diethylmaleate (DEM) also depletes hepatic GSH. Cysteine is a rate-limiting precursor in hepatic GSH synthesis. Effects of these various treatments on VC and ethylene toxicity were compared with their influence on hepatic GSH concentrations. Exposures to VC and ethylene were by inhalation at 1000-50,000 ppm. TCPO significantly increased VC toxicity in fasted but not in fed rats. Ethylene toxicity was not affected by TCPO. These actions of TCPO were not attributable to changes in hepatic GSH. DEM significantly lowered GSH during exposure, but did not increase the hepatotoxicity of either VC or ethylene, suggesting either that hepatic GSH concentrations are not an important determinant of the acute response to VC and ethylene or that DEM has important effects in addition to hepatic GSH depletion. Cysteine protected significantly, though incompletely, against acute VC hepatotoxicity. There was no effect of cysteine on the toxicity of ethylene. In PCB-treated rats, hepatic GSH and EH influence the acute hepatotoxicity of VC, but not that of ethylene.

Descriptors: RAT ANTIDOTE POLY CHLORINATED BI PHENYL EPOXIDE
HYDRASE GLUTATHIONE DEPLETION PROTECTION FASTING

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM
STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-CARBOHY-
DR.(10068); ENZYMES-CHEM,PHYSICAL STUDIES(10806); ENZYMES-PHY-
SIOLOGICAL STUDIES(+10808); METABOLISM-GENL STUD,METAB
PATHW(+13002); METABOLISM-CARBOHYDRATES(+13004); METABOLISM-P-
ROTN,PEPTDS,AM ACDS(+13012); NUTRITION-MALNUTRITION,OBESITY(-
13203); RESPIRATORY SYST-GENL STUD,METHS(16001); RESPIRATORY
SYST-PATHOLOGY(+16006); PHARMACOL-DRUG METAB,METAB STIMU(+220-
03); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP
STUDS,METHS(+22501); TOXICOL-ANTIDOTES,PREVENTIVE(+22505);
TOXICOL-ENVIRONMNTL,INDUSTR(22506); ENVIRON HEALTH-AIR,WATR,SL
POLLN(37015)

Biosystematic Codes: MURIDAE(86375)

69038469

ACTIVATION OF VINYL CHLORIDE TO COVALENTLY BOUND METABOLITES
ROLES OF 2 CHLORO ETHYLENE OXIDE AND 2 CHLORO ACETALDEHYDEGUENGERICH F P; CRAWFORD W M JR; WATANABE P G
DEP. BIOCHEM., VANDERBILT UNIV. SCH. MED., NASHVILLE, TENN.
37232, USA.BIOCHEMISTRY 18 (23). 1979. 5177-5182. Coden: BICHA
Language: ENGLISH

2-Chloroethylene oxide, a postulated metabolite of vinyl chloride [a potential carcinogen], rearranged to 2-chloroacetaldehyde and hydrolyzed (and dehydrochlorinated) to glycolaldehyde in aqueous buffer. The hydrolysis was catalyzed by apparently homogeneous preparations of rat liver microsomal epoxide hydratase; purified hydratase also lowered the $t_{1/2}$ [half time] of the epoxide in aqueous buffer. 2-Chloroacetaldehyde was reduced by horse liver alcohol dehydrogenase in the presence of NADH and oxidized by yeast aldehyde dehydrogenase in the presence of NAD⁺. The NADPH-dependent covalent binding of [¹⁴C]vinyl chloride to protein was examined in systems containing rat liver microsomes or highly purified rat liver cytochrome P-450 and NADPH-cytochrome P-450 reductase. Since glycolaldehyde, 2-chloroethanol and 2-chloroacetic acid are relatively weak alkylating agents, the effects of epoxide hydratase and alcohol and aldehyde dehydrogenases on covalent binding were examined. In a reconstituted system containing cytochrome P-450 and its reductase, > 90% of the covalent binding of ¹⁴C label from vinyl chloride was blocked by the addition of epoxide hydratase. In the microsomal system only 50% of the covalent binding could be blocked by epoxide hydratase but > 90% of binding was blocked with alcohol or aldehyde dehydrogenase. In the microsomal system, neither inhibition of endogenous hydratase with 3,3,3-trichloropropylene oxide nor enhancement of hydratase activity by pretreatment of rats with trans-stilbene oxide affected the level of covalent binding of label from [¹⁴C]vinyl chloride. The use of highly purified enzymes in elucidating the chemistry of activation of compounds to reactive metabolites was demonstrated and the following statements were indicated: cytochrome P-450 activates vinyl chloride; 2-chloroethylene oxide is formed from vinyl chloride; 2-chloroethylene oxide is a substrate for epoxide hydratase; the rearrangement product 2-chloroacetaldehyde is an important alkylating agent derived from vinyl chloride; and cytochrome P-450 is effectively segregated from epoxide hydratase and highly nucleophilic groups in microsomal membranes in this process. A highly electrophilic metabolite apparently can form a less reactive compound which may be more effective in biological alkylations.

Descriptors: RAT HORSE YEAST 3 3 3 TRI CHLORO PROPYLENE
OXIDE ENZYME INHIBITOR-DRUG TRANS STILBENE OXIDE
METABOLIC-DRUG ALDEHYDE DEHYDROGENASE EPOXIDE HYDRATASE
ALCOHOL DEHYDROGENASE NADH CYTOCHROME P-450 MICROSOAL
MEMBRANE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION
BIOL-RADTN,ISOTOP TECH(06504); COMPARATIVE BIOCHEM-GENL
STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL
ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO
ACD(10064); BIOCHEM STUD-PORPHYRNS,BILE PIGM(10065);

BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); BIOPHYS-MEMBRANE
PHENOMENA(10508); ENZYMES-GEN,COMPAR STUD.COENZYM(10802);
ENZYMES-METHODS(10804); ENZYMES-CHEM,PHYSICAL STUDIES(10806);
ENZYMES-PHYSIOLOGICAL STUDIES(10808); METABOLISM-GENL
STUD,METAB PATHW(13002); METABOLISM-PROTNS,PEPTDS,AM ACDS(1-
3012); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); PHARMACOL-DRUG
METAB,METAB STIMU(22003); TOXICOL-GENL/EXP STUDS,METHS(22501)
; NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007)
Biosystematic Codes: FUNGI-UNSPECIFIED(15000); EQUIDAE(8614-
5); MURIDAE(86375)

69034047

1 YEAR TIME SEQUENCE INHALATION TOXICITY STUDY OF VINYL CHLORIDE IN RATS 1. GROWTH MORTALITY HEMATOLOGY CLINICAL CHEMISTRY AND ORGAN WEIGHTS

FERON V J; KRUYSSSE A; TIL H P
DEP. TOXICOL., CENT. INST. NUTR. FOOD RES. TNO, P.O. BOX 360, 3700 A ZEIST, NETH.

TOXICOLOGY 13 (1). 1979. 25-28. Coden: TXCYA

Language: ENGLISH

Wistar rats were exposed to atmospheres containing 0 (control) or 5000 ppm vinyl chloride monomer (VCM) [a potential carcinogen]. 7 h/day, 5 days/wk, for 52 wk. After 4, 13, 26 and 52 wk 10 rats/sex per group were killed and subjected to extensive examinations. Growth, mortality, hematology, clinical chemistry and organ weights were studied. Slight growth retardation throughout the experimental period and high mortality in the 2nd half of the study were observed in VCM-exposed animals. Some of the hematological parameters and biochemical blood parameters were slightly influenced by VCM after an experimental period of 52 wk. Blood clotting time was generally slightly shorter in VCM-exposed rats than in controls. There were minor indications of increased K contents in the blood serum in VCM-exposed animals during the 1st half of the test period. That the kidneys were adversely affected by VCM was evidence by increased blood urea N levels and relative kidney weights. After 52 wk increased weights of heart and spleen, and slight signs of anemia were noticed in VCM-exposed rats. The present study did not produce obviously suitable parameters for early diagnosing VCM-disease in man. [The effect of VCM exposure on industrial safety was discussed].

Descriptors: HUMAN KIDNEY PATHOLOGY HEART SPLEEN GROWTH RETARDATION ANEMIA BLOOD CLOTTING POTASSIUM CONTENTS NITROGEN LEVELS

Concept Codes: BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(1-0060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); MINERALS(10069); PHYSIOLOGY-GENERAL STUDIES(12002); PHYSIOLOGY-COMPARATIVE(12003); PATHOLOGY-DIAGNOSTIC(12504); PATHOLOGY--NECROSIS(12510); MINERALS(+13010); METABOLISM-PROTNS, PEPTDS, AM ACDS(+13012); CARDIOVASC SYST-PHYSIOL, BIOCHEM(14504); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(15002); BLOOD/BODY FLDS-BLD, LYM, RES PATH(+15006); BLOOD/BODY FLDS-LYMPHAT TISS, RES(15008); URIN SYST/EXT SECR-PATHOLOGY(+15506); RESPIRATORY SYST-PHYSIOL, BIOCHEM(16004); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); DEVELOPMNTL BIOL-GEN MORPHIGENSIS(+25508); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

69031414

FORMATION AND INACTIVATION OF A CHEMICALLY REACTIVE METABOLITE OF VINYL CHLORIDE IN RATS

PESSAYRE D; WANDSCHEER J C; DESCATOIRE V; ARTIGOU J Y; BENIAMOU J P

UNITE RECH. PHYSIOPATHOL. HEPATIQUE, INST. NATL. SANTE RECH. MED., HOP. BEAUJON, 92118 CLICHY, FR.

TOXICOL APPL PHARMACOL 49 (3). 1979. 505-516. Coden:

TXAPA

Language: ENGLISH

The mechanisms responsible for, and protecting against, metabolic activation of vinyl chloride [a potential carcinogen] were investigated in the rat. When [14C]vinyl chloride was incubated with hepatic microsomes, a 14C-labeled material became irreversibly bound to microsomal proteins; binding required NADPH, was decreased by CO, SKF 525-A or glutathione, and was increased by 1,1,1-trichloropropene-2,3-oxide (TCPD). Inhalation of a 5% vinyl chloride atmosphere decreased hepatic cytochrome P-450 and glutathione. Pretreatment of the animals with DDT or phenobarbital increased in vitro irreversible binding to microsomal proteins measured in the presence, but not in the absence, of TCPD and increased the in vivo loss of cytochrome P-450 during inhalation of vinyl chloride but decreased the in vitro irreversible binding to 10,000 g supernatant proteins and the in vivo loss of glutathione during inhalation of vinyl chloride. These results are consistent with the following views: vinyl chloride is activated by cytochrome P-450 into its chemically reactive epoxide; the epoxide may be inactivated by epoxide hydrazase or by binding to glutathione; pretreatment with DDT or phenobarbital increases the formation rate of the epoxide and its inactivation rate by epoxide hydrazase and cytochrome P-450 destruction is related to the formation rate of the epoxide, whereas glutathione depletion seems related to only that fraction of the formed epoxide which has escaped inactivation by microsomal epoxide hydrazase and has diffused in the cytosol. [The effect of vinyl chloride on industrial workers was discussed.]

Descriptors: HUMAN CARCINOGEN HEPATIC MICROSOME CARBON MONOXIDE SKF-525-A GLUTATHIONE 1 1 1 TRI CHLORO PROPENE 2 3 OXIDE PHENO BARBITAL METABOLIC-DRUG DDT INSECTICIDE EPOXIDE HYDRAZASE CYTOCHROME P-450 NADPH

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION BIOL-RADTN, ISOTOP TECH(06504); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10-060); BIOCHEM STUD-NUCL ACID, PURNS, PYRM(10062); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); BIOCHEM STUD-PORPHYRINS, BILE PIGM(10065); BIOPHYS-GENERAL BIOPHYS TECH(10504); ENZYMES-GEN, COMPAR STUD, COENZYMES(+10802); MOVEMENT(12100); METABOLISM-GENL STUD, METAB PATHW(+13002); METABOLISM-PROTNS, PEPTDS, AM ACDS(+13012); METABOLISM-PORPHYRINS, BILE PIGMN(13013); DIGESTIVE SYST-PHYSIOL, BIOCHEM(+14004); RESPIRATORY SYST-PHYSIOL, BIOCHEM(16004); PHARMACOL-DRUG METAB, METAB STIMU(22003); TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); IN VITRO STUDS-CELLULR, SUBCELL(32600); PEST CONTRL GENL/PESTICS/HERBICS(54600); ECONOM ENTOMOL-CHEM PHYS CONTRL(60016)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375); ABSTRACTS OF ENTOMOLOGY(96000)

69026559

THE OCCURRENCE OF ALIPHATIC CHLORINE AND BROMINE COMPOUNDS IN AUTOMOBILE EXHAUST

HASANEN E; SOININEN V; PYYSALO H; LEPPAMAKI E
CHEM. LAB., TECH. RES. CENT. FINL., 02150 ESPOO 15, FINL.
ATMOS ENVIRON 13 (8). 1979. 1217-1220. Coden: ATENB
Language: ENGLISH

A glass capillary gas chromatographic method was used to investigate whether automobile exhaust contains the scavenging substances of Pb added to gasoline, i.e., 1,2-dibromoethane and 1,2-dichloroethane, and their degradation products vinyl bromide and vinyl chloride. Exhaust gases were also examined for the presence of methyl chloride, dichloromethane, chloroform, carbon tetrachloride, 1,1,1-trichloroethane, trichloroethylene and tetrachloroethylene, which were identified in urban air. None of these compounds could be detected in the exhaust gases. The detection limits were 2 mg/m³ for methyl chloride, 0.5 mg/m³ for dichloromethane and for the other compounds investigated, 0.05 mg/m³. Based on the neutron activation analytical method, automobile exhaust contained 1.0 +/- 0.3 mg/m³ gaseous Cl compounds, so far unidentified, and corresponding Br compounds about 0.7 +/- 0.3 mg/m³, when Finnish 99-octane gasoline (Pb content 0.59 g/l) was used.

Descriptors: TETRA CHLORO ETHYLENE TRI CHLORO ETHYLENE 1 1 1 TRI CHLORO ETHANE 1 2 DI BROMO ETHANE 1 2 DI CHLORO ETHANE VINYL BROMIDE VINYL CHLORIDE METHYL CHLORIDE DI CHLORO METHANE CHLOROFORM CARBON TETRA CHLORIDE LEAD

Concept Codes: ECOLOGY-BIOCLIMATOL, BIOMETEOROL (+07504); BIOCHEM METH-GENERAL (+10050); BIOCHEM STUD-GENERAL (+10060); BIOPHYS-GENERAL BIOPHYS TECH (10504); MOVEMENT (12100); TOXICOL-ENVIRONMNTL, INDUSTR (+22506); ENVIRON HEALTH-AIR, WATR, -SL POLLN (+37015)

69017757

METABOLIC AND MUTAGENICITY STUDIES ON DDT AND 15 DERIVATIVES DETECTION OF 1 1 BIS- P CHLOROPHENYL-2 2-DICHLORO ETHANE AND 1 1 BIS- P CHLOROPHENYL-2 2 2-TRICHLOROETHYL ACETATE KELTHANE ACETATE AS MUTAGENS IN SALMONELLA-TYPHIMURIUM AND OF 1 1 BIS- P CHLOROPHENYL ETHYLENE OXIDE A LIKELY METABOLITE AS AN ALKYLATING AGENT

PLANCHIE G; CROISY A; MALAVEILLE C; TOMATIS L; BARTSCH H
UNIT CHEM. CARCINOGEN., INT. AGENCY RES. CANCER, 150 COURS ALBERT-THOMAS, 69372 LYON, FR.
CHEM-BIOL INTERACT 25 (2-3). 1979. 157-176. Coden: CBINA

Language: ENGLISH

Using a novel in vitro technique whereby microsomal enzymes were embedded in an agar layer to prolong their viability, 1,1-bis(p-chlorophenyl) ethylene (DDNU), a mammalian metabolite of 1,1-bis(p-chlorophenyl)-2,2,2-trichloroethane (DDT), was converted by microsomal monooxygenases of mouse liver into 1,1-bis(p-chlorophenyl)-1,2-ethanediol (DDNU-diol). The putative epoxide intermediate, 1,1-bis(p-chlorophenyl)ethylene oxide (DDNU-oxide), a new compound, was synthesized and it showed weak alkylating activity with DNA.

dine but was not mutagenic in *S. typhimurium* strains TA100 and TA98. DDT and 13 of its metabolites or putative synthetic derivatives, including 1,1-bis(p-chlorophenyl)-2,2-dichloroethylene (DDE), 1,1-bis(p-chlorophenyl)-2-chloroethylene (DDMU), 1,1-bis(p-chlorophenyl)-2-chloroethane (DDMS)-DDNU, 2,2-bis(p-chlorophenyl)ethanol (DDOH), bis(p-chlorophenyl)acetic acid (DDA) and 1,1-bis(p-chlorophenyl)-2,2,2-trichloroethanol (Kelthane), caused no mutagenic effects in *S. typhimurium* TA100 or TA98, either in the presence or absence of a mouse liver microsomal fraction. Kelthane acetate [1,1-bis(p-chlorophenyl)-2,2,2-trichloroethyl acetate] was a direct-acting mutagen in strain TA100, whereas 1,1-bis(p-chlorophenyl)-2,2-dichloroethane (DDD) was mutagenic in TA98 only in the presence of mouse liver microsomes. Possible pathways whereby DDT is activated to mutagenic and/or carcinogenic metabolites are discussed.

Descriptors: TA-98 TA-100 STRAINS MOUSE LIVER MICROSOME MONO OXYGENASE 1 1 BIS-P CHLOROPHENYL ETHYLENE 1 1 BIS-P CHLOROPHENYL-1 2 ETHANEDIOL 4-4 NITROBENZYL PYRIDINE 1 1 BIS-P CHLOROPHENYL-2 2-DICHLORO ETHYLENE 1 1 BIS-P CHLOROPHENYL-2-CHLORO ETHYLENE 1 1 BIS-P CHLOROPHENYL-2-CHLORO ETHANE 2 2 BIS-P CHLOROPHENYL ETHANOL BIS-P CHLOROPHENYL ACETIC-ACID 1 1 BIS-P CHLOROPHENYL-2 2 2-TRICHLORO ETHANOL MUTAGEN CARCINOGEN INSECTICIDE AGAR

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL (+02506); GENETICS/CYTOGENET-ANIMAL (+03506); BIOCHEM STUD-GENERAL (10060); BIOCHEM STUD-NUCL ACID, PURNS, PYRM (10062); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID (10064); BIOCHEM STUD-CARBOHYDR. (10068); ENZYMES-METHODS (+10804); ENZYMES-PHYSIOLOGICAL STUDIES (+10808); METABOLISM-GENL STUD, METAB PATHW (+13002); METABOLISM-PROTNS, PEPTDS, AM ACDS (13012); METABOLISM-NUCL ACID, PURINS, PYRM (+13014); DIGESTIVE SYST-PHYSIOL, BIOCHEM (14004); TOXICOL-GENL/EXP STUDS, METHS (22501); TOXICOL-ENVIRONMNTL, INDUSTR (+22506); NEOPLSMS/NEOPL AGENTS-CARCINOGENS (+24007); BACTERIAL AND VIRAL GENETICS (31500); MICROBIOLOG APPARAT, METHS, MEDIA (32000); IN VITRO STUDS-CELLULR, SUBCELL (32600); PEST CONTRL GENL/PESTICS/-HERBICS (54600); ECONOM ENTOMOL-CHEM PHYS CONTRL (60016)

Biosystematic Codes: ENTEROBACTERIACEAE (04810); MURIDAE (863-75); ABSTRACTS OF ENTOMOLOGY (96000)

69015057

RISKS TO THE OFFSPRING FROM PARENTAL OCCUPATIONAL EXPOSURES
HAAS J F; SCHOTTENFELD D
CORNELL UNIV. MED. COLL., 1300 YORK AVE., NEW YORK, N.Y.
10021, USA.

J OCCUP MED 21 (9). 1979. 607-613. Coden: JOCMA
Language: ENGLISH

Risks to the offspring of workers with occupational chemical exposures may derive from mutagenic, teratogenic or carcinogenic effects of industrial agents to which the parents are exposed. Evidence for impaired pregnancies and hazards to the offspring of working populations with chemical exposures is very limited. Perhaps the best documented example is increased spontaneous abortion rates in female operating room personnel who have 1st trimester exposure to waste anesthetic gases. Evidence is reviewed for hazards to the offspring resulting from parental occupational exposure to vinyl chloride, benzene, chloroprene, radiation and petroleum-derived hydrocarbons. It is essential in investigating the role of occupational factors that other environmental and behavioral factors with major effects on pregnancy outcome be accounted for. These include smoking, alcohol and drug exposures. An approach to surveillance for chromosomal abnormalities in offspring of occupationally exposed parents is outlined.

Descriptors: HUMAN CHROMOSOMAL ABNORMALITIES MUTAGEN TERATOGEN CARCINOGEN INDUSTRIAL AGENTS SPONTANEOUS ABORTION ANESTHETIC GASES VINYL CHLORIDE BENZENE CHLOROPRENE RADIATION PETROLEUM DERIVED HYDRO CARBONS SMOKING ALCOHOL

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(02508); GENETICS/CYT-GENET-HUMAN(+03508); RADIATION BIOL-RADTN EFF.PROTECT(+06506); BEHAVIOR BIOL-HUMAN BEHAVIOR(+07004); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD.METAB PATHW(13002); REPRODUCT SYST-PATHOLOGY(16506); NERVOUS SYST-GENL STUDS.METHS(20501); PSYCHIATRY-ADDICTION(INC SMOKNG)(21004); PHARMACOL-NEUROPHARMACOLOGY(22024); TOXICOL-GENL/EXP STUDS.METHS(+22501); TOXICOL-PHARMACOLOGICAL(+22504); TOXICOL-ENVIRON-MNTL,INDUSTRI(+22506); NEOPLMS/NEOPL AGNTS-CARCINOGENS(+24007); DEVELOPMNTL BIOL-PATHOLOGICAL(+25503); DEVELOPMNTL BIOL-DESCRIP TERATOL(+25552); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015); ENVIRON HEALTH-RADIATION HEALTH(+37017); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); AGRONOMY-TOBACCO CROPS(52512)

Biosystematic Codes: PLANTAE-UNSPECIFIED(11000); HOMINIDAE(-86215); BIOSIS INTERNAL USE(97000)

69014195

POLY VINYL CHLORIDE MEMBRANE FOR A GLUCOSE SENSOR

HIROSE S; HAYASHI M; TAMURA N; SUZUKI S; KARUBE I
CENT. RES. LAB., MITSUBISHI PETROCHEM. CO. LTD., AMI,
INASHIKI, IBARAGI 300-03, JPN.

J MOL CATAL 6 (4). 1979. 251-260. Coden: JMCAD
Language: ENGLISH

Glucose oxidase (EC 1.1.3.4) (20 mg/g of carrier) was immobilized on a porous polyvinylchloride membrane (PVC). The stability of the glucose oxidase was tested by the

immobilization. The glucose oxidase-PVC membrane was applied as a glucose sensor. As assay, reproducible within $\pm 7\%$ relative error, was completed within 1 min by the steady state method and within 15 s by the kinetic method. Glucose concentrations of fresh [human] sera were determined by the sensor which remained viable for more than 2 mo.

Descriptors: HUMAN GLUCOSE OXIDASE EC-1.1.3.4 ENZYME IMMOBILIZATION

Concept Codes: CLIN BIOCHEM-GENL STUDIES(+10006); BIOCHEM METH-CARBOHYDRATES(+10058); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-GENERAL BIOPHYS TECH(+10504); BIOPHYS-MEMBRANE PHENOMENA(10508); BIOPHYS-BIOENGINEERING(+10511); ENZYMES-METHODS(10804); METABOLISM-CARBOHYDRATES(13004); BLOOD/BODY FLOS-BLOOD,LYMPH STUD(+15002)

Biosystematic Codes: HOMINIDAE(86215)

69013353

SCLERODERMA SIMULATING VINYL CHLORIDE DISEASE

BRETZA J; GOLDMAN J A
EMORY UNIV. SCH. MED., 69 BUTLER ST. S.E., ATLANTA, GA.,
USA.

J OCCUP MED 21 (6). 1979. 436-438. Coden: JOCMA
Language: ENGLISH

Progressive systemic sclerosis, especially prior to distinctive internal organ involvement, can be difficult to distinguish from vinyl chloride disease. A 50 yr old male developed classic scleroderma while working with polyvinyl chloride. Early in his disease he displayed a number of features common to both disorders, including acroosteolysis, sclerodactyly, polygammopathy and circulating immune complexes. Characteristic visceral involvement was the cardinal feature which distinguished his disease from the pseudoscleroderma of vinyl chloride disease.

Descriptors: HUMAN WORKER PROGRESSIVE SYSTEMIC SCLEROSIS ACRO OSTEOLYSIS SCLERO DACTYLY POLY GAMMOPATHY CIRCULATING IMMUNE COMPLEXES

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); CHORDATE BODY REGNS-EXTREMITIES(11318); PATHOLOGY-GENERAL STUDIES(12502); PATHOLOGY-COMPARATIVE(12503); METABOLISM-CARBOHYDRATES(13004); METABOLISM-PROTNS,PEPTDS,AM ACDS(13012); BONE,JNTS,FASC,CONN/-ADIP-PATHOL(+18006); INTEGUMENT SYST-PATHOLOGY(+18506); TOXICOL-ENVIRONMNTL,INDUSTRI(+22506); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

69013345

OCCUPATIONAL ACRO OSTEOLYSIS IN VINYL CHLORIDE WORKERS IN ISRAEL

HAHN E; ADERKA D; SUPRUN H; SHTAMLER B
 DEP. RADIOL., NAHARIYA GOVT. HOSP., NAHARIYA, ISR.
 ISR J MED SCI 15 (3). 1979. 218-222. Coden: IJMDA
 Language: ENGLISH

Exposure to vinyl chloride monomer (VCM) may result in a bizarre syndrome, which is characterized by lytic changes in the distal phalanges, cutaneous stigmata of scleroderma and Raynaud's phenomenon. Detailed case histories of 2 such patients are presented. Epidemiologic, pathogenetic and radiological aspects of occupational acroosteolysis are briefly reviewed. The possibility is emphasized that the condition may result not only from industrial (i.e., occupational) exposure to VCM but also from exposure in the home or neighborhood (i.e., nonoccupational).

Descriptors: HUMAN SKIN FINGERS SWELLING DISTAL PHALANGE LYTIC CHANGES SCLERODERMA CUTANEOUS STIGMATA RAYNAUDS PHENOMENON EPIDEMIOLOGY PATHOGENICITY RADIOLOGY X-RAY HOME EXPOSURE

Concept Codes: PHOTOGRAPHY-METHS, MATLS, APPARAT(01012); SOCIAL BIOL/HUMAN ECOLOGY(05500); RADIATION BIOL-RADTN, ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); ANATOMY/HISTOL-RADIOLOGIC(11106); CHORDATE BODY REGNS-EXTREMITIES(11318); PHYSIOLOGY-INSTRUMENTATION(12004); PATHOLOGY-DIAGNOSTIC(12504); PATHOLOGY-INFLAMMATN, INFLAM DIS(12508); BLOOD/BODY FLDS-OTHER BODY FLDS(15010); BONE, JNTS, FASC, CONN/ADIP-PATHOL(-*18006); INTEGUMENT SYST-PATHOLOGY(*18506); TOXICOL-ENVIRONMNTL, INDUSTR(*22506); ENVIRON HEALTH-OCCUPATNL HEALTH(*37013); ENVIRON HEALTH-AIR, WATR, SL POLLN(*37015); EPIDEMIOL-MISCELL STUDIES(37056)

Biosystematic Codes: HOMINIDAE(86215)

69006581

THE EFFECTS OF 1,1-DI(p-CHLOROPHENYL)-2-CHLORO ETHYLENE OF PLASMA ENZYMES AND BLOOD CONSTITUENTS IN THE JAPANESE QUAIL COTURNIX-COTURNIX-JAPONICA

WESTLAKE G E; BUNYAN P J; STANLEY P I; WALKER C H
 PEST INFECT. CONTROL LAB., MINIST. AGRIC. FISH. FOOD, TOLWORTH, SURBITON, SURREY KT6 7NF, ENGL., UK.
 CHEM-BIOL INTERACT 25 (2-3). 1979. 197-210. Coden: CBINA

Language: ENGLISH

Glutamate oxaloacetate transaminase (GOT), glutamate dehydrogenase (GDH), sorbitol dehydrogenase (SDH), pseudo-cholinesterase (ChE) and various blood constituents were measured in the plasma of Japanese quail fed 1,1-di(p-chlorophenyl)-2-chloroethylene (DDMU, a DDT metabolite) at low levels for periods of 2-32 days. DDMU is a potent inducer of hepatic microsomal enzymes causing marked structural changes in the liver. A rapid increase in plasma GOT was observed within 4 days accompanied by an increase in relative liver weight. Plasma GDH and SDH increased to a maximum at 16-24 days which seems to be associated with hepatic cell proliferation. Plasma ChE showed a steady

increase over the time course of DDMU administration. The plasma lipid level was reduced after 4 days whereas the hepatic lipid content was substantially increased suggesting that the fatty liver condition may be caused by decreased liver triglyceride release. Plasma glucose was reduced at 8 days but there was no evidence of a hyperglycemic state. The changes noted after 2 days of DDMU diet were confirmed by measurements on birds 18 h after oral dosing with DDMU. The study demonstrates the apparent value of plasma enzyme measurements for the early detection of toxic effects. DDMU administration may lead to extrahepatic effects in addition to those previously described in the liver.

Descriptors: DDT METABOLITE LIVER DAMAGE FATTY LIVER GLUTAMATE OXAL ACETATE TRANS AMINASE GLUTAMATE DEHYDROGENASE SORBITOL DEHYDROGENASE PSEUDO CHOLIN ESTERASE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); BIOCHEM STUD-LIPIDS(10066); BIOCHEM STUD-CARBOHYDR.(10068); ENZYMES-GEN, COMPAR STUD, COENZYMES(10802); ENZYMES-CHEM, PHYSICAL STUDIES(10806); ENZYMES-PHYSIOLOGICAL STUDIES(*10808); PATHOLOGY-GENERAL STUDIES(12502); PATHOLOGY-DIAGNOSTIC-(12504); METABOLISM-GENL STUD, METAB PATHW(13002); METABOLISM--CARBOHYDRATES(*13004); METABOLISM-LIPIDS(*13006); METABOLISM--PROTEINS, PEPTIDES, AM ACIDS(*13012); DIGESTIVE SYST-ANATOMY(14002); DIGESTIVE SYST-PATHOLOGY(*14006); BLOOD/BODY FLDS-GENL STUDS, METHS(15001); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(*15002); DENTAL/ORAL BIOL-GENL STUD, METHS(19001); ROUTES OF IMMUNIZ, INFECT, THERAP(22100); TOXICOL-GENL/EXP STUDS, METHS(*22501); TOXICOL-ENVIRONMNTL, INDUSTR(22506); PEST CONTRL GENL/PESTICS/HERBICS(54600); ECONOM ENTOMOL-CHEM PHYS CONTRL(60016)

Biosystematic Codes: GALLIFORMES(85536); ABSTRACTS OF ENTOMOLOGY(96000)

69006542

DEVELOPMENT OF METHODOLOGIES TO ASSESS THE RELATIVE HAZARDS FROM THERMAL DECOMPOSITION PRODUCTS OF POLYMERIC MATERIALS

BARROW C S; LUCIA H; STOCK M F; ALARIE Y
CHEM. IND. INST. TOXICOL., RESEARCH TRIANGLE PARK, N.C.
27709, USA.

AM IND HYG ASSOC J 40 (5). 1979. 408-423. Coden: AIHAA
Language: ENGLISH

The physiological stress imposed upon mice due to the irritating properties of thermal decomposition products of polymeric materials was evaluated. Acute lethality and histopathological evaluations of the lung, eyes and kidney were included. The rankings of the polymeric materials studied from most of least hazardous was polytetrafluoroethylene > polyvinyl chloride > Douglas Fir and flexible polyurethane foam > fiber glass reinforced polyester > Cu coated wire with mineral insulation.

Descriptors: MOUSE LETHALITY LUNG EYE KIDNEY PATHOLOGY POLY TETRA FLUORO ETHYLENE POLY VINYL CHLORIDE DOUGLAS-FIR POLY URETHANE FIBER GLASS REINFORCED POLY ESTER COPPER COATED WIRE

Concept Codes: MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); EXTERN EFF-HOT(10618); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(+11108); PATHOLOGY-NECROSIS(12510); METABOLISM-GENL STUD,METAB PATHW(1300-2); MINERALS(13010); URIN SYST/EXT SECR-PATHOLOGY(+15506); RESPIRATORY SYST-PATHOLOGY(+16006); SENSE ORGANS-PATHOLOGY(+2-0006); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); TEMPERATURE-GENL,METHS(+23001); FORESTRY AND FOREST PRODUCTS(53500)

Biosystematic Codes: CONIFEROPSIDA (CONIFERAE)(25102); MURIDAE(86375)

69005998

STRESSES INVOLVED IN WEARING POLY VINYL CHLORIDE SUPPLIED AIR SUITS A REVIEW

RAVEN P B; DODSON A; DAVIS T O
DEP. PHYSIOL., N. TEX. STATE UNIV. HEALTH SCI. CENT./TCOM,
FT. WORTH, TEX., USA.

AM IND HYG ASSOC J 40 (7). 1979. 592-599. Coden: AIHAA
Language: ENGLISH

A side effect of the growth and development of industrial technology is the ever increasing number of hostile environments encountered by man. This situation resulted in the development of impermeable clothing as a barrier protection against the external environment. Although specific government standards concerning the design and engineering requirements of the impermeable suit were stated, little or no standardized evaluation of the majority of available suits was attempted. This review provided an in-depth summary of the physiological effects of a polyvinyl chloride protective suit while working. It was necessary to develop a standardized performance test to determine the protective and stressful characteristics of the individual manufacturer's designed suit. Recommendations of specific criteria for the test were obtained.

Descriptors: HUMAN PROTECTION STANDARDS

Concept Codes: GENL BIOL-INSTITUT,ADMIN,LEGISLN(00508); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); BIOPHYS-BIOENGINEERING(+10511); PHYSIOLOGY-STRESS(+12008); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)
Biosystematic Codes: HOMINIDAE(86215)

69002507

MUTAGENICITY OF VINYL CHLORIDE VINYLIDENE CHLORIDE AND CHLOROPRENE IN V-79 CHINESE HAMSTER CELLS

DREYON C; KUROKI T
UNIT CHEM. CARCINOGEN. INT. AGENCY RES. CANCER, 150 COURS
ALBERT THOMAS, 69372 LYON CEDEX 2, FR.
MUTAT RES 67 (2). 1979. 173-182. Coden: MUREA
Language: ENGLISH

The mutagenicity of vinyl chloride, vinylidene chloride (1,1-dichloroethylene) and chloroprene (2-chloro-1,3-butadiene) [industrial chemicals] was tested in V79 Chinese hamster cells in the presence of a 15,000 times g liver supernatant from phenobarbitone-pretreated rats and mice. Mutations in terms of 8-azaguanine and ouabain resistance were induced in a dose-related fashion by exposure to vapor of vinyl chloride in the presence of liver supernatant from phenobarbitone-pretreated rats. Vapors of vinylidene chloride and chloroprene induced a dose-related toxicity in the presence of liver supernatant from phenobarbitone-pretreated rats, but these 2 compounds were not mutagenic in V79 Chinese hamster cells under these conditions. The metabolic activation of these compounds and the correlation between their mutagenicity and carcinogenicity in humans and experimental animals were discussed.

Descriptors: LUNG CELL HUMAN EXPERIMENTAL ANIMAL RAT MOUSE LIVER SUPERNATANT PHEND BARBITONE 1 1 DI CHLORO ETHYLENE CHLOROPRENE OUABAIN RESISTANCE 8 AZA GUANINE RESISTANCE INDUSTRIAL CHEMICAL CARCINOGENICITY

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(*02506); CYTOLOGY/CYTOCHEM-HUMAN(02508); GENETICS/CYTOGENET-ANIMAL(*03506); GENETICS/CYTOGENET-HUMAN(*03508); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID,PURINS,PYRM(10062); BIOCHEM STUD-STEROLS-STERIODS(10067); BIOCHEM STUD-CARBOHYDR.(10068); ENZYMES-MET-HODS(10804); ENZYMES-PHYSIOLOGICAL STUDIES(*10808); PATHOLOGY-COMPARATIVE(12503); METABOLISM-GENL STUD,METAB PATHW(*13002); METABOLISM-PROTNS,PEPTDS,AM ACDS(13012); METABOLISM-NUCL ACID,PURINS,PYRM(*13014); DIGESTIVE SYST-GENL STUDS,METHS(140-01); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); RESPIRATORY SYST-GENL STUD,METHS(16001); PHARMACOL-DRUG METAB,METAB STIMU(22003); PHARMACOL-DIGESTIVE SYST(22014); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(*2-2501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); TISS CULTURE-APPARAT,METHS,MEDIA(3-2500); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); PHARMACOGNOSY/PHARMACEUT BOTANY(54000)

Biosystematic Codes: APOCYNACEAE(25580); VERTEBRATA-UNSPECIFIED(85150); HOMINIDAE(86215); CRICETIDAE(86310); MURIDAE(863-75)

Language: ENGLISH

The method developed to measure transient thrombus deposition from arterial blood on polymeric surfaces involved infusion of small amounts of 125I-labeled fibrinogen and 51Cr-labeled platelets into the circulation of anesthetized mongrel dogs. Radioactivity adsorbed to the walls of femoral A-V [artery to vein] shunts was counted to measure fibrin and platelet deposition with time following initial blood-polymer contact. Shunt segments were obtained at each datum for scanning electron microscopy of adhered thrombus material. Plasticized polyvinyl chloride (PVC), recognized as having poor blood compatibility, elicited rapid platelet and fibrin activation resulting in a transient maximum of thrombus deposition after 10-15 min of blood contact. Adherent thrombi subsequently left the surface. Contact of blood with segmented polyetherurethane (BIOMER) resulted in minimal platelet and fibrin deposition. Morphological analysis by EM confirmed these observations. This method can be used to determine the thrombogenic and embolic potential of polymeric surfaces and may be used to elucidate the mechanisms of artificial surface induced thrombosis.

Descriptors: DOG POLY VINYL CHLORIDE POLY ETHER URETHANE PLATELETS FIBRIN ARTIFICIAL SURFACE INDUCED THROMBOSIS

Concept Codes: ELECTRON MICROSCOPY(01058); CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); MINERALS(10069); BIOPHYS-BIOENGINEERING(*105-11); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(*11108); CARDIOVASC SYST-BLD VESS PATHOL(*14508); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(*15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(*15004); PHARMACOL-NEUROPHARMACOLOGY(22024)

Biosystematic Codes: CANIDAE(85765)

69000394

MEASUREMENT OF TRANSIENT THROMBUS DEPOSITION ON POLYMERIC MATERIALS

IHLENFELD J V; MATHIS T R; RIDDLE L M; COOPER S L
DEP. CHEM. ENG., UNIV. WIS., MADISON, WIS. 53706, USA.
THROMB RES 14 (6). 1979. 953-968. Coden: THROMB

19062018

SUBCHRONIC TOXICITY OF SOME PIGMENTS ON CADMIUM COMPOUNDS BASIS

PREDAN; POPA L; ARIESAN M; BORDAS E
 DEP. TOXICOL., INST. MED. PHARM., CLUJ-NAPOCA, ROM.
 2ND INTERNATIONAL CONGRESS ON TOXICOLOGY, BRUSSELS,
 BELGIUM, JULY 6-11, 1980. TOXICOL LETTERS (AMST) O (SPEC.
 ISSUE 1), 1980, 187. Coden: TOLEO

Language: ENGLISH

Descriptors: ABSTRACT RAT KIDNEY TESTES POLY ETHYLENE POLY VINYL CHLORIDE POLY STYRENE ENZYME CHANGES HISTO PATHOLOGY

Concept Codes: GENL BIOL-SYMPOSIA, PROCDNGS, REVW(00520); MICROSCOPY-HISTOL, HISTOCHEM TECH(01056); CYTOLOGY/CYTOCHEM-AN-IMÁL(02506); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACD(10064); MINERALS(10069); ENZYMES-GEN, COMPAR STUD, COENZYMES-(10802); ENZYMES-METHODS(10804); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); ANATOMY/HISTOL-MICRO, ULTRAMICRSC(11108); METABOLISM-GENL STUD, METAB PATHW(13002); MINERALS(13010); METABOLISM-PROTNS, PEPTDS, AM ACDS(13012); URIN SYST/EXT SECR-GEN STUD, METH(15501); URIN SYST/EXT SECR-PATHOLOGY(+15506); REPRODUCT SYST-GENL STUDS, METHS(16501); REPRODUCT SYST-PATHOLOGY(+16506); TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ENVIRONMNTL, INDUSTR(22506); ENVIRON HEALTH-AIR, WATR, SL POLLN(37015)

Biosystematic Codes: MURIDAE(86375)

19061616

BIOCHEMICAL MODIFICATION OF HUMAN RED BLOOD CELLS PRIOR TO FREEZE PRESERVATION

VALERI C R
 NAV. BLOOD RES. LAB., BOSTON UNIV. SCH. MED., 615 ALBANY ST., BOSTON, MASS. 02118, USA.

16TH ANNUAL MEETING OF THE SOCIETY FOR CRYOBIOLOGY, ATLANTA, GA., USA, OCT. 1-4, 1979. CRYOBIOLOGY 16 (6), 1979 (RECD. 1980), 597. Coden: CRYBA

Language: ENGLISH

Descriptors: ABSTRACT POLY VINYL CHLORIDE PLASTIC CONTAINER
 Concept Codes: GENL BIOL-SYMPOSIA, PROCDNGS, REVW(00520); CYTOLOGY/CYTOCHEM-HUMAN(02508); BIOCHEM STUD-GENERAL(10060); EXTERN EFF-COLD(10616); BLOOD/BODY FLDS-GENL STUDS, METHS(+15001); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004); TEMPERATURE-GENL, METHS(23001); TEMPERATURE-CRYOBIOLOGY(+23004)

Biosystematic Codes: HOMINIDAE(86215)

19060950

USE OF CONTINUOUS COULOMETRY TO DETERMINE ORGANO CHLORINE COMPOUNDS IN AN INDUSTRIAL ENVIRONMENT

RASPUTNIS I I
 INST. IND. HYG. OCCUP. DIS., LENINGRAD, USSR.
 GIG TR PROF ZABOL O (8), 1979, 56-58. Coden: GTPZA

Language: RUSSIAN

Descriptors: NOTE CHLORINATED HYDRO CARBONS VINYL CHLORIDE TRI CHLORO ETHYLENE DI CHLORO ETHANE METHYLENE CHLORIDE

Concept Codes: BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(+10504); TOXICOL-ENVIRONMNTL, INDUSTR(22506); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR, WATR, SL POLLN(+37015)

19060923

MIGRATION OF HARMFUL SUBSTANCES FROM POLY VINYL CHLORIDE MATERIALS USED IN WATER SUPPLY SYSTEMS/

SHEFTEL' V O; GRINBERG I M
 ALL-UNION RES. INST. HYG. TOXICOL. PESTIC. POLYM. PLAST., KIEV, USSR.

GIG SANIT O (8), 1979, 78-79. Coden: GISAA

Language: RUSSIAN

Concept Codes: ECOLOGY-LIMNOLOGY(+07514); ECOLOGY-WATR RESRCH, FISHERY BIOL(07517); BIOCHEM STUD-GENERAL(10060); MOVEMENT(12100); TOXICOL-ENVIRONMNTL, INDUSTR(22506); ENVIRON HEALTH-AIR, WATR, SL POLLN(+37015)

19057397

INDUCTION OF PRE NEOPLASTIC FOCI IN RAT LIVER BY HALOGENATED ETHYLENES

LAIB R J; BOLT H M; STOECKLE G
 ABT. TOXIKOL., PHARMAKOL. INST., UNIV., D-6500 MAINZ, W. GER.

21ST SPRING MEETING OF THE DEUTSCHE PHARMAKOLOGISCHE GESELLSCHAFT (GERMAN PHARMACOLOGICAL SOCIETY), MAINZ, WEST GERMANY, MARCH 18-21, 1980. NAUNYN-SCHMIEDEBERG'S ARCH PHARMACOL 311 (SUPPL.), 1980, R22. Coden: NSAPC

Language: ENGLISH

Descriptors: ABSTRACT VINYL CHLORIDE VINYL BROMIDE VINYLIDENE FLUORIDE TRI CHLORO ETHYLENE PER CHLORO ETHYLENE ATPASE

Concept Codes: GENL BIOL-SYMPOSIA, PROCDNGS, REVW(00520); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL-(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACD(10064); BIOPHYS-MOLECUL PROP, MACROMOLEC(10506); ENZYMES-PHYSIOLOGICAL STUDIES(10808); METABOLISM-GENL STUD, METAB PATHW(+13002); DIGESTIVE SYST-PATHOLOGY(+14006); TOXICOL-GENL/EXP STUDS, METHS(+22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: MURIDAE(86375)

19057390

ROLE OF PARENCHYMAL AND NONPARENCHYMAL RAT LIVER CELLS IN THE METABOLISM OF VINYL CHLORIDE

OTTENWALDER H; KAPPUS H; BOLT H M
 MED. INST. UMWELTHYG., UNIV. DUESSELD., DUESSELDORF, W. GER.
 2ND INTERNATIONAL CONGRESS ON TOXICOLOGY, BRUSSELS,
 BELGIUM, JULY 6-11, 1980. TOXICOL LETTERS (AMST) O (SPEC.
 ISSUE 1). 1980. 165. Coden: TOLED

Language: ENGLISH

Descriptors: ABSTRACT TUMORIGENESIS CARBON-14 NADPH
 GLUTATHIONE

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
 CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION BIOL-RADTN,ISOTOP
 TECH(06504); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL
 ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO
 ACD(10064); METABOLISM-GENL STUD,METAB PATHW(13002);
 METABOLISM-PROTNS,PEPTDS,AM ACDS(13012); METABOLISM-NUCL
 ACD,PURINS,PYRIM(13014); DIGESTIVE SYST-GENL STUDS,METHS(1400-
 1); DIGESTIVE SYST-PATHOLOGY(+14006); TOXICOL-GENL/EXP
 STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOP-
 LSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR,WATR-
 SL POLLN(37015)

Biosystematic Codes: MURIDAE(86375)

19057356

IMMUNOLOGICAL EFFECTS OF VINYL CHLORIDE IN MICE

SHARMA R P; GEHRING P J
 TOXICOL. PROGRAM, UTAH STATE UNIV., LOGAN, UTAH 84322, USA.
 NICHOLSON, W. J. AND J. A. MOORE (ED.). ANNALS OF THE NEW
 YORK ACADEMY OF SCIENCES, VOL. 320. HEALTH EFFECTS OF
 HALOGENATED AROMATIC HYDROCARBONS; INTERNATIONAL SYMPOSIUM,
 NEW YORK, N.Y., USA, JUNE 24-27, 1978. X+730P. NEW YORK
 ACADEMY OF SCIENCES: NEW YORK, N.Y., USA. ILLUS. MAPS. PAPER.
 ISBN 0-89766-008-0. O (O). 1979 (RECD. 1980). P551-563.
 Coden: ANYAA

Language: ENGLISH

Descriptors: HUMAN WORKER COMPARISON CARCINOGENESIS

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
 BIOCHEM STUD-GENERAL(10060); PATHOLOGY-COMPARATIVE(12503);
 METABOLISM-GENL STUD,METAB PATHW(13002); TOXICOL-GENL/EXP
 STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOP-
 LSMS/NEOPL AGNTS-CARCINOGENS(+24007); IMMUNOL/IMMUNOCHEM-GEN
 METH(34502); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); ENVIRON
 HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL
 POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

19055715

MUTAGENICITY OF VINYL CHLORIDE IN-VITRO AND IN-VIVO WITH YEAST AS INDICATOR ORGANISM

ECKARDT F; DE RUITER N; OTTENWALDER H
 ABT. PHARMAKOL., MED. INST. UMWELTHYG., UNIV. DUESSELDORF,
 GURLITTSTR. 53, D-4000 DUESSELDORF 1, W. GER.
 21ST SPRING MEETING OF THE DEUTSCHE PHARMAKOLOGISCHE

GESELLSCHAFT (GERMAN PHARMACOLOGICAL SOCIETY), MAINZ, WEST
 GERMANY, MARCH 18-21, 1980. NAUNYN-SCHMIEDEBERG'S ARCH
 PHARMACOL 311 (SUPPL.). 1980. R23. Coden: NSAPC

Language: ENGLISH

Descriptors: ABSTRACT SACCHAROMYCES-CEREVISIAE RAT LIVER
 MICROSOMES TRYPTOPHAN PROTOTROPH

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
 CYTOLOGY/CYTOCHEM-ANIMAL(02506);
 GENETICS/CYTOGENET-ANIMAL(+03506); COMPARATIVE BIOCHEM-GENL
 STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM
 STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOPHYS-MOLECUL
 PROP,MACROMOLEC(10506); METABOLISM-GENL STUD,METAB PATHW(+130-
 02); METABOLISM-PROTNS,PEPTDS,AM ACDS(13012); DIGESTIVE
 SYST-PATHOLOGY(+14006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+240-
 07); IN VITRO STUDS-CELLULR,SUBCELL(32600); MED/CLIN
 MICROBIOL-GEN,METH,TECH(36001); MED/CLIN MICROBIOL-MYCOLOGY(+
 36008); PLANT PHYSIOL-CHEM CONSTITUENTS(51522)

Biosystematic Codes: ASCOMYCETES(15100); MURIDAE(86375)

19047510

CONSIDERATIONS IN THE DECISION OF THE SWEDISH OCCUPATIONAL HEALTH STANDARD FOR VINYL CHLORIDE MONOMER

HOLMBERG B; WESTLIN A
 NATL. BOARD OCCUP. SAF. HEALTH, ARBETARSKYDDSSSTYRELSEN,
 FACK, S-100 26 STOCKHOLM, SWED.

HAMMOND, E. C. AND I. J. SELIKOFF (ED.). ANNALS OF THE NEW
 YORK ACADEMY OF SCIENCES, VOL. 329. PUBLIC CONTROL OF
 ENVIRONMENTAL HEALTH HAZARDS; INTERNATIONAL CONFERENCE, NEW
 YORK, N.Y., USA, JUNE 28-30, 1978. IX+405P. NEW YORK ACADEMY
 OF SCIENCES: NEW YORK, N.Y., USA. ILLUS. MAPS. PAPER. ISBN
 0-89766-031-5. O (O). 1979 (RECD. 1980). P201-206. Coden:
 ANYAA

Language: ENGLISH

Descriptors: HUMAN ANIMAL CARCINOGEN

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
 SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060);
 PATHOLOGY-COMPARATIVE(12503); METABOLISM-GENL STUD,METAB
 PATHW(13002); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/N-
 EOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL
 HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150); HOMINID-
 AE(86215)

19047509

INTERNATIONAL DIFFERENCES IN DECISION MAKING ON ENVIRONMENTAL CONTROLS CASE STUDY VINYL CHLORIDE

DUNCAN K P

LONDON W2 4TF, ENGL., UK.

HAMMOND, E. C. AND I. J. SELIKOFF (ED.). ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, VOL. 329. PUBLIC CONTROL OF ENVIRONMENTAL HEALTH HAZARDS; INTERNATIONAL CONFERENCE, NEW YORK, N.Y., USA, JUNE 28-30, 1978. IX+405P. NEW YORK ACADEMY OF SCIENCES: NEW YORK, N.Y., USA. ILLUS. MAPS. PAPER. ISBN 0-89766-031-5. O (O). 1979 (RECD. 1980). P183-187. Coden: ANYAA

Language: ENGLISH

Descriptors: HUMAN VINYL CHLORIDE CARCINOGEN LEGISLATION

Concept Codes: GENL BIOL-INSTITUT,ADMIN,LEGISLN(+00508); GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(13002); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

19044448

FASTENING OF HIVES WITH POLY VINYL CHLORIDE SAFE TRANSPORTATION

GALLARATO B

HARNAU, V. L'APICULTURE INDUSTRIELLE; SYMPOSIUM

INTERNATIONAL, BUCAREST AND TULCEA, AOUT, 16-24, 1978 (INDUSTRIAL APICULTURE: INTERNATIONAL SYMPOSIUM, BUCHAREST AND TULCEA, ROMANIA, AUG. 16-24, 1978). 184P. EDITIONS APIMONDIA: BUCHAREST, ROMANIA. ILLUS. PAPER. O (O). 1979. P145-147. Coden: O8632

Language: FRENCH

Descriptors: HONEY FLOW

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); BIOCHEM STUD-CARBOHYDR.(10068); FOOD TECH-SUGAR(+13524); ECONOM ENTOMOL-APICULTURE(+60018)

Biosystematic Codes: HYMENOPTERA(75326)

19042519

CLASSIFICATION AND NOMENCLATURE OF PROGRESSIVE SYSTEMIC SCLEROSIS SCLERODERMA

RODNAN G P; JABLONSKA S; MEDSGER T A JR

DEP. MED., UNIV. PITTSB. SCH. MED., PITTSBURGH, PA., USA.

CLIN RHEUM DIS 5 (1). 1979. 5-14. Coden: CRHDD

Language: ENGLISH

Descriptors: HUMAN POLY VINYL CHLORIDE DISEASE TRI CHLORO ETHYLENE INDUCED SCLERODERMA BLEOMYCIN INDUCED FIBROSIS EOSINOPHILS FASCIITIS PROGRESSIVE SYSTEMIC SCLEROSIS MORPHEA

Concept Codes: GENL BIOL-TAXONOMY,NOMENCLATUR(00504); CYTOLOGY/CYTOCHEM-HUMAN(02508); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); PATHOLOGY-GENERAL STUDIES(+12502); PATHOLOGY-INFLAMMATN,INFLAM DIS(+12508); BLOOD/BODY FLOS-BLD,LYM,RES PATH(+15006);

CELL STUDS(15004); BONE,JNTS,FASC,CONN/ADIP-PATHOL(+18006); INTEGUMENT SYST-PATHOLOGY(+18506); PHARMACOL-GENERAL STUDIES(-22002); PHARMACOL-CLINICAL PHARMACOL(22005); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-PHARMACOLOGICAL(22504); TOXICOL-ENVIRONMNTL,INDUSTR(22506); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015); CHEMOTHERAPY-GEN STUD,METH,METAB(38502)

Biosystematic Codes: HOMINIDAE(86215)

19042517

FASCIITIS AND FIBROSIS

LYNCH M; JAYSON M I V

RHEUM. RES. CENT., R. INFIRM., MANCHESTER, ENGL., UK.

CLIN RHEUM DIS 5 (3). 1979 (RECD. 1980). 833-856.

Coden: CRHDD

Language: ENGLISH

Descriptors: REVIEW HUMAN INFLAMMATION COLLAGEN DUPUYTREN'S DISEASE PEYRONIE'S DISEASE DRUG INDUCED PULMONARY FIBROSIS VINYL CHLORIDE DISEASE EOSINOPHILIC FASCIITIS SYSTEMIC SCLEROSIS

Concept Codes: BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); CHORDATE BODY REGNS-EXTREMITIES(11318); PATHOLOGY-INFLAMMATN,INFLAM DIS(+12508); METABOLISM-PROTNS,PEPTIDS,AM ACDS(13012); BLOOD/BODY FLOS-BLD,LYM,RES PATH(+15006); RESPIRATORY SYST-PATHOLOGY(+16006); REPRODUCT SYST-PATHOLOGY(+16506); MUSCLE SYST-PATHOLOGY(+17506); BONE,JNTS,FASC,CONN/ADIP-PATHOL(+18006); TOXICOL-PHARMACOLOGICAL(+22504); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-OCCUPATNL HEALTH(-37013)

Biosystematic Codes: HOMINIDAE(86215)

19037175

CARCINOGENIC RISK OF PRODUCTS USED IN THE PHARMACEUTICAL AND RELATED INDUSTRIES

COUSTOU F

UNIV. BORD. II, BORDEAUX, FR.

DAVIS, W. AND C. ROSENFELD (ED.). IARC (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER) SCIENTIFIC PUBLICATIONS, NO. 25. INSERM (INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE) SYMPOSIUM SERIES, VOL. 74. CARCINOGENIC RISKS: STRATEGIES FOR INTERVENTION; PROCEEDINGS OF A SYMPOSIUM, LYON, FRANCE, NOV. 30-DEC. 2, 1977. XV+283P. INTERNATIONAL AGENCY FOR RESEARCH ON CANCER: LYON, FRANCE. ILLUS. ISBN 92-832-1125-1; ISBN 2-85598-181-6. O (O). 1979. P129-150. Coden: IARCC

Language: ENGLISH

Descriptors: HUMAN HEALTH VINYL CHLORIDE MONOMER ANILINE DYES ARTIFICIAL SWEETENERS ASBESTOS AFLA TOXIN CARCINOGEN FOOD OCCUPATIONAL HAZARD

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); NUTRITION-PATHO-GENIC DIETS(13216); PHARMACOL-GENERAL STUDIES(22002); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); TOXICOL-PHARMACOLOGICAL(+22504); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CAR-CINOGENS(+24007); MED/CLIN MICROBIOL-MYCOLOGY(36008); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); FOOD/INDUS MICRO-FD/BEV SP CNTAM(39002); PLANT PHYSIOL-CHEM CONSTITUENTS(51522)

Biosystematic Codes: DEUTEROMYCETES(15500); HOMINIDAE(86215)

19037169

ASSESSMENT OF TRI CHLORO ETHYLENE AS AN OCCUPATIONAL CARCINOGEN

PAGE N N

PRIOR. RES. ANAL. BRANCH, NATL. INST. OCCUP. SAF. HEALTH, ROCKVILLE, MD., USA.

DAVIS, W. AND C. ROSENFELD (ED.). IARC (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER) SCIENTIFIC PUBLICATIONS, NO. 25. INSERM (INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE) SYMPOSIUM SERIES, VOL. 74. CARCINOGENIC RISKS: STRATEGIES FOR INTERVENTION; PROCEEDINGS OF A SYMPOSIUM, LYON, FRANCE, NOV. 30-DEC. 2, 1977. XV+283P. INTERNATIONAL AGENCY FOR RESEARCH ON CANCER: LYON, FRANCE. ILLUS. ISBN 92-832-1125-1; ISBN 2-85598-181-6. O (O). 1979. P75-80. Coden: IARCC

Language: ENGLISH

Descriptors: MOUSE RAT HUMAN VINYL CHLORIDE CARCINOGEN EPOXIDE METABOLITE

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(+13002); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CAR-CINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

19035785

AN ACQUIRED RED CELL ANTIGEN DERIVED FROM POLY VINYL CHLORIDE BLOOD PACKS

BRUCE M; CRAWFORD R J; MITCHELL R; GILES C M
GLASG. AND W. SCOTL. BLOOD TRANSFUS. SERV., LAW HOSP.,
CARLUKE, LANARKSHIRE ML8 5ES, SCOTL., UK.

MED LAB SCI 37 (2). 1980. 171-172. Coden: MLASD

Language: ENGLISH

Descriptors: NOTE HUMAN TOXICITY

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(02508); BIOCHEM STUD-GENERAL(10060); BLOOD/BODY FLDS-GENL STUDS,METHS(+15001); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004); TOXICOL-GENL/EXP STUDS,METHS(+22501); IMMUNOL/IMMUNOCHEM-IMMUNOHEMATOL(+34506)
Biosystematic Codes: HOMINIDAE(86215)

19035413

UTILIZATION OF THE CHINESE HAMSTER OVARY CELL HYPO XANTHINE GUANINE PHOSPHO RIBOSYL TRANSFERASE SYSTEM METABOLIC ACTIVATION AND METHOD FOR TESTING GASES

KRAHN D F

HASKELL LAB. TOXICOL. IND. MED., E.I. DU PONT DE NEMOURS CO., WILMINGTON, DEL. 19898, USA.

HSIE, A. W., J. P. O'NEILL AND V. K. MCELHENY (ED.). BANBURY REPORT, 2. MAMMALIAN CELL MUTAGENESIS: THE MATURATION OF TEST SYSTEMS; PROCEEDINGS OF A MEETING, MAY 1979. XIV+504P. COLD SPRING HARBOR LABORATORY: COLD SPRING HARBOR, N.Y., USA. ILLUS. ISBN 0-87969-201-4. O (O). 1979 (RECD. 1980). P251-262. Coden: BANRD

Language: ENGLISH

Descriptors: CHLOROFLUORO METHANE TRI CHLOROFLUORO METHANE VINYL CHLORIDE DI CHLORODIFLUORO METHANE CHLOROFLUORO METHANE MUTAGEN CYTO TOXICITY

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); CYTOLOGY/CYTOCHEM-ANIMAL(+02506); GENETICS/CYTOGENET-ANIMAL(+03506); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); PATHOLOGY-NECROSIS(12510); METABOLISM-PROTNS,PEPTDS,AM ACDS(13012); METABOLISM-NUCL ACD,PURINS,PYRIM(+13014); REPRODUCT SYST-GENL STUDS,METHS(16501); TOXICOL-GENL/EXP STUDS,METHS(+22501); TISS CULTURE-APPAR-AT,METHS,MEDIA(32500); IN VITRO STUDS-CELLULR,SUBCELL(32600)
Biosystematic Codes: CRICETIDAE(86310)

R&S 138462

DIALOG File5:

Jan BA7502;RRM2402(See File55) (c. BIOSIS 1982) (Item 364 of 858) User 3614 25Jan83 2108

19030691

PROBLEM OF VINYL CHLORIDE HAZARD IN CONNECTION WITH HYGIENIC ASPECTS OF THE USE OF POLY VINYL CHLORIDE MATERIALS

DYUBANKOVA E N; BYKHOVSKII A V

F.F. ERISMAN MOSC. RES. INST. HYG., MOSCOW, USSR.

GIG SANIT O (1). 1979. 69-74. Coden: GISAA

Language: RUSSIAN

Descriptors: CHILD FOOD WRAPPER GENETICS

Concept Codes: GENETICS/CYTOGENET-HUMAN(03508); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(13002); FOOD TECH-PREP,PROCE-SSNG,STORAGE(13532); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); TOXICOL-ENVIRONMNTL,INDUSTR(22506); PEDIATRICS(25000); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

19030550

ACUTE MORTALITY DUE TO INHALATION OF THERMAL DECOMPOSITION PRODUCTS OF SYNTHETIC AND NATURAL POLYMERS

ANDERSON R C; ALARIE Y

DEP. IND. ENVIRON. HEALTH SCI., GSPH, UNIV. PITTSB., PITTSBURGH, PA. 15261, USA.

18TH ANNUAL MEETING OF THE SOCIETY OF TOXICOLOGY, NEW ORLEANS, LA., USA, MAR. 11-15, 1979. TOXICOL APPL PHARMACOL 48 (1 PART 2). 1979. A5. Coden: TXAPA

Language: ENGLISH

Descriptors: ABSTRACT MOUSE DOUGLAS-FIR POLY TETRA FLUORO ETHYLENE POLY CARBONATE POLY VINYL CHLORIDE POLY URETHANE FOAM POLY STYRENE FOAM FIBERGLASS REINFORCED POLY ESTER

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); BIOCHEM STUD-GENERAL(+10060); EXTERN EFF-HOT(+10618); PATHOLOGY-NECROSIS(12510); RESPIRATORY SYST-GENL STUD,METHS(1-6001); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); TEMPERATURE-GENL,METHS(23001); FORESTRY AND FOREST PRODUCTS(53500)

Biosystematic Codes: CONIFEROPSIDA (CONIFERAE)(25102); MURIDAE(86375)

19029809

HYGIENIC ASSESSMENT OF PROCESSES OF HIGH TEMPERATURE TREATMENT OF POLY VINYL CHLORIDE FINISHING MATERIALS

ZOLKIN G A

ALL-UNION RES. INST. CONSTR. IND., OFF. STATE CONSTR. USSR, MOSCOW, USSR.

GIG SANIT O (4). 1979. 76-77. Coden: GISAA

Language: RUSSIAN

Descriptors: VINYL CHLORIDE HYDROGEN CHLORIDE CARBON MON OXIDE HYDRO CARBONS MAXIMUM PERMISSIBLE CONCENTRATION

Concept Codes: GENL BIOL-INSTITUT,ADMIN,LEGISLN(00508); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10060); EXTERN

URE-GENL,METHS(+23001); ENVIRON HEALTH-OCCUPATNL HEALTH(+3701-3)

19028465

INSULIN KINETICS WITH INTRA VENOUS HYPER ALIMENTATION IN POLY VINYL CHLORIDE AND GLASS CONTAINERS

COWAN G S M JR

CLIN. INVEST. SVC., D.D. EISENHOWER ARMY MED. CENT., FT. GORDON, GA. 30905, USA.

64TH ANNUAL MEETING OF THE FED. AM. SOC. EXP. BIOL., ANAHEIM, CALIF., USA, APR. 13-18, 1980. FED PROC 39 (3). 1980. ABSTRACT 4460. Coden: FEPRA

Language: ENGLISH

Descriptors: ABSTRACT HUMAN

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); RADIATION BIOL-RADTN,ISOTOP TECH(06504); CLIN BIOCHEM-GENL STUDS(10006); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); METABOLISM-PROTNS,PEPTDS,AM ACDS(+13012); NUTRITION-GENL,NUTR STATUS,METHS(+13202); CARDIOVASC SYST-GENL STUDS,METHS(14501); PHARMACOL-DRUG METAB,METAB STIMU(+22003); PHARMACOL-ENDOCRINE SYST(+22016); ROUTES OF IMMUNIZ,INFECT,THERAP(22100)

Biosystematic Codes: HOMINIDAE(86215).

19026946

VINYL CHLORIDE UBIQUITOUS CARCINOGEN

LINGEMAN C H

NATL. CANCER INST., BETHESDA, MD. 20014, USA.

NIELSEN, S. W., G. MIGAKI AND D. G. SCARPELLI (ED.). ANIMALS AS MONITORS OF ENVIRONMENTAL POLLUTANTS: SYMPOSIUM, STORRS, CONN., USA, 1977. XII+421P. NATIONAL ACADEMY OF SCIENCES: WASHINGTON, D.C., USA. ILLUS. MAPS. PAPER. ISBN 0-309-02871-X. O (0). 1979 (RECD. 1980). P391-392. Coden: O8582

Language: ENGLISH

Descriptors: ABSTRACT MOUSE RAT HAMSTER HUMAN ANIMAL DEATH HEM ANGIO SARCOMA FIBROSIS

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); PATHOLOGY-NECROSIS(12510); BLOOD/BODY FLDS-GENL STUDS,METHS(1-5001); BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006); TOXICOL-GENL-/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); NEOPLSMS/NEOPL AGNTS-BLOOD,RES(+24010); ENVIRON HEALTH-AIR,WATR,SL POLLN(370-15)

Biosystematic Codes: ANIMALIA-UNSPECIFIED(33000); HOMINIDAE-(86215); CRICETIDAE(86310); MURIDAE(86375)

19026930

THE METABOLIC ACTIVATION OF CHEMICAL CARCINOGENS

SIMS P

DIV. CHEM., CHESTER BEATTY RES. INST., R. CANCER HOSP.,
LONDON, ENGL., UK.

BR MED BULL 36 (1), 1980. 11-18. Coden: BMBUA

Language: ENGLISH

Descriptors: REVIEW RAT LIVER AFLA TOXIN B-1 SAFROLE
NAPHTHALENE BENZO A PYRENE 2 ACETYLAMINO FLUORENE DI METHYL
NITROSAMINE VINYL CHLORIDE EPOXIDE HYDRATASE GLUCURONYL
TRANSFERASES SULFO TRANSFERASES MONO OXYGENASESConcept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM
STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); ENZYMES-PHYSIOLOGICAL
STUDIES(+10808); METABOLISM-GENL STUD, METAB PATHW(+13002);
DIGESTIVE SYST-PHYSIOL, BIOCHEM(14004); TOXICOL-GENL/EXP
STUDS, METHS(+22501); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007);
MED/CLIN MICROBIOL-MYCOLOGY(36008); PLANT PHYSIOL-CHEM
CONSTITUENTS(51522); AGRONOMY-OIL CROPS(52514)Biosystematic Codes: DEUTEROMYCETES(15500); ANGIOSPERMAE-UN-
SPECIFIED(25200); MURIDAE(86375)

19020375

THE EFFECTS OF TOTI GESTATIONAL EXPOSURE TO ETHCHLORVYNOL ON
DEVELOPMENT AND BEHAVIOR

PETERS M A; HUDSON P M

PHARMACOL. DEP., SCH. MED., LOMA LINDA UNIV., LOMA LINDA,
CALIF. 92350, USA.64TH ANNUAL MEETING OF THE FED. AM. SOC. EXP. BIOL.,
ANAHEIM, CALIF., USA, APR. 13-18, 1980. FED PROC 39 (3).
1980. ABSTRACT 4042. Coden: FEPA

Language: ENGLISH

Descriptors: ABSTRACT VINYL CHLORIDE OFFSPRING

Concept Codes: GENL BIOL-SYMPOSIA, PROCONGS, REVW(00520);
BEHAVIOR BIOL-ANIMAL BEHAVIOR(+07003); BIOCHEM STUD-GENERAL(1-
0060); PHYSIOLOGY-GENERAL STUDIES(12002); PATHOLOGY-GENERAL
STUDIES(12502); REPRODUCT SYST-PHYSIOL, BIOCHEM(16504); NERVOUS
SYST-PATHOLOGY(+20506); TOXICOL-GENL/EXP STUDS, METHS(+22501);
TOXICOL-ENVIRONMNTL, INDUSTR(22506); DEVELOPMNTL BIOL-PATHOLOG-
ICAL(+25503); DEVELOPMNTL BIOL-EXPERIMENTAL(+25504)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150)

19020288

TRANS MEMBRANE ALKYLATION A NEW METHOD FOR STUDYING
IRREVERSIBLE BINDING OF REACTIVE METABOLITES TO NUCLEIC-ACIDS

LAIB R J; BOLT H M

ABT. TOXIKOL., PHARMACOL. INST., UNIV., OBERE ZAHLBACHER
STR. 67, D-6500 MAINZ, W. GER.

BIOCHEM PHARMACOL 29 (3), 1980. 449-452. Coden: BCPA

Language: ENGLISH

Descriptors: NOTE RAT LIVER MICROSOMES VINYL CHLORIDE POLY
ADENYLIC-ACID 1-N-6 ETHENO ADENOSINEConcept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM
STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID, PURNS, PYRM(+10062);
METABOLISM-GENL STUD, METAB PATHW(+13002); DIGESTIVESYST-PHYSIOL, BIOCHEM(14004); PHARMACOL-DRUG METAB, METAB
STIMU(+22003); TOXICOL-GENL/EXP STUDS, METHS(+22501)

Biosystematic Codes: MURIDAE(86375)

19016257

THE COMPARATIVE EFFECTS OF AGE OF AN ANIMAL AT TIME OF
EXPOSURE AND EXPOSURE DURATION ON VINYL CHLORIDE
CARCINOGENESISBOORMAN G A; MCCONNELL E E; COCKRELL B Y; DREW R T; STONE C
J; HASEMAN J K; MOORE J ANATL. INST. ENVIRON. HEALTH SCI., P.O. BOX 12233, RESEARCH
TRIANGLE PARK, N.C. 27709, USA.64TH ANNUAL MEETING OF THE FED. AM. SOC. EXP. BIOL.,
ANAHEIM, CALIF., USA, APR. 13-18, 1980. FED PROC 39 (3).
1980. ABSTRACT 1481. Coden: FEPA

Language: ENGLISH

Descriptors: ABSTRACT GOLDEN SYRIAN HAMSTER RAT MOUSE
CARCINOGEN HEM ANGIO SARCOMA SKIN TUMOR NONGLANDULAR STOMACH
TUMOR MAMMARY TUMOR HEPATO CELLULAR TUMORConcept Codes: GENL BIOL-SYMPOSIA, PROCONGS, REVW(00520);
CYTOLOGY/CYTOCHEM-HUMAN(02508); BIOCHEM STUD-GENERAL(10060);
DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS
PATHOL(+14508); REPRODUCT SYST-PATHOLOGY(+16506); INTEGUMENT
SYST-PATHOLOGY(+18506); TOXICOL-GENL/EXP STUDS, METHS(+22501);
NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007)

Biosystematic Codes: CRICETIDAE(86310); MURIDAE(86375)

19016210

FORMATION AND INACTIVATION OF A REACTIVE METABOLITE OF VINYL
CHLORIDEPESSAYRE D; WANDSCHEER J-C; ARTIGOU J-Y; DESCATOIRE V;
DEGOTT C; BENHAMOU J-PUNITE RECH. PHYIOPATHOL. HEPATIQUE, INST. NATL. SANTE RECH.
MED., HOP. BEAUJON, F-92110 CLICHY, FR.14TH FORUM OF RESEARCH OF THE FRENCH NATIONAL SOCIETY OF
GASTROENTEROLOGY AND 6TH MEETING OF THE FRENCH ASSOCIATION FOR
STUDY OF THE LIVER, TOULOUSE, FRANCE, OCT. 13-14, 1978.
GASTROENTEROL CLIN BIOL 3 (1), 1979. 100. Coden: GCBID

Language: FRENCH

Descriptors: ABSTRACT HUMAN CARCINOGEN HEPATO TOXIC
CYTOCHROME P-450Concept Codes: GENL BIOL-SYMPOSIA, PROCONGS, REVW(00520);
BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, A-
MINO ACID(10064); BIOCHEM STUD-PORPHYRNS, BILE PIGM(10065);
ENZYMES-GEN, COMPAR STUD, COENZYMES(+10802); METABOLISM-GENL
STUD, METAB PATHW(+13002); DIGESTIVE SYST-PATHOLOGY(+14006);
TOXICOL-GENL/EXP STUDS, METHS(+22501); NEOPLSMS/NEOPL AGENTS-CA-
RCINOGENS(+24007)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150)

19009595

THE NATURE AND FREQUENCY OF SLEEP DISORDERS IN PERSONS
EXPOSED TO THE EFFECT OF VINYL CHLORIDE DURING WORK

GNESINA E A; ANTONYUZHENKO V A; MASHIKHIN E N; ROSTOVITSEVA G

INST. IND. HYG. OCCUP. DIS., GORKI, USSR.
GIG TR PROF ZABOL O (11). 1978 (RECD. 1979). 16-19.

Coden: GTPZA

Language: RUSSIAN

Descriptors: DYSSOMNIA ELECTRO ENCEPHALOGRAPHY

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BEHAVIOR
BIOL-HUMAN BEHAVIOR(07004); BIOCHEM STUD-GENERAL(10060);
BIOPHYS-GENERAL BIOPHYS TECH(10504); PATHOLOGY-DIAGNOSTIC(125-
04); METABOLISM-GENL STUD,METAB PATHW(13002); NERVOUS
SYST-GENL STUDS,METHS(20501); NERVOUS SYST-PATHOLOGY(+20506);
PSYCHIATRY-PSYCHPATH-DYMN,THERAP(21002);
TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-OCCUPATNL
HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)
Biosystematic Codes: HOMINIDAE(86215)

19009060

A CASE OF STRANGULATION OF THE PENIS

MIYAMOTO S-I; TAMIYA T; TAKATSUKA K

DEP. UROL., SUMAGAWA, HOKKAIDO, JPN.

NISHINIHON J UROL 41 (6). 1979 (RECD. 1980). 1129-1130.

Coden: NHJUA

Language: JAPANESE

Descriptors: NOTE HUMAN PROSTATE HYPERTROPHY URINARY
DITBBLING SWELLING VINYL CHLORIDE PIPE

Concept Codes: BIOCHEM STUD-GENERAL(10060); PATHOLOGY-INFLA-
MMATN,INFLAM DIS(12508); URIN SYST/EXT SECR-PHYSL,BIOCHEM(+15-
504); REPRODUCT SYST-GENL STUDS,METHS(16501); REPRODUCT
SYST-PATHOLOGY(+16506)

Biosystematic Codes: HOMINIDAE(86215)

19006804

LOSS OF VITAMIN A FROM TOTAL PARENTERAL NUTRITION SOLUTIONS

MCKENNA M C; BIERI J G

NATL. INST. HEALTH, BUILD. 10, ROOM 5N-102, BETHESDA, MD.
20205, USA.

64TH ANNUAL MEETING OF THE FED. AM. SOC. EXP. BIOL.,
ANAHEIM, CALIF., USA, APR. 13-18, 1980. FED PROC 39 (3).
1980. ABSTRACT 1561. Coden: FEPA

Language: ENGLISH

Descriptors: ABSTRACT HUMAN RETINOL POLY VINYL CHLORIDE
INFUSION TUBING

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-VITAMINS(10063);
BIOCHEM STUD-LIPIDS(10066); PATHOLOGY-THERAPY(12512); NUTRITI-
ON-MALNUTRITION,OBESITY(+13203);
NUTRITION-VITAMINS,FAT-SOLUBLE(+13208);
NUTRITION-PROPHYLAC,THERAP DIETS(+13218)

Biosystematic Codes: HOMINIDAE(86215)

19005720

INTERNATIONAL AGENCY FOR RESEARCH ON CANCER MONOGRAPHS ON
THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO HUMANS
VOL. 19. SOME MONOMERS PLASTICS AND SYNTHETIC ELASTOMERS AND
ACROLEIN LYONS FRANCE FEB. 7-13 1978

INT AGENCY RES CANCER

LYONS, FR.

INTERNATIONAL AGENCY FOR RESEARCH ON CANCER. IARC
(INTERNATIONAL AGENCY FOR RESEARCH ON CANCER) MONOGRAPHS ON
THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO
HUMANS, VOL. 19. SOME MONOMERS, PLASTICS AND SYNTHETIC
ELASTOMERS, AND ACROLEIN, LYONS, FRANCE, FEB. 7-13, 1978.
513P. WHO: GENEVA, SWITZERLAND, ILLUS. PAPER. ISBN
92-832-1219-3. O (O). 1979. 513P. Coden: IARMB

Language: ENGLISH

Descriptors: BOOK ACRYLIC-ACID ACRYLATES ACRYLONITRILE
CAPROLACTAM NYLON 6 CHLOROPRENE POLY CHLOROPRENE ETHYLENE POLY
ETHYLENE METHYL METHACRYLATE POLY METHYL METHACRYLATE
PROPYLENE POLY PROPYLENE STYRENE STYRENE OXIDE TETRA FLUORO
ETHYLENE POLY TETRA FLUORO ETHYLENE DI ISO CYANATES POLY
URETHANES VINYL ACETATE VINYL BROMIDE VINYL CHLORIDE
VINYLIDENE CHLORIDE N VINYL-2 PYRROLIDONE POLY VINYL
PYRROLIDONE ACROLEIN

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL
PROP,MACROMOLEC(10506); TOXICOL-GENL/EXP STUDS,METHS(+22501);
NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: HOMINIDAE(86215)

19005668

HEPATIC ANGIO SARCOMA ASSOCIATED WITH USE OF ANDROGENIC
ANABOLIC STEROIDS

FALK H; THOMAS L B; POPPER H; ISHAK K

CENT. DIS. CONTROL, ATLANTA, GA., USA.

30TH ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR THE
STUDY OF LIVER DISEASE, CHICAGO, ILL., USA, NOV. 7, 1979.
GASTROENTEROLOGY 77 (5). 1979. A11. Coden: GASTA

Language: ENGLISH

Descriptors: ABSTRACT HUMAN VINYL CHLORIDE ARSENIC
THOROTRAST CARCINOGEN

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-STEROLS,STERIODS(10-
067); MINERALS(10069); DIGESTIVE SYST-PATHOLOGY(+14006);
ENDOCRINE SYST-GONADS,PLACENTA(17006); PHARMACOL-DRUG METAB,M-
ETAB STIMU(22003); PHARMACOL-ENDOCRINE SYST(22016);
TOXICOL-GENL/EXP STUDS,METHS(22501); TOXICOL-PHARMACOLOGICAL(-
22504); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: HOMINIDAE(86215)

19003257

STUDY OF FUNGAL RESISTANCE OF SOME LIQUID PLASTICIZERS USED IN POLY VINYL CHLORIDE FORMULAS

LINOVITSKAYA V M; KURGANOVA L N; ANISIMOV A A; BOCHKAREVA G G; OVCHINNIKOV YU A; KOMOLOVA V M
GORKI STATE UNIV., GORKI, USSR.

APPL BIOCHEM MICROBIOL (ENGL TRANSL PRIKL BIOKHIM MIKROBIOL) 15 (1), 1979, 54-57. Coden: APBMA

Language: ENGLISH

Descriptors: PENICILLIUM-FUNICULOSUM

Concept Codes: BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(+13002); MICROBIOLOG APPARAT,METHS,MEDIA(320-00); FOOD/INDUS MICRO-BIODEGRAD,DETER(+39006); PLANT PHYSIOL-METABOLISM(+51519)

Biosystematic Codes: DEUTEROMYCETES(15500)

18061977

MORPHOLOGIC PARAMETERS OF HEPATIC INJURIES

POPPER H

SCH. MED., CITY UNIV. N.Y., 535 E. 80TH ST., NEW YORK, N.Y. 10021, USA.

HUNTER, W. J. AND J. G. P. M. SMEETS (ED.). THE EVALUATION OF TOXICOLOGICAL DATA FOR THE PROTECTION OF PUBLIC HEALTH: PROCEEDINGS OF THE INTERNATIONAL COLOQUIUM, LUXEMBOURG, LUXEMBOURG, DEC. 7-8, 1976, 427P. PERGAMON PRESS: NEW YORK, N.Y., USA; OXFORD, ENGLAND. ILLUS. PAPER. ISBN 0-08-021998-5. O (O), 1979. P151-160. Coden: 07421

Language: ENGLISH

Descriptors: REVIEW HUMAN RODENT EXPERIMENTAL ANIMAL SEX STEROIDS DRUGS VINYL CHLORIDE NECROSIS ANGIO SARCOMA FAT INFILTRATION CARCINOGENESIS MICROSCOPY BIOPSY ENVIRONMENTAL AGENTS MICROsome

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); ELECTRON MICROSCOPY(-01058); CYTOLOGY/CYTOCHEM-ANIMAL(02506); CYTOLOGY/CYTOCHEM-HUMAN(02508); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-LIPIDS(-10066); BIOCHEM STUD-STEROLS,STERIODS(10067); ANATOMY/HISTOL--MICRO,ULTRAMICRSC(+11108); PATHOLOGY-DIAGNOSTIC(12504); PATHOLOGY-NECROSIS(12510); METABOLISM-GENL STUD,METAB PATHW(13002); METABOLISM-LIPIDS(13006); METABOLISM-STEROLS,STERIODS(13008); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PATHOL-OGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); ENDOCRINE SYST-GONADS,PLACENTA(17006); BONE,JNTS,FASC,CONN/AD-IP-PATHOL(18006); PHARMACOL-DRUG METAB,METAB STIMU(22003); PHARMACOL-ENDOCRINE SYST(22016); PHARMACOL-REPRODUCT SYST,IMP-LANT(22028); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-PHARMACOLOGICAL(+22504); TOXICOL-ENVIRONMENTAL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-PATH,CLINIC(24004); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR,WATR,SL POLLN(3-7015)

Biosystematic Codes: ANIMALIA-UNSPECIFIED(33000); HOMINIDAE-(86215); CAVIIDAE(86300)

THE MIGRATION OF PLASTICIZERS FROM POLY VINYL CHLORIDE HEMO DIALYSIS TUBES

GERSTOFT J; CHRISTIANSEN E; NIELSEN I L; NIELSEN B

DEP. NEPHROL., COPENH. CITY HOSP., HVIDOVRE, DEN.

PROCEEDINGS OF THE EUROPEAN DIALYSIS AND TRANSPLANT ASSOCIATION, AMSTERDAM, NETHERLANDS, JUNE 17-20, 1979. KIDNEY INT 16 (2), 1979, 222. Coden: KDYIA

Language: ENGLISH

Descriptors: ABSTRACT HUMAN PLASMA DI-2 ETHYLHEXYL PHTHALATE STERILIZATION GAS CHROMATOGRAPHY IRRADIATION

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL-(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); PATHOLOGY-THERAPY(12512); METABOLISM-GENL STUD,METAB PATHW(13-002); CARDIOVASC SYST-GENL STUDS,METHS(14501); BLOOD/BODY FLDS-GENL STUDS,METHS(15001); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(+15002); TOXICOL-GENL/EXP STUDS,METHS(+22501); DISINFECT-ION,DISINFECTANTS,STERL(39500)

Biosystematic Codes: HOMINIDAE(86215)

18061843

NECROTIZING CUTANEOUS VASCULITIS CAUSED BY POLY VINYL CHLORIDE PLASTIC TUBING

BOMMER J; RITZ E

DEP. INTERN. MED., HEIDELBERG, W. GER.

PROCEEDINGS OF THE EUROPEAN DIALYSIS AND TRANSPLANT ASSOCIATION, AMSTERDAM, NETHERLANDS, JUNE 17-20, 1979. KIDNEY INT 16 (2), 1979, 218. Coden: KDYIA

Language: ENGLISH

Descriptors: ABSTRACT HUMAN ALLERGY ATOPY HISTOLOGY IMMUNO HISTOLOGY DIALYSIS

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); CYTOLOGY/CYTOCHEM-HUMAN(02508); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); MOVEMENT(12100); PATHOLOGY-INFLAMMATN,INFLAM DIS(12508); PATHOLOGY-NECROSIS(12510); PATHOLOGY-THERAPY(12512); METABOLI-SM-GENL STUD,METAB PATHW(13002); CARDIOVASC SYST-GENL STUDS,METHS(14501); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-GENL STUDS,METHS(15001); INTEGUMENT SYST-GENL STUDS,METHS(18501); INTEGUMENT SYST-PATHOLOGY(+18506); TOXICOL-GENL/EXP STUDS,METHS(+22501); IMMUNOL/IMMUNOCHEM-GEN METH(34502); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); ALLERGY-(+35500)

Biosystematic Codes: HOMINIDAE(86215)

18061758

EPIDEMIOLOGIC CONSIDERATIONS IN THE DESIGN OF TOXICOLOGIC STUDIES AN APPROACH TO RISK ASSESSMENT IN HUMANS

WOODS J S

BATTELLE HUM. AFFAIRS RES. CENT., 4000 N.E. 41ST ST., SEATTLE, WASH. 98105, USA.

SYMPOSIUM ON THE ROLE OF EPIDEMIOLOGY IN TOXICOLOGY AT THE ANNUAL MEETING OF THE AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS AND THE SOCIETY OF TOXICOLOGY, HOUSTON, TEX., USA, AUG. 15, 1978. FED PROC 38 (5), 1979. 1891-1896. Coden: FEPA

Language: ENGLISH

Descriptors: ANIMAL MODEL VINYL CHLORIDE CARCINOGENESIS BIO STATISTICAL PROCEDURE DOSE RESPONSE RELATIONSHIP ENVIRONMENTAL AGENTS

Concept Codes: GENL BIOL-SYMPOSIA, PROCDNGS, REVW(00520); MATHEMATIC BIOL/STATISTIC METH(04500); BIOCHEM STUD-GENERAL(1-0060); BIOPHYS-BIOCYBERNETICS(10515); PATHOLOGY-COMPARATIVE(1-2503); METABOLISM-GENL STUD, METAB PATHW(13002); PHARMACOL-DRUG METAB, METAB STIMU(22003); TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); PUB HEALTH-LAB METHS(+37006); PUB HEALTH-ADMINISTR, STATISTICS(37010); ENVIRON HEALTH-AIR, WATR, SL POLLN(37015); EPIDEMIOL-MISCELL STUDIES(+37056)

Biosystematic Codes: ANIMALIA-UNSPECIFIED(33000); HOMINIDAE-(86215)

18057879

CANCER AND INDUSTRIAL CHEMICAL PRODUCTION

DAVIS D L; MAGEE B H

TOXIC SUBST. PROGRAM, ENVIRON. LAW INST., WASHINGTON, D.C. 20036, USA.

SCIENCE (WASH D C) 206 (4425), 1979 (RECD. 1980). 1356, 1358. Coden: SCIEA

Language: ENGLISH

Descriptors: NOTE HUMAN BENZENE PER CHLOR ETHYLENE VINYL CHLORIDE ACRYLONITRILE ASBESTOS CHROMITE CHLOROFORM CARBON TETRA CHLORIDE TRI CHLOROETHYLENE CARCINOGEN LUNG CANCER SMOKING

Concept Codes: BEHAVIOR BIOL-HUMAN BEHAVIOR(07004); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); RESPIRATORY SYST-PATHOL-OGY(+16006); PSYCHIATRY-ADDICTION(INC SMOKNG)(21004); TOXICOL-GENL/EXP STUDS, METHS(22501); TOXICOL-ENVIRONMNTL, INDUSTR(+22-506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); AGRONOMY-TOBACCO CROPS(52512)

Biosystematic Codes: PLANTAE-UNSPECIFIED(11000); HOMINIDAE-(86215)

18057819

EFFECTS OF INDUCERS ON THE IN-VIVO COVALENT BINDING OF A VINYL CHLORIDE METABOLITE TO LIVER FRACTIONS

PESSEYRE D; WANDSCHER J C; DESCAITRE V; GOLDER A; BENHAMOU

UNITE RECH. PHYSIOPATHOL. HEPATIQUE, INST. NATL. SANTE RECH. MED. UNITE 24, HOP. BEAUJON, 92118 CLICHY, FR.

BIOCHEM PHARMACOL 28 (24), 1979 (RECD. 1980). 3667-3668. Coden: BCPCA

Language: ENGLISH

Descriptors: NOTE RAT BLOOD KIDNEY SPLEEN MUSCLE SKF-525-A PROADIFEN HYDRO CHLORIDE PHENO BARBITAL DOT METABOLIC-DRUG EPOXIDE HYDRASE CARCINOGENESIS INTRA PERITONEAL DOSE MICROsome

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD, PURNS, PYRM(10062); BIOCHEM STUD-PROTEIN-S, PEPTIDES, AMINO ACD(10064); BIOPHYS-MOLECUL PROP, MACROMOLEC(+10506); BIOPHYS-MEMBRANE PHENOMENA(10508); ENZYMES-PHYSIOLOG-ICAL STUDIES(10808); CHORDATE BODY REGNS-ABOOME(11314); PHYSIOLOGY-COMPARATIVE(12003); METABOLISM-GENL STUD, METAB PATHW(13002); METABOLISM-NUCL ACD, PURINS, PYRM(13014); DIGESTIVE SYST-PATHOLOGY(+14006); BLOOD/BODY FLOS-GENL STUDS, METHS(15001); BLOOD/BODY FLOS-BLOOD, LYMPH STUD(+15002); BLOOD/BODY FLOS-LYMPHAT TISS, RES(+15008); URIN SYST/EXT SECR-GEN STUD, METH(15501); URIN SYST/EXT SECR-PATHOLOGY(+1550-6); MUSCLE SYST-GENL STUDS, METHS(17501); MUSCLE SYST-PATHOLOGY(+17506); PHARMACOL-GENERAL STUDIES(22002); PHARMACOL-DRUG METAB, METAB STIMU(+22003); ROUTES OF IMMUNIZ, INFECT, THERAP(22100); TOXICOL-GENL/EXP STUDS, METHS(+2-2501); TOXICOL-ENVIRONMNTL, INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR, WATR, SL POLLN(3-7015); PEST CONTRL GENL/PESTICS/HERBICS(54600); ECONOM ENTOMOL-CHEM PHYS CONTRL(60016)

Biosystematic Codes: MURIDAE(86375); ABSTRACTS OF ENTOMOLOGY(96000)

18050544

DENITRIFICATION AND REMOVAL OF HEAVY METALS FROM WASTE WATER BY IMMOBILIZED MICROORGANISMS

HOLLO J; TOTH J; TENDERDY R P; JOHNSON J E
VENKATSUBRAMANIAN, K. (ED.). ACS (AMERICAN CHEMICAL SOCIETY) SYMPOSIUM SERIES, VOL. 106. IMMOBILIZED MICROBIAL CELLS; SYMPOSIUM AT THE 176TH MEETING, MIAMI BEACH, FLA., USA, SEPT. 14, 1978. X+257P. AMERICAN CHEMICAL SOCIETY: WASHINGTON, D.C., USA. ILLUS. ISBN 0-8412-0508-6. O (O). 1979. P73-86. Coden: ACSMC

Language: ENGLISH

Descriptors: REVIEW PSEUDOMONAS-AERUGINOSA POLY VINYL CHLORIDE FILM MELT BLOWN POLY PROPYLENE WEB

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(O0520); ECOLOGY-LIMNOLOGY(+07514); ECOLOGY-WATR RESRCH,FISHERY BIOL(O7517); BIOCHEM METH-GENERAL(+10050); BIOCHEM METH-MINERALS(+10059); BIOCHEM STUD-GENERAL(10060); MINERALS(-10069); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(+10511); METABOLISM-GENL STUD,METAB PATHW(+13002); MINERALS(+13010); TOXICOL-ENVIRONMNTL,INDUSTR(22506); BACTERIA-PHYSIOLOGY,BIOCHEMISTRY(+31000); MICROBIOLOG APPARAT,METHS,-MEDIA(32000); ENVIRON HEALTH-SEWG DISP,SANITAR(+37014); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015); FOOD/INDUS MICRO-GENL,MISC STUDS(+39008)

Biosystematic Codes: PSEUDOMONADACEAE(O4716)

18047256

ENVIRONMENTAL LIVER TUMORS

POPPER H; THOMAS L B
KURUME MED J 26 (3). 1979 (RECD. 1980). 189-204. Coden: KRMJA

Language: ENGLISH

Descriptors: REVIEW HUMAN RODENT CARCINOGENESIS STEROIDS VINYL CHLORIDE ANGIO SARCOMA CARCINOMA HEPATITIS B INFLAMMATION HYPERTENSION INDUSTRIAL TOXINS

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-STEROLS,STEROIDS(10067); PATHOLOGY-INFLAMMATN,INFLAM DIS-(12508); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); VIROLOGY-ANIMAL HOST VIRUSES(33506); MED/CLIN MICROBIOL-VIROLOGY(36006); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: ANIMAL VIRUSES-UNSPECIFIED(O2200); HOMINIDAE(86215); RODENTIA-UNSPECIFIED(86265)

18047213

INTERNATIONAL AGENCY FOR RESEARCH ON CANCER SCIENCE PUBLICATIONS NO. 22. ENVIRONMENTAL CARCINOGENS SELECTED METHODS OF ANALYSIS VOL. 2. METHODS FOR THE MEASUREMENTS OF VINYL CHLORIDE IN POLY VINYL CHLORIDE AIR WATER AND FOODSTUFFS

EGAN H

EGAN, H. (ED.). IARC (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER) SCIENCE PUBLICATIONS NO. 22. ENVIRONMENTAL CARCINOGENS SELECTED METHODS OF ANALYSIS VOL. 2. METHODS FOR THE MEASUREMENTS OF VINYL CHLORIDE IN POLY VINYL CHLORIDE AIR WATER AND FOODSTUFFS

CARCINOGENS: SELECTED METHODS OF ANALYSIS. VOL. 2. METHODS FOR THE MEASUREMENTS OF VINYL CHLORIDE IN POLY (VINYL CHLORIDE). AIR, WATER AND FOODSTUFFS. XIII+142P. INTERNATIONAL AGENCY FOR RESEARCH ON CANCER: LYON, FRANCE. ILLUS. ISBN 92-832-1122-7. O (O). 1979. XIII+142P. Coden: IARCC

Language: ENGLISH

Descriptors: BOOK HUMAN ANIMAL WORKER EXPOSURE

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(O5500); ECOLOGY-ANIMAL(O7508); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); FOOD TECH-GENL STUDS,METHS(13502); FOOD TECH-EVALNS PHYS,CIEM PROPS(13530); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); TOXIC-OL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: ANIMALIA-UNSPECIFIED(33000); HOMINIDAE-(86215)

18045465

OVERVIEW OF POTENTIAL MUTAGENIC PROBLEMS POSED BY SOME PESTICIDES AND THEIR TRACE IMPURITIES

FISHBEIN L
WORKSHOP ON HIGHER PLANT SYSTEMS AS MONITORS OF ENVIRONMENTAL MUTAGENS, MARINELAND, FLA., USA, JAN. 15-19, 1978. ENVIRON HEALTH PERSPECT 27 (O). 1978 (RECD. 1979). 125-132. Coden: EVHPA

Language: ENGLISH

Descriptors: REVIEW HUMAN ORGANISM DDT HEXA CHLORO BENZENE 2,4,5-T PENTA CHLORO PHENOL CARBAMATE VINYLIDENE CHLORIDE TRIAZINE VINYL CHLORIDE DI CHLORO PROPENE TRICHLORPHON HERBICIDE CARCINOGEN

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(O2508); GENETICS/CYT-OGNET-GENL STUDIES(+03502); GENETICS/CYTOGENET-HUMAN(+03508); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM-(10062); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); METABOLISM-NUCL ACD,PURINS,PYRIM(+13014); TOXICOL-GENL/EXP STUDS,METHS(+2501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015); PEST CONTRL GENL/PESTICS/HERBICS(+54600); ECONOM ENTOMOL-CHEM PHYS CONTRL(+60016)

Biosystematic Codes: ORGANISMS-UNSPECIFIED(O0500); HOMINIDAE(86215); ABSTRACTS OF ENTOMOLOGY(96000)

18045384

LACK OF MUTAGENIC EFFECT OF VINYL CHLORIDE MONOMER IN THE MAMMALIAN SPOT TEST

PETER S; UNGVARY G

MUTAT RES 77 (2). 1980. 193-196. Coden: MUREA

Language: ENGLISH

Descriptors: NOTE MOUSE C-57BL-6JHAN STRAIN HUMAN CYCLO PHOSPHAMIDE COAT COLOR OCCUPATIONAL EXPOSURE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(*02506); GENETICS/CYTOGENET-ANIMAL(*03506); GENETICS/CYTOGENET-HUMAN(*03508); MATHEMATIC BIOL/STATISTIC METH(04500); BIOCHEM STUD-GENERAL(1-0060); BIOCHEM STUD-NUCL ACD,PURINS,PYRM(10062); METABOLISM-NUCL ACD,PURINS,PYRM(*13014); REPRODUCT SYST-GENL STUDS,METHS(-16501); INTEGUMENT SYST-GENL STUDS,METHS(18501); INTEGUMENT SYST-PHYSIOL,BIOCHEM(18504); INTEGUMENT SYST-PATHOLOGY(*18506); PHARMACOL-GENERAL STUDIES(22002); ROUTES OF IMMUNIZ,INFECT,THERAP(22100);

TOXICOL-ENVIRONMNTL,INDUSTRI(*22506); NEOPLSMS/NEOPL AGNTS-THERAP,AGNT(24008); ENVIRON HEALTH-OCCUPATNL HEALTH(*37013); CHEMOTHERAPY-GEN STUD,METH,METAB(38502)

Biosystematic Codes: MAMMALIA-UNSPECIFIED AND EXTINCT(85700); HOMINIDAE(86215); MURIDAE(86375)

18045381

MUTAGENICITY OF VINYL CHLORIDE IN THE AMES TEST POSSIBLE ARTIFACTS RELATED TO EXPERIMENTAL CONDITIONS

DE MEESTER C; DUVERGER-VAN BOGAERT M; LAMBOTTE-VANDEPAER M; ROBERFROID M; PONCELET F; MERCIER M

MUTAT RES 77 (2). 1980. 175-180. Coden: MUREA

Language: ENGLISH

Descriptors: NOTE SALMONELLA-TYPHIMURIUM STRAIN TA-1530 RAT LIVER MICROSOME HUMAN

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(*02506); GENETICS/CYTOGENET-ANIMAL(*03506); GENETICS/CYTOGENET-HUMAN(*03508); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURINS,PYRM(10062); METABOLISM-NUCL ACD,PURINS,PYRM(*13014); TOXICOL-GENL/EXP STUDS,METHS(*22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(-24007); BACTERIAL AND VIRAL GENETICS(31500); MICROBIOLOG APPARAT,METHS,MEDIA(32000)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); HOMINIDAE(86215); MURIDAE(86375)

18045096

EVALUATION OF A NOVEL MICRO POROUS POLY VINYL CHLORIDE SILICA SUPPORT FOR IMMOBILIZED ENZYMES ITS USE IN A FLOW-THROUGH REACTOR SYSTEM FOR PRODUCTION OF FRUCTOSE

GOLDBERG B S; HAUSSER A G; GILMAN K R; CHEN R Y

VENKATSUBRAMANIAN, K. (ED.). ACS (AMERICAN CHEMICAL SOCIETY) SYMPOSIUM SERIES, VOL. 106. IMMOBILIZED MICROBIAL CELLS: SYMPOSIUM AT THE 176TH MEETING, MIAMI BEACH, FLA., USA, SEPT. 14, 1978. X+257P. AMERICAN CHEMICAL SOCIETY: WASHINGTON, D.C., USA. ILLUS. ISBN 0-8412-0508-6. O (0). 1979. P173-186. Coden: ACSMC

Language: ENGLISH

Descriptors: BACILLUS-COAGULANS GLUCOSE ISOMERASE

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); BIOCHEM METH-CARBOHYDRATES(*10058); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); MINERALS(10069); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(*10511); ENZYMES--METHODS(*10804); METABOLISM-CARBOHYDRATES(13004); BACTERIA-PHYSIOLOGY,BIOCHEMISTRY(*31000); MICROBIOLOG APPARAT,METHS,MEDIA(32000); FOOD/INDUS MICRO-SYN,BIOASS,FERM(*39007)

Biosystematic Codes: BACILLACEAE(05610)

18042394

INFLUENCE OF SERUM PROTEINS ON THROMBOSIS AND LEUKOCYTE ADHERENCE ON POLYMER SURFACES

BARBER T A; LAMBRECHT L K; MOSHER D L; COOPER S L

SCANNING ELECTRON MICROSCOPY MEETING, WASHINGTON, D.C., USA, APR. 16-20, 1979. SCANNING ELECTRON MICROSC 1979 (3). 1979. 881-890. Coden: SEMYB

Language: ENGLISH

Descriptors: DOG PLATELET MONOCYTE POLYMORPHONUCLEAR NEUTROPHIL MIGRATION CHEMA TAXIS AGGREGATION FIBRIN GAMMA GLOBULIN ALBUMIN IMMUNO GLOBULIN G VON WILLEBRAND FACTOR ALPHA-2 MACRO GLOBULIN FIBRONECTIN ANTI FIBRONECTIN SILICONE RUBBER POLY VINYL CHLORIDE TRANSMISSION ELECTRON MICROSCOPY SCANNING ELECTRON MICROSCOPY

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); MICROSCOPY-CYTOLOG,CYTOCHEM TECH(01054); ELECTRON MICROSCOPY(-*01058); CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(*10064); BIOCHEM STUD-CARBOHYDR.(10068); ANATOMY/HISTOL-MICRO,ULTRAMIC-RSC(*11108); MOVEMENT(12100); CARDIOVASC SYST-BLD VESS PATHOL(*14508); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(*15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(*15004); BLOOD/BODY FLDS-BLD,LYM,RES PATH(*15006); BLOOD/BODY FLDS-LYMPHAT TISS,RES(*15008); IMMUNOL/IMMUNOCHEM-GEN METH(34502); IMMUNOL-/IMMUNOCHEM-IMMUNOPATHOL(34508)

Biosystematic Codes: CANIDAE(85765)

18041743

NECROTIZING DERMATITIS RESULTING FROM HEMO DIALYSIS WITH
POLY VINYL CHLORIDE TUBING

BOMMER J; RITZ E; ANDRASSY K

ANN INTERN MED 91 (6). 1979 (RECD. 1980). 869-870.

Codon: AIMEA

Language: ENGLISH

Descriptors: NOTE HUMAN SERUM HEPATITIS B SURFACE ANTIGEN
EOSINOPHILIA ALLERGY HISTOLOGY PARATHYROID HORMONE

Concept Codes: MICROSCOPY-HISTOL,HISTOCHEM TECH(01056);
CYTOLOGY/CYTOCHEM-HUMAN(02508); BIOCHEM STUD-GENERAL(10060);
BIOPHYS-GENERAL BIOPHYS TECH(10504); ANATOMY/HISTOL-MICRO,ULT-
RAMICRSC(11108); MOVEMENT(12100); PATHOLOGY-INFLAMMATN,INFLAM
DIS(12508); PATHOLOGY-NECROSIS(12510); METABOLISM-GENL
STUD,METAB PATHW(13002); DIGESTIVE SYST-PATHOLOGY(14006);
BLOOD/BODY FLDS-GENL STUDS,METHS(15001); BLOOD/BODY
FLDS-BLOOD,LYMPH STUD(15002); BLOOD/BODY FLDS-BLOOD CELL
STUDS(+15004); BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006);
ENDOCRINE SYST-PARATHYROID(17010); INTEGUMENT SYST-GENL
STUDS,METHS(18501); INTEGUMENT SYST-PATHOLOGY(+18506);
TOXICOL-GENL/EXP STUDS,METHS(+22501); IMMUNOL/IMMUNOCHEM-IMMU-
NOPATHOL(+34508); ALLERGY(+35500); MED/CLIN MICROBIOL-VIROLOG-
Y(36006)

Biosystematic Codes: ANIMAL VIRUSES-UNSPECIFIED(02200);
HOMINIDAE(86215)

18041238

DETERMINATION OF THE CONTENT OF DI-2 ETHYLHEXYL PHTHALATE IN
BLOOD PREPARATIONS STORED IN POLY VINYL CHLORIDE BAGS

PIK YU; BRAIER YU; KAL'MANNE ZH; IOZHEFNE P

INST. EXP. MED., ACAD. SCI. HUNG. PEOPLE'S REPUB., BUDAPEST,
HUNG.

PROBL GEMATOL PERELIV KROVI 24 (2). 1979. 49-51. Codon:
PGPKA

Language: RUSSIAN

Descriptors: HUMAN BLOOD THROMBOCYTE MEDICOR M-1 BAG BIOPACK
P BAG ETHER ACETONE N HEPTANE ACID CITRATE DEXTROSE SOLUTION
LIPID SOLUBILITY SATURATION CURVE

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(02508); MATHEMATIC
BIOL/STATISTIC METH(04500); CLIN BIOCHEM-GENL STUDIES(+10006);
BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-LIPIDS(10066);
BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-MOLECUL PROP,MACROMOL-
EC(10506); BLOOD/BODY FLDS-GENL STUDS,METHS(+15001);
BLOOD/BODY FLDS-BLOOD,LYMPH STUD(15002); BLOOD/BODY FLDS-BLOOD
CELL STUDS(+15004); TOXICOL-GENL/EXP STUDS,METHS(+22501)

Biosystematic Codes: HOMINIDAE(86215)

18040373

ENVIRONMENTAL POLLUTANTS AND THE EPIDEMIOLOGY OF CANCER

HEATH C W JR

CHRONIC DIS. DIV., BUR. EPIDEMIOLOG., CENT. DIS. CONTROL,
ATLANTA, GA. 30333, USA.

WORKSHOP ON HIGHER PLANT SYSTEMS AS MONITORS OF

1978. ENVIRON HEALTH PERSPECT 27 (O). 1978 (RECD. 1979).
7-10. Codon: EVHPA

Language: ENGLISH

Descriptors: HUMAN VINYL CHLORIDE KEPONE INSECTICIDE POLY
BROMINATED BI PHENYL

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
BIOCHEM STUD-GENERAL(10060); TOXICOL-ENVIRONMNTL,INDUSTR(+225-
06); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON
HEALTH-AIR,WATR,SL POLLN(37015); EPIDEMIOLOG-ORGANIC DIS,NEOPLA-
SMS(+37054); PEST CONTRL GENL/PESTICS/HERBICS(54600); ECONOM
ENTOMOL-CHEM PHYS CONTRL(60016)

Biosystematic Codes: HOMINIDAE(86215); ABSTRACTS OF
ENTOMOLOGY(96000)

18036785

METABOLIC ACTIVATION OF HALOGENATED ETHYLENES

BOLT H M

INST. TOZIKOL., UNIV., WILHELMSTR. 56. 7400 TUEBINGEN. W.
GER.

REMMER, H. ET AL. (ED.). FALK SYMPOSIUM, NO. 25. PRIMARY
LIVER TUMORS. PROCEEDINGS. TITISEE, WEST GERMANY. OCT. 3-5.
1977. XVI+511P. UNIVERSITY PARK PRESS. BALTIMORE, MD., USA.
ILLUS. ISBN 0-8391-1226-2. O (O). 1978 (RECD. 1979).
P285-294. Codon: FASYD

Language: ENGLISH

Descriptors: REVIEW RAT LIVER MICROSOMES TRI CHLORO ETHYLENE
VINYLIDENE CHLORIDE VINYL CHLORIDE CARCINOGEN MUTAGEN EPOXIDE

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
GENETICS/CYTOGENET-ANIMAL(+03506); BIOCHEM STUD-GENERAL(10060)
; MINERALS(10069); METABOLISM-GENL STUD,METAB PATHW(+13002);
MINERALS(+13010); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004);
TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-CA-
RCINOGENS(+24007)

Biosystematic Codes: MURIDAE(86375)

18036777

EFFECT OF LONG-TERM VINYL CHLORIDE EXPOSURE IN MOUSE LIVER STRUCTURE

SCHAFFNER F

MT. SINAI SCH. MED., 1 E. 100TH ST., NEW YORK, N.Y. 10029, USA.

REMMER, H. ET AL. (ED.). FALK SYMPOSIUM, NO. 25. PRIMARY LIVER TUMORS; PROCEEDINGS, TITISEE, WEST GERMANY, OCT. 3-5, 1977. XVI+511P. UNIVERSITY PARK PRESS: BALTIMORE, MD., USA. ILLUS. ISBN 0-8391-1226-2. O (O). 1978 (RECD. 1979). P189-200. Coden: FASYD

Language: ENGLISH

Descriptors: LIVER ANGIO SARCOMA SCREENING SINUSOIDAL CELL PROLIFERATION RETICULUM FIBERS COLLAGEN MACROPHAGES LYMPHOCYTES HEPATOCYTES ULTRASTRUCTURE HYPERTROPHY CHLORO ETHYLENE OXIDE CARCINOGEN

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); PATHOLOGY-DIAGNOSTIC(12504); DIGESTIVE SYST-PATHOLOGY(*14006); BLOOD/BODY FLDS-BLOOD CELL STUDS(15004); BLOOD/BODY FLDS-LYMPHAT TISS,RES(15008); BONE,JNTS,FASC,CONN/ADIP-PHY,BCH(18004); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-DIAGNS METH(*24001); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); ENVIRON HEALTH-OCCUPATNL HEALTH(*37013)

Biosystematic Codes: MURIDAE(86375)

18036751

ENVIRONMENTAL CHEMICALS CAUSING CANCER AND GENETIC BIRTH DEFECTS MUTAGENICITY TESTING FOR REACTIVE METABOLITES

AMES B N

DEP. BIOCHEM., UNIV. CALIF., BERKELEY, CALIF. 94720, USA.

COHEN, Y. (ED.). PROCEEDINGS OF THE INTERNATIONAL CONGRESS OF PHARMACOLOGY, NO. 7. ADVANCES IN PHARMACOLOGY AND THERAPEUTICS, VOL. 9. TOXICOLOGY, PARIS, FRANCE, 1978. XI+304P. PERGAMON PRESS: NEW YORK, N.Y., USA; OXFORD, ENGLAND. ILLUS. ISBN 0-08-023199-3. O (O). 1978 (RECD. 1979). P29-40. Coden: PCPMB

Language: ENGLISH

Descriptors: SALMONELLA HUMAN RAT SMOKING VINYL CHLORIDE NITRITE ETHYL DI BROMIDE CARCINOGEN DNA DAMAGE

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); GENETICS/CYTOGENET-ANIMAL(*03506); GENETICS/CYTOGENET-HUMAN(03508); BEHAVIOR BIOL-HUMAN BEHAVIOR(07004); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062); METABOLISM-NUCL ACD,PURINS,PYRIM(*1301-4); PSYCHIATRY-ADDICTION(1NC SMOKNG)(21004); TOXICOL-GENL/EXP STUDS,METHS(*22501); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); DEVELOPMNTL BIOL-PATHOLOGICAL(*25503); DEVELOPMNTL BIOL-DESCRIP IERATOL(*25552); BACTERIAL AND VIRAL GENETICS(31500); MICROBIOLOG APPARAT,METHS,MEDIA(32000); PLANT PHYSIOL-CHEM CONSTITUENTS(5-1522)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); PLANTAE-UNSPECIFIED(11000); HOMINIDAE(86215); MURIDAE(86375)

18036687

GENETIC DAMAGE CARCINOGENESIS AND ENVIRONMENTAL MUTAGENS

COULTER J R

DEP. TISSUE PATHOL., INST. MED. VET. SCI., FROME RD., ADELAIDE, S. AUST. 5000, AUST.

AUST J PHARM SCI 8 (2). 1979. 33-39. Coden: AJPSB

Language: ENGLISH

Descriptors: HUMAN ANIMAL SMOKING VINYL CHLORIDE EPIDEMIOLOGY

Concept Codes: GENETICS/CYTOGENET-HUMAN(*03508); BEHAVIOR BIOL-HUMAN BEHAVIOR(07004); BIOCHEM STUD-GENERAL(10060); PSYCHIATRY-ADDICTION(1NC SMOKNG)(21004); TOXICOL-GENL/EXP STUDS,METHS(*22501); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); PUB HEALTH-ADMINISTR.S-TATISTICS(37010); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); EPIDEMIOL-ORGANIC DIS,NEOPLASMS(*37054); PLANT PHYSIOL-CHEM CONSTITUENTS(51522)

Biosystematic Codes: PLANTAE-UNSPECIFIED(11000); VERTEBRATA-UNSPECIFIED(85150); HOMINIDAE(86215)

18036680

CELL TRANSFORMATION ASSAYS

STYLES J A

CENT. TOXICOL. LAB., IMP. CHEM. IND. LTD., ALDERLEY PARK, MACCLESFIELD, CHESHIRE, ENGL., UK.

PAGET, G. E. (ED.). TOPICS IN TOXICOLOGY; MUTAGENESIS IN SUB-MAMMALIAN SYSTEMS: STATUS AND SIGNIFICANCE. XIV+231P. UNIVERSITY PARK PRESS: BALTIMORE, MD., USA. ILLUS. ISBN 0-8391-1367-6. O (O). 1979. P147-164. Coden: 07966

Language: ENGLISH

Descriptors: SALMONELLA BABY HAMSTER KIDNEY CELL AMES TEST HUMAN 4 AMINO BI PHENYL TOBACCO SMOKE CONDENSATE P NITROSO DI METHYL ANILINE TRI CHLORO ETHYLENE VINYL CHLORIDE ETHYLENE DI CHLORIDE ANILINE NORHARMAN CHLOROFORM O TOLUIDINE 2 AMINO TRIAZOLE GUANAZOLE SACCHARIN CYCLAMATE HEXA METHYL PHOSPHORAMIDE BUTTER YELLOW

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); CYTOLOGY/CYTOCHEM-HUMAN(+02508); GENETICS/CYTOGENET-ANIMAL(+03506); GENETICS/CYTOGENET-HUMAN(+03508); BEHAVIOR BIOL-HUMAN BEHAVIOR(0-7004); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID,PURNS,PYRM(10062); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); METABOLISM-NUCL ACID,PURINS,PYRIM(+13014); FOOD TECH-PREP,PROCESSING,STORAGE(13532); URIN SYST/EXT SECR-GEN STUD,METH(1550-1); PSYCHIATRY-ADDICTION(INC SMOKNG)(21004); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(22502); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); PEDIATRICS(25000); BACTERIAL AND VIRAL GENETICS(31500); MICROBIOLOG APPARAT,METHS,MEDIA(32000); TISS CULTURE-APPARAT,METHS,MEDIA(32500); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); AGRONOMY-TOBACCO CROPS(5251-2)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); SOLANACEAE(-26775); HOMINIDAE(86215); CRICETIDAE(86310)

18030686

PULMONARY MANIFESTATIONS OF VINYL CHLORIDE AND POLY VINYL CHLORIDE EXPOSURES

DEMETER S L; CORDASCO E M

CLEVE. CLIN. FOUND., CLEVELAND, OHIO, USA.

75TH ANNUAL MEETING OF THE AMERICAN LUNG ASSOCIATION HELD IN CONJUNCTION WITH THE 74TH ANNUAL MEETING OF THE AMERICAN THORACIC SOCIETY AND THE 67TH ANNUAL MEETING OF THE CONGRESS OF LUNG ASSOCIATION STAFF, LAS VEGAS, NEV., USA, MAY 13-16, 1979. AM REV RESPIR DIS 119 (4 PART 2). 1979. 210. Coden: ARDSB

Language: ENGLISH

Descriptors: ABSTRACT HUMAN OCCUPATIONAL LUNG DISEASE CHEST X-RAY

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); PHOTOGRAPHY-METHS,MATLS,APPARAT(01012); SOCIAL BIOL/HUMAN ECOLOGY(05500); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); ANATOMY/HISTOL-RADIOLOGIC(11106); CHORDATE BODY REGNS-THORAX(11312); PATHOLOGY-DIAGNOSTIC(12504); RESPIRATORY SYST-GENL STUD,METHS(16001); RESPIRATORY

TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

18029832

2 BUTANONE AND TETRA HYDRO FURAN CONTAMINATION IN THE WATER SUPPLY

WANG T C; BRICKER J L

HARBOR BRANCH FOUND. INC., RRI, BOX 196, FT. PIERCE, FLA. 33450, USA.

BULL ENVIRON CONTAM TOXICOL 23 (4-5). 1979. 620-623. Coden: BECTA

Language: ENGLISH

Descriptors: LABORATORY POLY VINYL CHLORIDE PIPE LEACHING KINETICS

Concept Codes: GENERAL LABORATORY APPARATUS(+01006); BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); TOXICOL-ENVIRONMNTL,INDUSTR(22506); ENVIRON HEALTH-SEWG DISP,SANITAR(+37014); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

18022531

SCANNING ELECTRON MICROSCOPIC ANALYSIS ON ANTI THROMBOGENICITY OF ARTIFICIAL HEART BLOOD PUMP POLY VINYL CHLORIDE PASTE AND POLY VINYL CHLORIDE PASTE AND POLY URETHANE

IMACHI K; FUJIMASA I; SATO N; IWAI N; MIYAKE H; TAKIDO N; NARAJIMA M; KOUNO A; ONO T; ATSUMI K
INST. MED. ELECTRON., FAC. MED., UNIV. TOKYO, HONGO, BUNKYO, TOKYO, JPN.

6TH ANNUAL MEETING OF THE EUROPEAN SOCIETY FOR ARTIFICIAL ORGANS, GENEVA, SWITZERLAND, SEPT. 29-OCT. 1, 1979. ARTIF ORGANS (CLEVE) 3 (3). 1979. 301. Coden: ARORD

Language: ENGLISH

Descriptors: ABSTRACT GOAT ANTICOAGULANT CARDIOVASCULAR-DRUG HYPER COAGULABILITY BLOOD FLOW

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520); ELECTRON MICROSCOPY(01058); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(+10511); ANATOMY/HISTOL-EXPERIMENTAL(11104); ANATOMY/HISTOL-REGEN,TRANSPLANT(+11107); MOVEMENT(12100); PATHOLOGY-DIAGNOSTIC(12504); PATHOLOGY-THERAPY(12512); CARDIOVASC SYST-GENL STUDS,METHS(+14501); CARDIOVASC SYST-PHYSIOL,BIOCHEM(14504); CARDIOVASC SYST-HEART PATHOLOGY(+14506); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(+15002); PHARMACOL-BLOOD,HEMATO AGENTS(+22008); PHARMACOL-CARDIOVASC SYST(+22010)

Biosystematic Codes: BOVIDAE(85715)

18021328

SIMPLE DETERMINATION OF THE FOLATE BINDING CAPACITY OF PROTEINS BY CHROMATOGRAPHY ON NITRO CELLULOSE AND POLY VINYL CHLORIDE MEMBRANES

PRISTOUPILOVA K; PRISTOUPIL T I; PROKES J; VULTERIN K
INST. HAEMATOL. BLOOD TRANSFUS., PRAGUE, CZECH.

J CHROMATOGR 170 (1). 1979. 221-226. Coden: JOCRA

Language: ENGLISH

Descriptors: NOTE COW MILK TRITIUM LABELED PTEROYL
GLUTAMIC-ACID

Concept Codes: RADIATION BIOL-RADTN,ISOTOP TECH(06504);
BIOCHEM METH-GENERAL(10050); BIOCHEM METH-PROTNS,PEPTDS,AM
AC(+10054); BIOCHEM METH-CARBOHYDRATES(10058); BIOCHEM
STUD-GENERAL(10060); BIOCHEM STUD-VITAMINS(+10063); BIOCHEM
STUD-PROTEINS,PEPTIDES,AMINO ACD(+10064); BIOPHYS-GENERAL
BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP,MACROMOLEC(+10506);
BIOPHYS-MEMBRANE PHENOMENA(10508); MOVEMENT(12100); REPRODUCT
SYST-PHYSIOL,BIOCHEM(16504)

Biosystematic Codes: BOVIDAE(85715)

18020724

PROBLEMS WITH CALF BED PADS

STAPLES G E

N.D. STATE UNIV. AGRIC. APPL. SCI., FARGO, N.D. 58102, USA.

BR VET J 135 (4). 1979. 380. Coden: BVJOA

Language: ENGLISH

Descriptors: NOTE BACTERIAL ACTION POLY VINYL CHLORIDE
HAIRBALL HAIR LOSS DIGESTIVE PROBLEM URINE SCALD

Concept Codes: BIOCHEM STUD-GENERAL(10060); DIGESTIVE
SYST-PATHOLOGY(+14006); URIN SYST/EXT SECR-PHYSL,BIOCHEM(1550-
4); INTEGUMENT SYST-PATHOLOGY(+18506); TOXICOL-VETERINARY(+22-
508); PEDIATRICS(25000); ANIMAL PRODUCTN-GENL STUDS,METHS(+26-
502); BACTERIA-PHYSIOLOGY,BIOCHEMISTRY(31000); MED/CLIN
MICROBIOL-BACTERIOLOGY(36002); VETERINARY SCI-PATHOLOGY(+3800-
4); VETERINARY SCI-MICROBIOLOGY(38006)

Biosystematic Codes: BACTERIA-UNSPECIFIED(04000); BOVIDAE(8-
5715)

18020393

A METHOD FOR STAINING POLY VINYL CHLORIDE IN SECTIONS USING
SUDAN IV

WILSON N

PATHOL. SECT., CENT. TOXICOL. LAB., IMP. CHEM. IND. LTD.,
ALDERLEY PARK, NR. MACCLESFIELD, CHESHIRE, ENGL., UK.

STAIN TECHNOL 54 (2). 1979. 101-102. Coden: STTEA

Language: ENGLISH

Descriptors: NOTE TOXICITY INVESTIGATION USE PARAFFIN
PROCESSING MAYERS HEMALUM LIPIDS LIPOCHROME PIGMENTS

Concept Codes: MICROSCOPY-GENL,SPECL TECHNIQUES(+01052);
MICROSCOPY-HISTOL,HISTOCHEM TECH(+01056); BIOCHEM METH-GENERA-
L(+10050); BIOCHEM METH-LIPIDS(10056); BIOCHEM STUD-GENERAL(1-
0060); RESPIRATORY SYST-GENL STUD,METHS(16001); ROUTES OF
IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+2-
2501); TOXICOL-ENVIRONMNTL,INDUSTP(22506)

18020777

SMALL AIRWAY DYS FUNCTION IN MEAT WRAPPERS ASTHMA

PRESTEL T H JR; CHESTER E H; TUTHILL T M; SCHWARTZ H J;
BARANCIK J I; BOZICH T A

VETERANS ADM. MED. CENT., CASE WEST. RESER. UNIV.,
CLEVELAND, OHIO, USA.

75TH ANNUAL MEETING OF THE AMERICAN LUNG ASSOCIATION HELD IN
CONJUNCTION WITH THE 74TH ANNUAL MEETING OF THE AMERICAN
THORACIC SOCIETY AND THE 67TH ANNUAL MEETING OF THE CONGRESS
OF LUNG ASSOCIATION STAFF, LAS VEGAS, NEV., USA, MAY 13-16,
1979. AM REV RESPIR DIS 119 (4 PART 2). 1979. 231. Coden:
ARDSB

Language: ENGLISH

Descriptors: ABSTRACT HUMAN POLY VINYL CHLORIDE PYROLYSIS
FUMES DYSPNEA COUGH CHEST TIGHTNESS SPIROMETRY PLETHYSMOGRAPHY

Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
BIOCHEM-GASES(+10012); BIOPHYS-GENERAL BIOPHYS TECH(10504);
EXTERN EFF-HOT(10618); CHORDATE BODY REGNS-THORAX(11312);
PATHOLOGY-DIAGNOSTIC(12504); PATHOLOGY-INFLAMMATN,INFLAM DIS(-
+12508); RESPIRATORY SYST-GENL STUD,METHS(16001); RESPIRATORY
SYST-PATHOLOGY(+16006); TOXICOL-ENVIRONMNTL,INDUSTP(+22506);
TEMPERATURE-GENL,METHS(23001);
IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); ALLERGY(+35500); ENV-
IRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215)

18012399

SOME PROBLEMS INVOLVED IN RECOGNIZING TERATOGENS USED IN INDUSTRY

BUFFLER P A
DEP. PREV. MED. COMMUNITY HEALTH, UNIV. TEX. MED. BRANCH.
GALVESTON, TEX. 77550, USA.

KLINGBERG, M. A. AND J. A. C. WEATHERALL (ED.).
CONTRIBUTIONS TO EPIDEMIOLOGY AND BIOSTATISTICS, VOL. 1.
EPIDEMIOLOGIC METHODS FOR DETECTION OF TERATOGENS. IX+203P. S.
KARGER: BASEL, SWITZERLAND; NEW YORK, N.Y., USA. ILLUS. MAPS.
PAPER. ISBN 3-8055-2889-2. O (O). 1979. P118-137. Coden:
CEPBD

Language: ENGLISH

Descriptors: REVIEW HUMAN VINYL CHLORIDE INHALATION
CHROMOSOMAL ABERRATIONS CIRCULATING LYMPHOCYTES SPONTANEOUS
ABORTION MUTAGEN

Concept Codes: GENL BIOL-INFRMTN,DOCU,COMP APPL(+00530);
CYTOLOGY/CYTOCHEM-HUMAN(+02508);
GENETICS/CYTOGENET-HUMAN(+03508); SOCIAL BIOL/HUMAN ECOLOGY(O-
5500); BIOCHEM STUD-GENERAL(10060); PATHOLOGY-DIAGNOSTIC(1250-
4); PATHOLOGY-NECROSIS(12510); BLOOD/BODY FLDS-BLOOD CELL
STUDS(+15004); RESPIRATORY SYST-PATHOLOGY(16006); REPRODUCT
SYST-GENL STUDS,METHS(16501); REPRODUCT SYST-PATHOLOGY(+16506)
; TOXICOL-ENVIRONMNTL,INDUSTR(+22506); DEVELOPMNTL BIOL-PATHO-
LOGICAL(+25503); DEVELOPMNTL BIOL-DESCRIP TERATOL(+25552); PUB
HEALTH-ADMINISTR,STATISTICS(+37010); ENVIRON HEALTH-AIR,WATR,-
SL POLLN(37015); EPIDEMIOL-MISCELL STUDIES(37056)

Biosystematic Codes: HOMINIDAE(86215)

18003185

EFFECTS OF ELECTRIC ENVIRONMENTAL FACTORS ON THE BEHAVIOR OF
CAGED HONEY BEES

ALTMANN G; WARNKE U
FACHR. ZOOL., FACHBER. 16 UNIV. SAARLANDES, 6600
SAARBRUECKEN, W. GER.

ANZ SCHAEDLINGSKD PFLANZENSCHUTZ UMWELTSCHUTZ 52 (2).
1979. 17-19. Coden: ASPUC

Language: GERMAN

Descriptors: RECTAL BLADDER METABOLIC RATE POLY VINYL
CHLORIDE CAGE STEEL CAGE

Concept Codes: GENERAL LABORATORY METHODS(01004); GENERAL
LABORATORY APPARATUS(01006); BEHAVIOR BIOL-ANIMAL BEHAVIOR(+0-
7003); BIOCHEM STUD-GENERAL(10060); EXTERN EFF-ELECTR,MAGNET,-
GRAVITY(+10610); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); ECONOM
ENTOMOL-SERICULTURE(+60020); INVERTB PHYSIOL-INSECTA-PHYSIOL(-
+64076); INVERTB BODY-SPECIAL ORGANS(64218)

Biosystematic Codes: HYMENOPTERA(75326)

68074644

RISK OF ANGIO SARCOMA IN WORKERS EXPOSED TO VINYL CHLORIDE
AS PREDICTED FROM STUDIES IN RATS

GEHRING P J; WATANABE P G; PARK C N
TOXICOL. RES. LAB., DOW CHEM. USA, MIDLAND, MICH. 48640,
USA.

TOXICOL APPL PHARMACOL 49 (1). 1979. 15-22. Coden:
TXAPA

Language: ENGLISH

Dose-response data for the induction of angiosarcoma in rats
exposed to various levels of vinyl chloride (VC) together with
attendant biotransformation data were used to estimate the
risk of developing angiosarcoma in persons exposed to VC.
Since a biotransformation product of VC, not VC per se, is
responsible for the induction of angiosarcoma, the body
surface area of people relative to rats was used to estimate
the dose of the carcinogen biotransformed from VC by the
former. Four models were used to extrapolate the data. Using a
probit model, 10 hepatic angiosarcomas were predicted to occur
in a recently reported epidemiological cohort of 9677 workers
whereas 5 have occurred. Linear models and that based on the
equation, Risk = 1 - e^{-beta.x}, where x = dose, do not appear
as reliable. For an 8 h day, 5 days/wk, 35 yr
time-weighted/average exposure of 1 ppm, the predicted
incidence of hepatic angiosarcoma using the probit model is
1.5 times 10⁻⁸.

Descriptors: CARCINOGEN BIO TRANSFORMATION BODY SURFACE AREA
LIVER PROBIT MODEL

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500);
BIOCHEM STUD-GENERAL(10060); PHYSIOLOGY-COMPARATIVE(12003);
DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PATHOL-
OGY(+14006); CARDIOVASC SYST-GENL STUDS,METHS(14501);
CARDIOVASC SYST-BLO VESS PATHOL(+14508); BONE,JNTS,FASC,CONN/-
ADIP-GENL(18001); BONE,JNTS,FASC,CONN/ADIP-PATHOL(+18006);
TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CAR-
CINOGENS(+24007); PUB HEALTH-ADMINISTR,STATISTICS(37010);
ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,W-
ATR,SL POLLN(37015); EPIDEMIOL-ORGANIC DIS,NEOPLASMS(+37054)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

68073207

STUDY OF FUNGAL RESISTANCE OF SOME LIQUID PLASTIFIERS UTILIZED IN POLY VINYL CHLORIDE COMPOSITION

LINOVITSKAYA V M; KURGANOVA L N; ANISIMOV A A; BOCHIKAREVA G G; OVCHINNIKOV YU A; KOMOLOVA V M
GORKI STATE UNIV., GORKI, USSR.
PRIKL BIOKHM MIKROBIOL 15 (1). 1979. 70-73. Coden: PBMI A

Language: RUSSIAN

Fungal resistance of liquid plastifiers, diesters of sebacic, adipic and phthalic acids, was measured with respect to the pH of culture fluids before and after the sample exposure together with the mold *Penicillium funiculosum*. The composition of acid metabolites of the test mold was determined by descending paper chromatography. Plastifiers based on adipic and sebacic acids underwent destruction by the mold. This was indicated by an accumulation of acid groups in the medium. Phthalates in the liquid C-free media were fungus-resistant.

Descriptors: PENICILLIUM-FUNICULOSUM SEBACIC-ACID ADIPIC-ACID PHTHALIC-ACID

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(+13002); MICROBIOLOG APPARAT,METHS,MEDIA(32000); FOOD/INDUS MICRO-BIODEGRAD,DETER(-*39006); PLANT PHYSIOL-METABOLISM(+51519)

Biosystematic Codes: DEUTEROMYCETES(15500)

68070713

DI CHLORO-P-NITRO ANISOLE O DE METHYLASE PART 2 EVIDENCE FOR SEPARATE ETHANOL INHIBITED AND PHENO BARBITAL INDUCIBLE ENZYMES

MULTMARK D; SUNDH K; JOHANSSON L; ARRHENIUS E
DEP. MICROBIOL., UNIV. STOCKH., S-106 91 STOCKHOLM, SWED.
BIOCHEM PHARMACOL 28 (10). 1979. 1587-1590. Coden: BCPA

Language: ENGLISH

Some properties of the monooxygenase activity measured in the recently described dichloro-p-nitroanisole O-demethylase assay were studied in rat liver microsomes. Enzyme activity in control microsomes was inhibited by ethanol (150 [median inhibitory dose] = 5 mM). The small slope of the inhibition curve was evidence for a heterogeneous enzyme system, with at least 1 enzyme being highly sensitive to ethanol inhibition. A number of other water-miscible organic solvents inhibited the reaction; tetrahydrofuran was most efficient (150 = 0.6 mM). Tween 80 gave only weak inhibition at concentrations up to 4 mg/ml. Vinyl chloride was a strong inhibitor. Phenobarbital pretreatment of the rats increased O-demethylase activity at least 24-fold and made the enzyme highly sensitive to metyrapone inhibition but not to ethanol. P-448 was not involved in the reaction since 3-methylcholanthrene pretreatment or addition of 7, 8-benzoflavone produced no effect. Only small differences were found between the enzyme from male and female rats.

Descriptors: RAT LIVER MICROsome METYRAPONE TETRA HYDRO FURAN TWEEN 80 VINYL CHLORIDE METHYL CHOLANTHRENE 7 8 BENZO FLAVONE CYTOCHROME P-448 MONO OXYGENASE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); GENETICS/C-YTOGENET-SEX DIFFERENC(03510); MATHEMATIC BIOL/STATISTIC METH(04500); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-PORPHYRNS,BILE PIGM(10065); BIOCHEM STUD-LIPIDS(10066); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); ENZYMES-GEN,COMPAR STUD,COENZYMES(10802); ENZYMES-METHODS(10804); ENZYMES-CHEM,PHYSICAL STUDIES(+10806); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); METABOLISM-GENL STUD-,METAB PATHW(13002); METABOLISM-LIPIDS(13006); METABOLISM-PRO-TNS,PEPTDS,AM ACDS(13012); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); PHARMACOL-DRUG METAB,METAB STIMU(+22003); PHARMACOL-NEUROPHARMACOL(22024); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-PHARMACOLOGICAL(+22504); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

68070692

PHARMACO KINETICS OF HALOGENATED ETHYLENES IN RATS

FILSER J G; BOLT H M
 INST. TOXIKOL., UNIV. TUEB., LOTHAR MEYER-BAU, WILHELMSTR.
 56, D-7400 TUEBINGEN 1, W. GER.
 ARCH TOXICOL 42 (2). 1979. 123-136. Coden: ARTOD
 Language: ENGLISH

Inhalation pharmacokinetics of the halogenated ethylenes vinyl fluoride (VF), vinylidene fluoride (VF2), vinyl chloride (VC1), vinylidene chloride (VC12), cis- and trans-dichloroethylene (cis-DCE and trans-DCE), trichloroethylene (Tri), perchloroethylene (Per) and vinyl bromide (VBr) were comparatively studied in the rat. Rats were exposed in a closed inhalation system to various initial atmospheric levels of halogenated ethylenes, and the decline of atmospheric concentration was followed using gas chromatographic analysis. From pharmacokinetic analysis of the experimental curves the following general patterns of the halogenated ethylenes were derived. Distribution of the compounds in the organism and in the gas phase was determined by physical factors. A relation of the equilibrium constants with the volatilities of the compounds, expressed by the boiling points, may be used; compounds with a low boiling point are enriched in tissues less than those of a higher boiling point and vice versa. Compounds with high accumulation in tissues (Tri, Per) need more time for completion of the equilibration process than more volatile compounds. Metabolic elimination of halogenated ethylenes is a saturable, dose-dependent process. If animals are exposed to atmospheric concentrations of a halogenated ethylene which exceed the point of saturation, elimination is determined by a zero-order law, i.e., its rate is independent of the concentration of the compound. Below saturation normal 1st-order kinetics apply. If the rate of metabolic elimination is related to the concentrations of the compounds in the tissue compartment, very similar rates for 1st-order elimination of the different halogenated ethylenes are found. A common rate limiting factor applicable for the lower concentration range was suggested. The Vmax of metabolic elimination of halogenated ethylenes which are reached above the saturation points depend on the chemical structures of the individual compounds. With the exception of Tri, further halogen substitution inhibits metabolic conversion. Of the halogenated ethylenes, VF2 and Per were slowly metabolized. The data necessary for calculation of the rates of metabolism of halogenated ethylenes in rats at a given concentration of atmospheric exposure were provided.

Descriptors: VINYL FLUORIDE VINYLIDENE FLUORIDE VINYL CHLORIDE VINYLIDENE CHLORIDE CIS DI CHLORO ETHYLENE TRANS DI CHLORO ETHYLENE TRI CHLORO ETHYLENE PER CHLORO ETHYLENE VINYL BROMIDE

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP,MACROMOLEC(+10506); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(+13002); RESPIRATORY SYST-PHYSIOL,BIOCHEM(16004); TOXICOL-GENL/EXP STUDS,METHS(+22-501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: MURDOCK(86274)

68066609

INSECT CONTROL WITH CARBON DI OXIDE IN A SMALL STACK OF BAGGED GRAIN IN A PLASTIC FILM ENCLOSURE

BANKS H J; SHARP A K
 DIV. ENTOMOL., CSIRO, CANBERRA, A.C.T. AUST.
 AUST J EXP AGRIC ANIM HUSB 19 (96). 1979. 102-107.
 Coden: AAAHA

Language: ENGLISH

The use of CO2, added as dry ice, was demonstrated as a means of disinfection of bagged wheat and rye enclosed in a PVC [polyvinyl chloride] membrane. The bag stack was dosed with dry ice giving an atmosphere of about 60% CO2. CO2 levels were maintained over 22 days with additional charges of dry ice added directly on top of the stack or enclosed within a polystyrene box to regulate the CO2 release rate. A natural infestation of *Rhyzopertha dominica* with small numbers of other stored product pest species was controlled, with complete mortality of adult insects, but slight survival of some early stages of *R. dominica*. Some hymenopterous parasitoids, *Anisopteromalus calandrae* and *Choetospila elegans*, survived the treatment, apparently as pupae. The treatment was successful under conditions where other methods of pest control were inapplicable because of difficulty or expense of application, as in a small bulk (2.8 tonnes), at low temperature (11-13 degree C), when the commodity is close to working areas and when pesticide residues are not permitted.

Descriptors: RHYZOPERTHA-DOMINICA ANISOPTEROMALUS-CALANDRA CHOETOSPILA-ELEGANS WHEAT RYE PESTICIDE POLY VINYL CHLORIDE MORTALITY

Concept Codes: BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(1-0060); PATHOLOGY-NECROSIS(12510); FOOD TECH-CEREAL CHEMISTRY(13510); FOOD TECH-PREP,PROCESSNG,STORAGE(13532); TOXICOL-GENL/EXP STUDS,METHS(22501); AGRONOMY-GRAIN CROPS(+52-504); PEST CONTRL GENL/PESTICS/HERBICS(+54600); ECONOM ENTOMOL-STORED PRODUCTS(+60008); ECONOM ENTOMOL-CHEM PHYS CONTRL(+60016); INVERTB PHYSIOL-INSECTA-PATHOL(+64078)

Biosystematic Codes: GRAMINEAE(25305); COLEOPTERA(75304); HYMENOPTERA(75326); ABSTRACTS OF ENTOMOLOGY(96000)

68064661

THE INFLUENCE OF SOIL TEMPERATURES AS CONTROLLED BY MULCHING ON GROWTH AND DEVELOPMENT IN MAIZE

IREMIREN G O; MILBOURN G M

NIGER. INST. OIL PALM RES., P.M.B. 1030. BENIN CITY, NIGER.

ANN APPL BIOL 91 (3). 1979. 397-402. Coden: AABIA

Language: ENGLISH

An increase in soil temperature (at 5 cm) of 1.5-4.0 degree. C occurred for 84 days after sowing maize with a surface mulch of clear polyvinyl chloride (PVC) sheet compared with a ground chalk mulch. This rise in soil temperature resulted in a 15-day advance in both emergence and the commencement of tassel primordia differentiation, with full tassel differentiation being 24 days earlier. The PVC mulch also led to 13 days earlier silking, with the spread in date of silking being reduced from 19 to 8 days, this effect being similar for both a double-cross and a single-cross hybrid. Dry matter yields of whole crop silage and of grain were increased by 11 and 39%, respectively, with PVC mulch due to the earlier development of a complete canopy with a longer grain fill period.

Descriptors: POLY VINYL CHLORIDE TASSEL PRIMORDIA DIFFERENTIATION SILKING DRY MATTER YIELD GRAIN SILAGE

Concept Codes: BIOCHEM STUD-GENERAL(10060); EXTERN EFF-TEMPERATURE(10614); TEMPERATURE-GENL,METHS(23001); PLANT PHYSIOL-TEMPERATURE(+51503); PLANT PHYSIOL-GROWTH,DIFFERENTIAT(+51510); PLANT PHYSIOL-REPRODUCTION(51512); AGRONOMY-GRAIN CROPS(+52504); AGRONOMY-FORAGE CROPS,FODDER(+52506); SOIL SCI-FERTILITY,APPLIED STUDS(+52807)

Biosystematic Codes: GRAMINEAE(25305)

68061939

VINYLIDENE FLUORIDE METABOLISM AND INDUCTION OF PRE NEOPLASTIC HEPATIC FOCI IN RELATION TO VINYL CHLORIDE

STOCKLE G; LAIB R J; FILSER J G; BOLT H M

INST. TOXIKOL., UNIV. TUEB., WILHELMSTR. 56. D-7400 TUEBINGEN-1, W. GER.

TOXICOL LETT (AMST) 3 (6). 1979. 337-342. Coden: TOLED

Language: ENGLISH

The velocity (V_{max}) of metabolic elimination of vinylidene fluoride from the rat is 1/100 that of vinyl chloride. In the light of the current concept of metabolic activation of halogenated ethylenes, this may explain the much lesser ability of vinylidene fluoride, compared with vinyl chloride, to induce pre-neoplastic ATPase-deficient hepatic foci in newborn rats.

Descriptors: RAT CARCINOGENS

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); ENZYMES-METHODS(10804); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PATHOLOGY(+14006); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); PEDIATRICS(25000)

Biosystematic Codes: MURIDAE(86375)

68061880

ETHANOL INHIBITION OF VINYL CHLORIDE METABOLISM IN ISOLATED RAT HEPATOCYTES

HULTMARK D; SUNDH K; JOHANSSON L; ARRHENIUS E

DEP. MICROBIOL., UNIV. STOCKH., S-106 91 STOCKHOLM, SWED.

CHEM-BIOL INTERACT 25 (1). 1979. 1-6. Coden: CBINA

Language: ENGLISH

Isolated rat liver cells convert [^{14}C]vinyl chloride [a carcinogen] into non-volatile metabolites. This metabolism is not increased by in vivo pretreatment with phenobarbital. It is sensitive to inhibition by ethanol, which at a concentration of 4 mM inhibits vinyl chloride metabolism to 50% in hepatocyte suspensions. The metabolic activity is NADPH-dependent and is localized in the microsomal fraction of the liver. The enzyme is strongly inhibited by tetrahydrofuran, indicating that it could be identical to an ethanol-inducible cytochrome P-450.

Descriptors: TETRA HYDRO FURAN ENZYME INHIBITOR-DRUG ETHANOL PHENO BARBITAL METABOLIC-DRUG CARCINOGEN CYTOCHROME P-450 NADPH

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-PORPHYRNS,BILE PIGM(10065); ENZYMES-GEN,COMPAR STUD,COENZYMES(+10802); PATHOLOGY-THERAPY(1-2512); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004); PHARMACOL-DRUG METAB,METAB STIMU(+22003); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); NEOPLSMS/NEOPL AGNTS-THERAP,AGNT(24008); IN VITRO STUDS-CELLULAR,SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

68058807

TRANSIENT IN-VIVO PROTEIN ADSORPTION ONTO POLYMERIC BIO MATERIALS

IHLENFELD J V; COOPER S L

3M CO., 3M CENTER, ST. PAUL, MINN. 55101, USA.

J BIOMED MATER RES 13 (4). 1979. 577-592. Coden: JBMRB

Language: ENGLISH

The adsorption of albumin, .gamma.-globulin and fibrinogen was measured on 3 ex vivo polymeric shunt surfaces [polyvinyl chloride (PVC), Silastic and segmented polyether urethane (Biomer)] exposed to flowing heparinized, canine blood in vivo. Small amounts of radiolabeled proteins were infused into anesthetized mongrel dogs and the deposition of radioactivity on the walls of femoral arteriovenous shunts was followed with time for 2 h following initial blood-polymer contact. Previously, transient in vivo platelet and fibrin deposition onto PVC, Silastic and Biomer was measured by a similar technique in the absence of anticoagulant. A time-dependent phase of thrombus deposition followed by thromboembolism was observed on the PVC and Silastic shunt surfaces but not on the Biomer surface. In relation to PVC and Silastic studies fibrinogen adsorption predominated initially; it subsequently desorbed and was replaced by albumin and .gamma.-globulin. On Biomer the adsorption of all 3 proteins increased with time following blood contact and fibrinogen was less prominent initially. The PVC surface became passivated with respect to further thrombogenesis after 60 min exposure to flowing blood; a higher fraction of albumin was present on the surface compared to that at earlier blood contact times. Apparently rearrangement of adsorbed protein species occurs with time on polymer surfaces exposed to flowing blood in vivo. Early and predominant fibrinogen absorption is apparently important in the thrombogenic and embolic events observed on the PVC and Silastic shunt surfaces in vivo.

Descriptors: DOG BLOOD FEMORAL ARTERIO VENOUS SHUNT PLATELET HEPARIN ANTICOAGULANT FIBRINOGEN GAMMA GLOBULIN ALBUMIN FIBRIN POLY VINYL CHLORIDE SILASTIC POLY ETHER URETHANE BIOMER THROMBUS

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION BIOL-RADTN.ISOTOP TECH(06504); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP.MACROMOLEC(10506); BIOPHYS-BIOENGINEERING(+10511); ANATOMY/HISTOL-EXPERIMENTAL(11104); ANATOMY/HISTOL-REGEN.TRANSPLANT(11107); CHORDATE BODY REGNS-EXTREMITIES(11318); PHYSIOLOGY-COMPARATIVE(12003); MOVEMENT(12100); PATHOLOGY-COMPARATIVE(12503); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM-CARBOHYDRATES(13004); METABOLISM-PROTNS,PEPTDS,AM ACDS(+13012); CARDIOVASC SYST-GENL STUDS,METHS-(14501); CARDIOVASC SYST-PHYSIOL,BIOCHEM(14504); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(+15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004); NERVOUS SYST-GENL STUDS,METHS(20501); PHARMACOL-BLOOD,HEMATO AGENTS(22008); PHARMACOL-CARDIOVASC SYST(22010); PHARMACOL-NEUROPHARMACOLOGY(22024); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: CANIDAE(85765)

68057721

THE SEARCH FOR EXPIRATORY OBSTRUCTION IN MEAT WRAPPERS STUDIED ON THE JOB

KRUMPE P E; FINLEY T N; MARTINEZ N

DEP. MED., UNIV. CALIF., DAVIS, CALIF., USA.

AM REV RESPIR DIS 119 (4). 1979. 611-618. Coden: ARDSB

Language: ENGLISH

The respiratory history questionnaire responses and maximal expiratory flow-volume curves in meat wrappers and control subjects who worked 12 +/- 3 yr at their occupation were studied; all subjects regularly cut polyvinyl chloride film with a hot wire and were exposed to pyrolysis fumes on the job. One half of the subjects were studied at room temperature and the rest were studied in a refrigerated work area (2.degree. C). Compared to the control subjects, the wrappers demonstrated a greater prevalence of respiratory complaints and related eye irritation after exposure to fumes. Baseline values for forced vital capacity [FVC], forced expired volume in 1 s [FEV1s] and expiratory flow at 50% of vital capacity exceeded 70% of predicted values in all but 1 of 30 wrappers. After one 8-h shift, FVC and FEV1s remained unchanged (+/- 10%). In 15 wrappers; maximal flow at 50% of vital capacity decreased by 10% or more in 4 of 15 wrappers (26%). After work for 1 wk, FEV1 was decreased by 10% or more in 2 of 30 wrappers (7%), FEV1s was unchanged and expiratory flow at 50% of vital capacity was decreased in 7 of 30 wrappers (13%). Changes in the group of wrappers were not significantly different from the control groups when studied by analysis of variance. The wrappers' responses under refrigerated conditions were not different from those studied at room temperature. Although certain hypersensitive persons may develop bronchospasm after exposure to fumes of polyvinyl chloride film, documentation of normal base-line pulmonary function studies and the low incidence of reactive bronchospasm after on-the-job exposure to polyvinyl chloride pyrolysis fumes argue against the presence of a major respiratory hazard in this occupation.

Descriptors: HUMAN RESPIRATORY PROBLEM EYE IRRITATION BRONCHO SPASM POLY VINYL CHLORIDE PYROLYSIS

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM METH-GENERAL(10050); EXTERN EFF-COLD(10616); EXTERN EFF-HOT(10618); MOVEMENT(12100); PATHOLOGY-INFLAMMATN,INFLAM DIS(12508); FOOD TECH-MEAT,MEAT BY-PRODUCTS(13516); FOOD TECH-PREP,PROCESSNG,STORAGE(13532); RESPIRATORY SYST-GENL STUD,METHS(16001); RESPIRATORY SYST-PHYSIOL,BIOCHEM(16004); RESPIRATORY SYST-PATHOLOGY(+1600-6); MUSCLE SYST-PATHOLOGY(17506); SENSE ORGANS-PHYSIOL,BIOCHEM(20004); SENSE ORGANS-PATHOLOGY(+20006); TOXICOL-ENVIRONMNTL-INDUSTRI(+22506); TEMPERATURE-GENL,METHS(23001); TEMPERATURE--CRYOBIOLOGY(23004); IMMUNOL/IMMUNOCHEM-IMMUNOPATHIOL(34508); ALLERGY(35500); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: VERTEBRA(A-UNSPECIFIED(85150); HOMINID-AE(86215)

NFLMS L II; REISZNER K D; WEST P W
ENVIRON. SCI. INST., CHEM. DEP., LA. STATE UNIV., BATON
ROUGE, LA., 70803, USA.

ANAL CHEM 49 (7). 1977. 994-998. Coden: ANCHA

Language: ENGLISH

A method for measuring the exposure of personnel to vinyl chloride was developed which utilizes the permeation technique for sampling. The vinyl chloride that permeates the membrane is trapped on activated charcoal which is removed for subsequent determination by gas chromatography. The monitor is about the size of a standard film badge, weights < 35 g and requires no source of power. The method is insensitive to temperature and humidity and is free of significant interferences. The method is ideally suited to personal monitoring programs required by OSHA [Occupational Safety and Health Act of 1970] regulations, because the analytical data represent a time-weighted-average exposure and require no further data reduction step.

Descriptors: HUMAN OCCUPATIONAL HAZARD

Concept Codes: GENL BIOL-INSTITUT,ADMIN,LEGISLN(00508); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); TOXICOL-GENL/EXP STUDS,METHS(+2-2501); TOXICOL-ENVIRONMNTL,INDUSTRI(+22506); PUB HEALTH-ADMINI-STR,STATISTICS(37010); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

68057695

PERSONAL VINYL CHLORIDE MONITORING DEVICE WITH PERMEATION TECHNIQUE FOR SAMPLING

68055039

METABOLISM OF CARBON-14 LABELED AND CHLORINE-36 LABELED VINYL CHLORIDE IN-VIVO AND IN-VITRO

GUENGERICH F P; WATANABE P G
 DEP. BIOCHEM., CENT. ENVIRON. TOXICOL., VANDERBILT UNIV.
 SCH. MED., NASHVILLE, TENN. 37232, USA.

BIOCHEM PHARMACOL 28 (5). 1979. 589-596. Coden: BCPCA

Language: ENGLISH

Label from [¹⁴C]vinyl chloride was covalently bound to protein and nucleic acids in vivo and in vitro in the presence of rat liver microsomal fractions or highly purified cytochrome P-450 and NADPH-cytochrome P-450 reductase preparations. The ratio of bound to total non-volatile metabolites increased in going from the in vivo to the microsomal to the purified system. [³⁶Cl]vinyl chloride was metabolized by microsomes and highly purified systems. No label was bound and most could be accounted for as Cl⁻. Phenobarbital pretreatment of rats did not induce total metabolism of vinyl chloride in vivo at either 10 or 250 ppm exposure levels. Binding to protein and RNA was enhanced at the 10 ppm but not the 250 ppm level. Phenobarbital pretreatment increased the in vitro microsomal conversion of vinyl chloride to both total and bound metabolites. A sizeable fraction of the label of [¹⁴C]vinyl chloride metabolized in vivo was recovered in the microsomal fraction of the liver, but sodium dodecyl sulfate polyacrylamide gel electrophoresis of in vitro incubations indicated that the metabolites were distributed among many microsomal proteins and not localized to cytochrome P-450. Evidence was obtained for the metabolism of the suspected vinyl chloride metabolite chloroethylene oxide by microsomal epoxide hydratase. The epoxide hydratase inhibitor 3,3,3-trichloropropylene oxide, which blocks the microsomal degradation of chloroethylene oxide, did not enhance the level of vinyl chloride bound to either protein or adenosine.

Descriptors: RAT LIVER CARCINOGEN CYTOCHROME P-450 NADPH CYTOCHROME P-450 REDUCTASE PHENO BARBITAL CENTRAL DEPRESSANT PROTEIN RNA ADENOSINE SODIUM DODECYL SULFATE POLY ACRYLAMIDE GEL ELECTROPHORESIS CHLORO ETHYLENE OXIDE MICROSOMAL EPOXIDE HYDRATASE 3 3 3 TRI CHLORO PROPYLENE OXIDE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-NUCL ACD,PURNS,PY-RM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-PORPHYRNS,BILE PIGM(10065); BIOCHEM STUD-LIPIDS(-10066); BIOCHEM STUD-CARBOHYDR.(10068); MINERALS(10069); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP,MACROMOLEC(+10506); ENZYMES-PHYSIOLOGICAL STUDIES(10808); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM,NUCL ACD,PURINS,PYRIM(+13014); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); NERVOUS SYST-GENL STUDS,METHS(20501); PHARMACOL-NEUROPHARMACOLOGY(22024); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(-24007); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

68046563

EMBRYO TOXIC AND TERATOGENIC ACTION OF VINYL CHLORIDE

MIRKOVA E; MIKHAILOVA A; NOSKO M

INST. HYG. OCCUP. DIS., MED. ACAD., SOFIA, BULG.

KHIG ZDRAVEPAZ 21 (5). 1978 (RECD. 1979). 440-443.

Coden: KHZDA

Language: BULGARIAN

The embryotoxic and teratogenic action of vinylchloride on 40 pregnant white Wistar rats was examined. The experiments were carried out under the conditions of daily inhalatory poisoning during gestation at mean daily concentrations of vinylchloride (6.15 mg/m³). There was a manifested embryotoxic and teratogenic effect of vinylchloride-elevated total embryonal mortality, lowered fetal wt and induction of external and internal anomalies in the development of the fetus. The threshold value of concentration for embryotoxicity and teratogenicity was calculated to be 10 mg/m³.

Descriptors: WISTAR RAT TERATOGEN GESTATION

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); GENETICS/CYTOGENET-ANIMAL(+03506); MATHEMATIC BIOL/STATISTIC METH(04500); BIOCHEM STUD-GENERAL(10060); PATHOLOGY-NECROSIS(12510); RESPIRATORY SYST-GENL STUD,METHS(16001); REPRODUCT SYST-PATHOLOGY(16506); ROUTES OF IMMUNIZ,INFECT.THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501); DEVELOPMNTL BIOL-PATHOLOGICAL(+25503); DEVELOPMNTL BIOL-EXPER TERATOL(+25554)

Biosystematic Codes: MURIDAE(86375)

68045021

DAMAGING EFFECT OF CADMIUM OXIDE DUST TO THE LUNG AND ITS RELATION TO SOLUBILITY OF THE DUST

KOSHI K; HOMMA K; SAKABE H

NATL. INST. IND. HEALTH, NAGAO 6, TAMA, KAWASAKI, KANAGAWA 213, JPN.

IND HEALTH 16 (2). 1978 (RECD. 1979). 81-90. Coden: INIHEA

Language: ENGLISH

The effects of cadmium oxide dusts on the rat lung were studied after exposure of 90 min at a concentration of 19.5 mg/m³ and compared with experiments carried out with calcium carbonate and polyvinyl chloride dusts with different concentrations. Alveolar macrophages, protein and phospholipid in the lung washing fluids of rats and the lung weights were determined 1 h and 21 h after exposure to each dust. Remarkable points in the results were the decrease in number of macrophages and increase of protein 21 h after exposure to cadmium oxide dusts. The decrease of macrophages was observed 1 h after exposure to cadmium oxide dusts. Cadmium oxide dusts were dissolved easily in water or Tyrode's solution added with protein or amino acid as in the case of Cd fume reported previously. Cadmium oxide dusts added in the washing fluid from the lung of rats 21 h after exposure showed a higher solubility compared with that added in the washing fluid from non-exposed (control) rat lung. Cd which was dissolved from cadmium oxide dusts in albumin or glycine solution showed a strong toxic action on the i.p. macrophages and mouse embryo 3T6 fibroblast cells. Decrease of macrophages and increase of protein in the lung washing fluid by exposure to cadmium oxide dusts was apparently evoked by the toxic action of Cd of which solubility was enhanced by the biological medium in the lung containing protein.

Descriptors: MOUSE EMBRYO 3T6 FIBROBLAST POLY VINYL CHLORIDE CALCIUM CARBONATE PROTEIN MACROPHAGE DECREASE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); BIOCHEM STUD-LIPIDS(10066); MINERALS(10069); BIOPHYS-MOLECUL PROP, MACROMOLEC(10506); CHORDATE BODY REGNS-ABDOMEN(11314); METABOLISM-LIPIDS(13006); MINERALS(13010); METABOLISM-PROTNS, PEPTIDS, AM ACIDS(+13012); BLOOD/BODY FLDS-LYMPHAT TISS, RES(+15008); RESPIRATORY SYST-PHYSIOL, BIOCHEM(16004); RESPIRATORY SYST-PATHOLOGY(+16006); INTEGUMENT SYST-GENL STUDS, METHS(18501); ROUTES OF IMMUNIZ, INFECT, THERAP(22100); TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ENVIRONMNTL, INDUSTR(22506); DEVELOPMNTL BIOL-GENL, DESCRIPTIVE(25502)

Biosystematic Codes: MURIDAE(86375)

Language: ENGLISH

Maximum concentration levels (MCL), recommended by the National Drinking Water Advisory Council [USA], are more flexible than granular activated C treatment [GAC] for synthetic organic compounds [SOC]. Considerable data on SOC are available on which MCL could be based. The GAC treatment cannot be justified by cost analysis for 5 potential carcinogens [bis(2-chloroethyl) ether, CCl₄, polychlorinated biphenyls, trichloroethylene and vinyl chloride]. The Environmental Protection Agency lacks the authority to promulgate the current regulation and should regulate SOC by MCL.

Descriptors: ENVIRONMENTAL PROTECTION AGENCY NATIONAL DRINKING WATER ADVISORY COUNCIL USA BIS-2 CHLOROETHYL ETHER CARBON TETRA CHLORIDE POLY CHLORINATED BI PHENYLS TRI CHLORO ETHYLENE VINYL CHLORIDE CARCINOGEN MAXIMUM CONCENTRATION LEVEL

Concept Codes: GENL BIOL-INSTITUT, ADMIN, LEGISLN(G0508); MATHEMATIC BIOL/STATISTIC METH(04500); ECOLOGY-LIMNOLOGY(+07514); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); BIOPHYS-MEMBRANE PHENOMENA(10508); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); ENVIRON HEALTH-SEWG DISP, SANITAR(+37014); ENVIRON HEALTH-AIR, WATR, SL POLLN(+37015)

68044291

ORGANICS IN DRINKING WATER MAXIMUM CONTAMINANT LEVELS AS AN ALTERNATIVE TO THE GRANULAR ACTIVATED CARBON TREATMENT REQUIREMENT

PENNYGRAFT G W; SCHLEGEL F E; HUSTON M J

AM WATER WORKS ASSOC J. 71 (4). 1979. 174-183. Coden: JAWWA

68042510

HEADSPACE GAS CHROMATOGRAPHIC ANALYSIS OF VINYL CHLORIDE MONOMER IN RAT BLOOD AND TISSUES

ZUCCATO E; MARCUCCI F; FANELLI R; MUSSINI E

IST. RIC. FARMACOL. MARIO NEGRI, VIA ERITREA 62, 20157 MILAN, ITALY.

XENOBIOTICA 9 (1). 1979. 27-32. Coden: XENOB

Language: ENGLISH

A method for measuring [the carcinogen] vinyl chloride monomer (VCM) concentration in rat blood and tissues is described, using a head-space GLC technique with flame ionization detector. The method is sensitive to 5 ng/ml VCM in blood and 30 ng/g in tissues. VCM disposition was determined in rat blood, liver, kidney, brain and lung at different intervals after administration of 1-10 mg VCM/kg i.v. and 10 mg/kg orally. VCM distributed rapidly in the organism after i.v. administration; it was eliminated rapidly and was no longer detectable at 15 min for the highest dose and at 4 min for the lowest. VCM was absorbed rapidly when given orally and tissue concentrations were measurable for longer than after i.v. treatment. For both routes, VCM concentration in liver and lung decrease faster than in other organs, suggesting that these organs play a role in VCM elimination.

Descriptors: LIVER KIDNEY BRAIN LUNG CARCINOGEN GAS LIQUID CHROMATOGRAPHY FLAME IONIZATION DETECTOR

Concept Codes: CLIN BIOCHEM-GENL STUDIES(+10006); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); PHYSIOLOGY-COMPARATIVE(12003); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004); CARDIOVASC SYST-GENL STUDS,METHS(14501); BLOOD/BODY FLOS-BLOOD,LYMPH STUD(+15002); URIN SYST/EXT SECR-PHYSIOL,BIOCHEM(+15504); RESPIRATORY SYST-PHYSIOL,BIOCHEM(+16004); DENTAL/ORAL BIOL-GENL STUD,METHS(19001); NERVOUS SYST-PHYSIOL,BIOCHEM(+20504); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: MURIDAE(86375)

68041119

STUDIES ON METABOLIC ACTIVATION OF VINYL CHLORIDE IN DROSOPHILA-MELANOGASTER AFTER PRE TREATMENT WITH PHENOBARBITAL AND POLY CHLORINATED BI PHENYLS

MAGNUSSON J; HALLSTROM I; RAMEL C

ENVIRON. TOXICOL. UNIT, WALLENBERG LAB., UNIV. STOCKH. S-106 91, STOCKHOLM, SWED.

CHEM-BIOL INTERACT 24 (3). 1979. 287-298. Coden: CBINA

Language: ENGLISH

Vinyl chloride is metabolized by the mixed function oxygenase system in the liver to reactive mutagenic and carcinogenic metabolites. This metabolic activation was studied in *D. melanogaster* by measuring the uptake of ¹⁴C from labeled vinyl chloride in different strains [Berlin, Karsnas 60 and Hikone] and with different pretreatments with phenobarbital and polychlorinated biphenyl (PCB) (Clophen

A50), well known inducers of cytochrome P-450. In accordance with previous data on vinyl chloride induced sex-linked recessive lethals, it was shown that pretreatment with inducers increased the uptake of labeled compound up to 10 times. There was a marked difference in response between the 5 strains used. The Hikone strain, known to be insecticide resistant, had a comparatively high initial radioactivity from vinyl chloride without any pretreatment, but it was not (or insignificantly) inducible with phenobarbital or PCB. Crosses between Hikone and an inducible strain indicated essentially a dominance for the Hikone genotype. Tests on inducible strains showed the same response to phenobarbital by 2 h old larvae and adult males and females. Dimethylsulfoxide (DMSO) used as a solvent decreased both the initial uptake of ¹⁴C and particularly the induction by PCB. The use of Tween 80 as an emulsifier did not have such an effect. The interstrain variation in metabolic activation and inducibility has to be taken into consideration to optimize the use of *Drosophila* for mutagenicity testing. This variation also opens up new possibilities of analyzing the mixed function oxygenase system biochemically and genetically.

Descriptors: KARSNAS 60 BERLIN HIKONE STRAINS LIVER CLOPHEN A-50 METABOLIC-DRUG MIXED FUNCTION OXYGENASE CYTOCHROME P-450 MUTAGEN CARCINOGEN INSECTICIDE RESISTANCE DI METHYL SULFOXIDE TWEEN 80 CARBON-14 MUTAGENICITY TESTING SEX LINKED RECESSIVE LETHAL

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); GENETICS/CYTOGENET-ANIMAL(+03506); GENETICS/CYTOGENET-POPULAT GENET(03509); GENETICS/CYTOGENET-SEX DIFFERENC(03510); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM METH-GENERAL(10050); BIOCHEM METH-NUCL ACID,PURNS,PYRM(10052); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); BIOCHEM STUD-PORPHYRINS,BILE PIGM(10065); BIOCHEM STUD-LIPIDS(10066); ENZYMES-GEN,-COMPAR STUD,COENZYMES(+10802); ENZYMES-METHODS(10804); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); PATHOLOGY-COMPARATIVE(12503); PATHOLOGY-NECROSIS(12510); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM-PROTNS,PEPTDS,AM ACDS(+13012); METABOLISM-NUCL ACID,PURINS,PYRIM(+13014); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); PHARMACOL-DRUG METAB,METAB STIMU(+22003); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ANTI-DOTES,PREVENTIVE(22505); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); DEVELOPMNTL BIOL-GENL,DESCRIPTIVE(25502); DEVELOPMNTL BIOL-GEN MORPHIGENSIS(25508); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015); PEST CONTRL GENL/PESTICS/HERBICS(54600); ECONOM ENTOMOL-CHEM PHYS CONTRL(60016); INVERTB PHYSIOL-INSECTA-PHYSIOL(64076); INVERTB PHYSIOL-INSECTA-PATHO-L(+64078)

Biosystematic Codes: DIPTERA(75314); ABSTRACTS OF ENTOMOLOGY(96000)

68039174

INTERACTIONS OF THROMBIN AND ANTI THROMBIN III WITH ARTIFICIAL SURFACES

CHUANG H Y K; CROWTHER P E; MOHAMMAD S F; MASON R G
 DEP. PATHOL., COLL. MED., UNIV. S. FLA., TAMPA, FLA., USA.
 THROMB RES 14 (2-3). 1979. 273-282. Coden: THBRA
 Language: ENGLISH

Thrombin adsorption onto Cuprophane surfaces was not saturable at thrombin concentrations of up to 1 mg/ml and gave adsorption isotherms distinct from those for 4 other proteins: albumin, fibrinogen, immunoglobulin [Ig] G and antithrombin III. Kinetic analyses suggested 2 types of binding sites with thrombin-Cuprophane apparent K_d of 300 nM and 7190 nM, respectively. Data from the competitive adsorption of thrombin on Cuprophane with albumin and Ig G at low and high thrombin concentrations and the absence of such types of adsorption of thrombin on PVC [polyvinyl chloride] support the concept of the presence of these 2 types of binding sites on Cuprophane. Thrombin-PVC interaction resulted in a Langmuir type adsorption. Ig G showed higher affinity for PVC (K_d = 35 nM) than did the other 4 proteins (K_d = 300-900 nM). A hypothesis that multiple types of binding sites that are specific for certain plasma proteins may exist on various artificial surfaces was proposed.

Descriptors: POLY VINYL CHLORIDE ALBUMIN FIBRINOGEN IMMUNOGLOBULIN G

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(+10064); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-MOLECUL PROP, MACROMOLEC(+10506); BIOPHYS-BIOENGINEERING(+10511); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(+15002); IMMUNOL/IMMUNOCHEM-GEN METH(+34502)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150)

68033633

TECHNIQUES FOR SAMPLING THE AIR SEA INTERFACE FOR ESTUARINE AND COASTAL WATERS

HAMILTON E I; CLIFTON R J
 INST. MAR. ENVIRON. RES., 67/69 CITADEL RD., PLYMOUTH PL1 3DH, ENGL., UK.

LIMNOL OCEANOGR 24 (1). 1979. 188-193. Coden: LIOCA

Language: ENGLISH

A freezing probe impacted onto the surface of the sea had a very high efficiency for the removal of most materials present, surface water and any suspended particulate material present to a depth of about 1000 μ m. A PVC [polyvinyl chloride] film cast on the sea surface removed solid materials and various organic compounds, such as lipids and hydrocarbons, floating on the surface, but excluded aqueous phases.

Descriptors: PARTICULATE LIPID HYDRO CARBON POLY VINYL CHLORIDE FILM

Concept Codes: GENERAL FIELD METHODS(+01008); GENERAL FIELD APPARATUS(+01010); ECOLOGY-OCEANOGRAPHY, LIMNOLOGY(+07510); ECOLOGY-OCEANOGRAPHY(+07512); ECOLOGY-WATR RESRCH, FISHERY BIOL(07517); BIOCHEM METH-GENERAL(+10050); BIOCHEM

METH-LIPIDS(10056);
 STUD-LIPIDS(10066)

BIOCHEM STUD-GENERAL(+10060); BIOCHEM

68032058

SORPTION OF VINYL CHLORIDE BY SELECTED FOOD CONSTITUENTS

BIRAN D; GILBERT S G; GIACIN J R

BAIT YIZZHAK, ISR.

J FOOD SCI 44 (1). 1979. 56-58. Coden: JFDSA

Language: ENGLISH

The problem of migration from a packaging material into packaged food is treated in the literature using extraction studies from polymeric materials into simulating solvents such as heptane, oil, water, 3% acetic acid, 50% ethanol, etc. (Figge, 1972). Such studies provide a good measure for predicting possible migration into foods, but do not serve as a direct measure for the relative affinity of foods or their components for the migrant (e.g., vinylchloride monomer, VCM). The approach taken in this study was to establish directly the relative affinities of the basic food constituents for vinylchloride. Sorption measurements of VCM by 4 basic food constituents, (water, corn oil, casein and sucrose) were conducted. In addition, sorption studies were carried out with oil in water emulsions. For water, oil, oil/water emulsions and casein, it was found that the partition coefficient values (defined as the equilibrium concentration of VCM sorbed over the equilibrium concentration of VCM in headspace) were fairly constant within the sorbate (VCM) concentrations studied. At 24.degree. C, the partition coefficient values for oil, casein and water were 23.7 .times. 10³, 11.7 .times. 10³ and 2.1 .times. 10³, respectively. Sucrose did not sorb detectable amounts of VCM under the experimental conditions employed. The sorption of VCM by an oil-in-water emulsion, representing a multi-component system, follows the same relationship to initial headspace concentration and temperature as do water and oil. The total amount of VCM sorbed by the emulsion is not the exact arithmetical sum of potential contributions of its individual components. Sorption studies showed that the chemical nature of the sorbent (i.e., food constituent), starting sorbate (i.e., VCM) concentrations and temperature are important factors affecting the extent of vinylchloride sorption.

Descriptors: CORN OIL WATER CASEIN SUCROSE MIGRATION EMULSION

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(+10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-LIPIDS(10066); BIOCHEM STUD-CARBOHYDR.(10068); EXTERN EFF-TEMPERATURE(10614); MOVEMENT(12100); FOOD TECH-GENL STUDS,METHS(+13502); FOOD TECH-FATS,OILS(+13514); FOOD TECH-DAIRY PRODUCTS(13518); FOOD TECH-SUGAR(13524); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); FOOD TECH-PREP,PROCESSNG,STORAGE(+13532); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); TEMPERATURE-GENL,METHS(23001); PLANT PHYSIOL-CHEM CONSTITUENT-S(51522); AGRONOMY-GRAIN CROPS(52504)

Biosystematic Codes: GRAMINEAE(25305)

BIRAN D; GIACIN J R; HAYAKAWA K; GILBERT S G

BAIT YIZZHAK, ISR.

J FOOD SCI 44 (1). 1979. 59-61. Coden: JFDSA

Language: ENGLISH

Sorption of vinylchloride (VCM) by dry casein particles was determined as a function of temperature and moisture content. The amount sorbed increased with a decrease in temperature or reduction in moisture content of the particles. At 30.degree. C, the partition coefficient values (Kp) were 1.05, 0.4 and 0.33 .times. 10² for casein particles of moisture content 3.5, 6.0 and 7.5, weight percent, respectively. The partition coefficient was defined as the equilibrium concentration of VCM sorbed over the sorbate concentration in the headspace. The effect of dipole moment of the sorbate on sorption to casein was evaluated by comparing sorption of VCM and the analogues, ethylene and vinylidene chloride. Sorption was increased with the dipole moment of the sorbate, suggesting the importance of dipole moment as a sorption inducing factor. Further supportive evidence for the importance of dipole moment in sorbate-casein interaction was obtained by a gas chromatographic technique (inverse phase gas chromatography). Using casein as the stationary phase of a gas chromatographic column, the solutes VCM, ethylene, vinylidene chloride (VDC) and hexane were pulsed through the column and the peak shapes recorded. Peak shapes indicated an interaction between casein and the polar solutes (VCM and VDC) whereas no such interaction (sorption) was indicated for the nonpolar solutes, ethylene and hexane. A rate model for VCM sorption by dry casein particles was also developed.

Descriptors: TEMPERATURE MOISTURE PARTITION COEFFICIENT DIPOLE MOMENT RATE MODEL

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(+10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(+10064); BIOPHYS-GENERAL STUDIES(10502); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); EXTERN EFF-TEMPERATURE(+10614); MOVEMENT(12100); FOOD TECH-DAIRY PRODUCTS(+13518); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); FOOD TECH-PREP,PROCESSNG,STORAGE(+13532); FOOD TECH-SYNTH,SUPPL,ENRICH FDS(13534); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); TEMPERATURE-GENL,METHS(23001)

68032053

VINYL CHLORIDE SORPTION BY DRY CASEIN PARTICLES MECHANISTIC CONSIDERATIONS

68029790

MUTAGENIC AND ALKYLATING METABOLITES OF HALO ETHYLENES
CHLORO BUTADIENES AND DI CHLORO BUTENES PRODUCED BY RODENT OR
HUMAN LIVER TISSUES EVIDENCE FOR OXIRANE FORMATION BY
CYTOCHROME P-450 LINKED MICROSOMAL MONO OXYGENASES

BARTSCH H; MALAVEILLE C; BARBIN A; PLANCHE G
INT. AGENCY RES. CANCER, 150 COURS ALBERT-THOMAS, F-69372
LYON CEDEX 2, FR.

ARCH TOXICOL 41 (4), 1979, 249-278. Coden: ART00

Language: ENGLISH

Mutagenicity, expressed as the number of his⁺ revertants per μ mol of test compound per h of exposure, was estimated in 2 strains of *S. typhimurium* in the presence of a postmitochondrial mouse liver supernatant, following exposure to vapors of 1 of a series of halo-olefins. Their activity was in the following descending order: 3,4-dichlorobutene-1 > 1-chlorobutadiene (technical grade) > 2-chlorobutadiene > vinyl bromide > vinylidene chloride > vinyl chloride; marginal mutagenicity was detected in the presence of 1,1,2-trichloroethylene and 1,1-difluoroethylene, and none with tetrachloroethylene and vinyl acetate. Liver fractions from humans converted vinyl chloride, vinyl bromide, vinylidene chloride and 2-chlorobutadiene into mutagens. In the plate incorporation assay, 1,4-dichlorobutene-2 was mutagenic per se, and addition of microsomal fractions from human or mouse liver enhanced the mutagenicity; a synthetic putative metabolite, 1,4-dichloro-2,3-epoxybutane was less mutagenic than the parent olefin in strain TA100. Treatment of rats with phenobarbital or 3-methylcholanthrene caused an up to 2-fold increase in the liver microsome-mediated mutagenicities of vinyl chloride and vinylidene chloride in *S. typhimurium* TA1530; while treatment with pregnenolone-16 α -carbonitrile, aminoacetonitrile or disulfiram decreased the mutagenic effects. Vinyl chloride, and probably vinyl bromide, were epoxidized by mouse-liver microsomes; volatile alkylating metabolites were trapped by reaction with excess 4-(4-nitrobenzyl)pyridine and analyzed spectrally. 2-Chlorobutadiene yielded an alkylating intermediate, but 1,1-difluoroethylene, 1,1-dichloroethylene and 1,1,2-trichloroethylene did not. 2-Chloro- and 1-chlorobutadiene, 3,4-dichlorobutene-1, 1,4-dichlorobutene-2 and its 2,3-epoxy derivative showed alkylating activity with 4-(4-nitrobenzyl)pyridine, which was not related quantitatively to mutagenic activity in *S. typhimurium* TA100 in the absence of a metabolic activation system. An oxidation of the double bond in certain halo-olefins, which is dependent on microsomal mono-oxygenases probably is a common pathway in the formation of biologically reactive intermediates. The relevance of the metabolites formed during such oxidative processes to the mutagenic, toxic and carcinogenic activities in vivo of some of the parent compounds is discussed.

Descriptors: MOUSE, SALMONELLA-TYPHIMURIUM TA-100 3 4 DI
CHLORO BUTENE 1 CHLORO BUTADIENE 2 CHLORO BUTADIENE VINYL
BROMIDE VINYLIDENE CHLORIDE VINYL CHLORIDE 1 1 2 TRI CHLORO
ETHYLENE 1 1 DI FLUORO ETHYLENE TETRA CHLORO ETHYLENE VINYL
ACETATE 1 4 DI CHLORO BUTENE 2 1 4 DI CHLORO-2 3-EPOXY BUTANE
1 1 DI CHLORO ETHYLENE METHYL CHOLANTHRENE 4-4 NITROBENZYL
PYRIDINE CARCINOGENS PHENO BARBITAL PREGNENOLONE 16-ALPHA

CARBONITRILE AMINO ACETONITRILE DISULFIRAM METABOLIC-DRUG

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010);
BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,A-
MINO ACID(10064); BIOCHEM STUD-PORPHYRINS,BILE PIGM(10065);
BIOCHEM STUD-STEROLS,STERIODS(10067); BIOPHYS-MOLECUL PROP,MA-
CROMOLEC(10506); ENZYMES-GEN,COMPAR STUD,COENZYMES(+10802);
ENZYMES-PHYSIOLOGICAL STUDIES(+10808); PHYSIOLOGY-COMPARATIVE-
(12003); PATHOLOGY-THERAPY(12512); METABOLISM-GENL STUD,METAB
PATHW(+13002); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004);
PHARMACOL-DRUG METAB,METAB STIMU(+22003); PHARMACOL-CLINICAL
PHARMACOL(22005); TOXICOL-GENL/EXP STUDS,METHS(+22501);
NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CA-
RCINOGENS(+24007); BACTERIAL AND VIRAL GENETICS(+31500);
MICROBIOLOG APPARAT,METHS,MEDIA(32000); IN VITRO STUDS-CELLUL-
R,SUBCELL(32600)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); HOMINIDAE(8-
6215); RODENTIA-UNSPECIFIED(86265); MURIDAE(86375)

68029773

ALKYLATION OF RNA BY VINYL BROMIDE METABOLITES IN-VITRO AND IN-VIVO

OTTENWAEELDER H; LAIB R J; BOLT H M
INST. TOXIKOL., UNIV. TUEB., WILHELMSTR. 56, D-7400
TUEBINGEN-1, W. GER.
ARCH TOXICOL 41 (4). 1979. 279-286. Coden: ARTOD
Language: ENGLISH

The suspected carcinogen [1,2-¹⁴C]vinyl bromide was incubated with rat liver microsomes, NADPH, and Poly-A acid, Poly-C acid or RNA, respectively. Part of the adenosine moieties in RNA or in Poly-A acid were alkylated and labeled 1,N6-ethenoadenosine structures were formed. Part of the cytidine moieties were converted into 3,N4-ethenocytidine. A further unidentified cytidine alkylation product was observed which was not seen in experiments using [1,2-¹⁴C]vinyl chloride. When rats were exposed to [1,2-¹⁴C]vinyl bromide, radioactive ethenoadenosine and ethenocytidine were present in hydrolysates of liver RNA. A further alkylation product was observed in the RNA hydrolysates which did not occur in experiments using [¹⁴C]vinyl chloride. Vinyl bromide metabolites apparently alkylate nucleic acids. Although in general in this respect vinyl bromide and vinyl chloride behave similarly, some differences are observed in their alkylation behavior.

Descriptors: RAT LIVER MICROSOME VINYL CHLORIDE CARCINOGENS
NADPH POLY ADENYLIC-ACID POLY CYTIDYLIC-ACID TREATMENT; 1 N-6
ETHENO ADENOSINE 3 N-4 ETHENO CYTIDINE FORMATION CARBON-14
LABELING

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION
BIOL-RADTN.ISOTOP TECH(06504); COMPARATIVE BIOCHEM-GENL
STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL
ACD,PURNS.PYRM(10062); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506);
ENZYMES-GEN,COMPAR STUD.COENZYMES(+10802); METABOLISM-GENL
STUD,METAB PATIIV(+13002); METABOLISM-NUCL ACD,PURINS,PYRM(+1-
3014); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004); TOXICOL-GENL/E-
XP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006);
NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); IN VITRO
STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

68025677

IN-VITRO EVALUATION OF HEMOLYTIC AND CELL CULTURE TOXICITY
POTENTIAL OF RESIDUAL ETHYLENE OXIDE IN SELECTED MEDICAL
MATERIALS

JONES A B
SCH. PHARM., UNIV. MISS., UNIVERSITY, MISS. 38677, USA.
J BIOMED MATER RES 13 (2). 1979. 207-216. Coden: JBMRB
Language: ENGLISH

The hemolytic potential of pure ethylene oxide (a sterilizing agent) in solution was evaluated as a function of initial ethylene oxide concentration in 3 test systems: diluted whole blood in isotonic saline, [human] erythrocytes washed and resuspended in isotonic saline and erythrocytes washed and resuspended in isotonic phosphate buffer. Concentrations of 2 mg/ml (2000 ppm) were necessary before

cell lysis was observed in either of the isotonic saline systems. This value increased to 10 mg/ml (10,000 ppm) in the isotonic buffer system. Efforts were made to correlate the hemolysis and [L929 mouse fibroblast] cell culture toxicity of residual ethylene oxide in 5 medical materials to the toxicity of pure ethylene oxide. Only materials exhibiting a low order of inherent toxicity showed any correlation. In poly(vinyl chloride) tubing containing 1.8 and 2.1 mg ethylene oxide/g of material, a small amount of toxicity was seen in the cell culture system but toxicity was absent in the hemolysis test.

Descriptors: HUMAN MOUSE L-929 FIBROBLAST CELL VINYL
CHLORIDE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); CYTOLOGY/C-
YTOCHEM-HUMAN(+02508); BIOCHEM STUD-GENERAL(10060); MINERALS(-
10069); ANATOMY/HISTOL-SURGERY(11105); BLOOD/BODY FLDS-GENL
STUDS,METHS(15001); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004);
BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006); BONE,JNTS,FASC,CONN-
/ADIP-GENL(18001); TOXICOL-GENL/EXP STUDS,METHS(+22501);
NEOPLSMS/NEOPL AGNTS-CELL LINE(24005); TISS CULTURE-APPARAT,M-
ETHS,MEDIA(32500); DISINFECTION,DISINFECTANTS,STERL(+39500)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

68024775

THE COMPARTMENTATION OF ETHYLENE IN DEVELOPING COTYLEDONS OF PHASEOLUS-VULGARIS

JERIE P H; SHAARI A R; HALL M A

IRRIG. RES. INST., TATURA, VICTORIA, AUST.

PLANTA (BERL) 144 (5). 1979. 503-508. Coden: PLANA

Language: ENGLISH

Isolated cotyledons of *P. vulgaris* L. cv. Canadian Wonder accumulated $^{14}\text{C}_2\text{H}_4$ (0.7-1 $\mu\text{mol l}^{-1}$) from air to give partition coefficients of 1-4, which greatly exceeded the value obtained with steam killed cotyledons (0.05) and with water (0.11). After $^{14}\text{C}_2\text{H}_4$ treatment 98% of the ^{14}C in the tissue remained as $^{14}\text{C}_2\text{H}_4$. The labeled ethylene accumulated by cotyledons was released only slowly (1-10% h^{-1}) either in an air stream or into toluene. Heating to 60 degree C for 2 h, but not freezing and thawing, caused the immediate release of $^{14}\text{C}_2\text{H}_4$ from the tissue. Propylene and vinyl chloride competitively inhibited the accumulation of $^{14}\text{C}_2\text{H}_4$. Cotyledons emanated endogenous ethylene at a very low rate but after heating (although not freezing and thawing) 13 nl of ethylene/g fresh mass were released within minutes. Apparently french bean cotyledons hold ethylene in a compartmented form in sufficient amount of account for at least 200 h of emanation.

Descriptors: CULTIVAR CANADIAN WONDER HEATING

Concept Codes: RADIATION BIOL-RADTN,ISOTOP TECH(06504); EXTERN EFF-HOT(10618); MOVEMENT(*12100); TEMPERATURE-GENL,MET-HS(23001); PLANT PHYSIOL-TEMPERATURE(51503); PLANT PHYSIOL-GROWTH,DIFFRENTIAT(*51510); PLANT PHYSIOL-GROWTH SUBSTANCES(*51514); PLANT PHYSIOL-TRANSLOC,ACCUMUL(*51520); HORTICULT-VEGETABLES(53008)

Biosystematic Codes: LEGUMINOSAE(26260)

68023092

MORTALITY EXPERIENCE OF WORKERS IN A VINYL CHLORIDE MONOMER PRODUCT PLANT

BUFFLER P A; WOOD S; EIFLER C; SUAREZ L; KILIAN D J

UNIV. TEX. SCH. PUBLIC HEALTH, P.O. BOX 20186, HOUSTON, TEX. 77025, USA.

J OCCUP MED 21 (3). 1979. 195-203. Coden: JOCMA

Language: ENGLISH

The evidence associating exposure to vinyl chloride with the risk of tumors of various sites, including lung cancer, is inconsistent. In 1976 a mortality follow-up study of 464 white males employed in a vinyl chloride monomer (VCM) production plant since 1948 was conducted. Vital status was ascertained for 100% of the cohort. Of the 28 deaths observed, 8 (28.5%) were due to malignant neoplasms. No angiosarcomas or other liver tumors were observed. A statistically significant excess was noted for malignant neoplasms of the respiratory system ($P = .03$). The effect of smoking, duration of exposure to VCM, level of exposure and the combined effect of duration and level of exposure were analyzed separately. A 5-yr latency requirement was maintained for all analyses except for the smoking analysis: Levels of exposure to VCM prior to 1971 were estimated from monitoring data available for the period

1971-1975 by extrapolating the relative levels for job classifications backwards in time. Smoking histories were not available for 27.6% of the cohort. When it was assumed that all "unknowns" smoked, a significant excess of respiratory cancer was still observed ($P = .05$). When the minimum latency period of 5 yr restricted analysis to the mortality experience after 5 yr from date of initial exposure to VCM for the 314 employees satisfying this criterion, the excess of respiratory cancer was moderate but not significant ($P = .06$). Both a longer duration and a higher level of exposure during the first 5 yr following the date of initial exposure were associated with a statistically significant excess of respiratory cancer ($P = .02$ and $.03$, respectively). When duration and level of exposure were combined in an overall exposure index, the results were not significant ($P = .07$). The discrepancy in the results from the dose-response analyses may be due to the potential error in the estimated levels and the small number of events observed, but the results suggest that a relationship exists between exposure to VCM and respiratory cancer.

Descriptors: CARCINOGEN RESPIRATORY CANCER LIVER TUMOR ANGIO SARCOMA SMOKING

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); SOCIAL BIOL/HUMAN ECOLOGY(05500); BEHAVIOR BIOL-HUMAN BEHAVIOR(07004); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); PATHOLOGY-NECROSIS(12-510); DIGESTIVE SYST-PATHOLOGY(*14006); CARDIOVASC SYST-BLD VESS PATHOL(*14508); RESPIRATORY SYST-PATHOLOGY(*16006); BONE,JNTS,FASC,CONN/ADIP-PATHOL(18006); PSYCHIATRY-ADDICTION(INC SMOKNG)(*21004); TOXICOL-GENL/EXP STUDS,METHS(*22501); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); PUB HEALTH-ADMINISTR,S-STATISTICS(37010); ENVIRON HEALTH-OCCUPATNL HEALTH(*37013); EPIDEMIOLOGIC DIS,NEOPLASMS(*37054); PLANT PHYSIOL-CHEM CONSTITUENTS(51522)

Biosystematic Codes: HOMINIDAE(86215)

68021333

RESISTANCE OF POLYMERIC CABLE COVERINGS TO SUBTERRANEAN TERMITE ATTACK AFTER 8 YEARS OF FIELD TESTING IN THE TROPICS

BEAL R H; BULTMAN J D
 FOR. SCI. LAB., SOUTH. FOR. EXP. STN., US FOR. SERV.,
 GULFPORT, MISS. 39503, USA.
 INT BIODETERIOR BULL 14 (4). 1978 (RECD. 1979). 123-127.
 Coden: IBDBA

Language: ENGLISH

Polymers (27) formulated to meet the requirements for cable sheathing material were exposed to subterranean termites at 2 field sites. Increasing hardness improved the resistance of polyvinyl chloride (PVC) plastics considerably, but increasing surface smoothness, specimen thickness or incorporating inert fillers had little or no effect. Ethylene-propylene rubber, chlorinated polyethylene and chlorosulfonated polyethylene were more resistant than PVC polymers of equal hardness.

Descriptors: POLY VINYL CHLORIDE PLASTICS ETHYLENE PROPYLENE RUBBER CHLORINATED POLY ETHYLENE CHLORO SULFONATED POLY ETHYLENE

Concept Codes: BIOCHEM STUD-GENERAL(10060); PEST CONTRL GENL/PESTICS/HERBICS(*54600); ECONOM ENTOMOL-GENL STUDS(*6000-2); ECONOM ENTOMOL-CHEM PHYS CONTRL(*60016)

Biosystematic Codes: ISOPTERA(75328)

68018482

PREPARATION OF DYNAMIC MIXTURE OF VINYL CHLORIDE AND AIR BY PERMEATION TUBE/

SODA R
 NATL. INST. IND. HEALTH, NAGAO 6-CHOME, TAMA, KAWASAKI,
 KANAGAWA 213, JPN.
 IND HEALTH 16 (1). 1978 (RECD. 1979). 29-40. Coden:
 INHEA

Language: ENGLISH

A method to construct a permeation tube of vinyl chloride was described. The constructed tube was held in a water jacket, temperature of which was controlled by circulating water from a thermo-regulated water bath, and a clean air diluent flew through the jacket to prepare air-gas mixture stream of known concentration. The concentration of vinyl chloride in the stream was determined gas chromatographically, and a fairly good linearity was observed between the calculated concentration and chromatographic peak height. An apparent activation energy of permeation was calculated from temperature dependency of permeation rate. [This is related to industrial health monitoring.]

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); ECOLOGY-BIOCLIMATOL, BIOMETEOROL(07504); BIOCHEM METH-GENERAL(-10050); BIOCHEM STUD-GENERAL(*10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(*10511); EXTERN EFF-TEMPERATURE(10614); MOVEMENT(12100); TOXICOL-ENVIRONMNTL, INDUSTR(*-22506); TEMPERATURE-GENL, METHS(23001); ENVIRON HEALTH-OCCUPATNL HEALTH(*37013); ENVIRON HEALTH-AIR, WATR, SL POLLN(37015)

68016571

POTENTIAL HALOGENATED INDUSTRIAL CARCINOGENIC AND MUTAGENIC CHEMICALS PART 1 HALOGENATED UNSATURATED HYDRO CARBONS FISHBEIN L

NATL. CENT. TOXICOL. RES., JEFFERSON, ARKANSAS 72079, USA.
 SCI TOTAL ENVIRON 11 (2). 1979. 111-162. Coden: STEVA
 Language: ENGLISH

The halogenated aliphatic hydrocarbons represent one of the most important categories of industrial chemicals from a consideration of use categories, production volume, environmental and toxicological considerations, and hence most importantly, potential population risk. The major unsaturated hydrocarbons reviewed, primarily in terms of their synthesis, utility, stability, distribution and levels of exposure as well as their reactivity, carcinogenicity, mutagenicity and metabolism, include: vinyl chloride, vinylidene chloride, trichloroethylene, perchloroethylene, chloroprene, trans-1,4-dichlorobutene, hexachlorobutadiene and allyl chloride.

Descriptors: VINYL CHLORIDE VINYLIDENE CHLORIDE TRI CHLORO ETHYLENE PER CHLORO ETHYLENE CHLOROPRENE TRANS-1 4 DI CHLORO BUTENE HEXA CHLORO BUTADIENE ALLYL CHLORIDE CARCINOGENS

Concept Codes: BIOCHEM METH-GENERAL(10050); BIOCHEM METH-MINERALS(10059); BIOCHEM STUD-GENERAL(10060); MINERALS(1-0069); BIOPHYS-MOLECUL PROP, MACROMOLEC(10506); TOXICOL-ENVIRONMNTL, INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*2400-7); ENVIRON HEALTH-OCCUPATNL HEALTH(*37013); ENVIRON HEALTH-AIR, WATR, SL POLLN(37015)

Biosystematic Codes: ANIMALIA-UNSPECIFIED(33000)

68015332

THE MUTAGENIC EFFECT OF 1 2 DI CHLORO ETHANE ON SALMONELLA-TYPHIMURIUM PART 2 ACTIVATION BY THE ISOLATED PERFUSED RAT LIVER

RANNUG U; BEIJE B
DIV. TOXICOL. GENET., UNIV. WALLENBERG LAB., STOCKH.,
STOCKHOLM, SWED.

CHEM-BIOL INTERACT 24 (3). 1979. 265-286. Coden: CBINA
Language: ENGLISH

S. typhimurium strains TA 1530 and TA 1535 were combined with isolated perfused rat liver. Samples of perfusate and bile produced were tested for mutagenicity after treatment with 1,2-dichloroethane (DCE), 1,2-dibromoethane (DBE) or 2-chloroethanol. The results are in good agreement with previous experiments which indicated that both DCE and DBE are activated through conjugation with glutathione (GSH). Most GSH conjugates are normally excreted in bile. Following liver perfusion the bile was highly mutagenic after DCE and DBE treatments, while 2-chloroethanol did not have this effect. The highest mutagenic effect was seen 15-30 min after the addition of DCE or DBE. The production of mutagenic bile also occurred in mice treated in vivo with DCE. One possible metabolic endproduct of a GSH conjugate is the corresponding mercapturic acid. Thus synthetic N-acetyl-S-(2-chloroethyl)-L-cysteine was tested on TA 1535 and was as mutagenic as S-(2-chloroethyl)-L-cysteine in the concentration range 0.2-0.6 $\mu\text{mol/plate}$. Differences and similarities in the metabolism of DCE and vinyl chloride are discussed on the basis of these results. Human applicability is implied.

Descriptors: TA-1530 TA-1535 STRAINS MOUSE HUMAN BILE VINYL CHLORIDE 1 2 DI BROMO ETHANE 2 CHLORO ETHANOL N ACETYL-S-2-CHLOROETHYL-L CYSTEINE S-2 CHLOROETHYL-L CYSTEINE GLUTATHIONE CONJUGATION EXCRETION METABOLISM

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); GENETICS/CYTOGENET-ANIMAL(+03506); GENETICS/CYTOGENET-HUMAN(+03508); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURINS,PYRM-(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); PATHOLOGY-COMPARATIVE(-12503); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM--NUCL ACD,PURINS,PYRIM(+13014); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004); BLOOD/BODY FLDS-OTHER BODY FLDS(15010); URIN SYST/EXT SECR-PHYSL,BIOCHEM(15504); TOXICOL-GENL/EXP STUDS,METHS(+2250-1); BACTERIAL AND VIRAL GENETICS(31500); MICROBIOLOG APPARAT,METHS,MEDIA(32000); TISS CULTURE-APPARAT,METHS,MEDIA(-32500); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); HOMINIDAE(8-6215); MURIDAE(86375)

Language: ENGLISH

The possible contamination of drinking water from water pipe materials was investigated. Polyurethane pipes leached chlorobenzene and aromatic compounds. Homogenous polyvinylchloride pipe leached low concentrations of 3 contaminants. Cast Fe pipes with asphalt or cement linings did not affect water quality.

Descriptors: CHLORO BENZENE AROMATICS POLY URETHANE POLY VINYL CHLORIDE

Concept Codes: ECOLOGY-LIMNOLOGY(+07514); ECOLOGY-WATR RESRCH,FISHERY BIOL(07517); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); BIOPHYS-BIOENGINEERING(10511); TOXICOL-ENVIR-ONMNTL,INDUSTRI(+22506); ENVIRON HEALTH-SEWG DISP,SANITAR(+370-14); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

68012012

THE LEACHING OF VOLATILE ORGANIC COMPOUNDS FROM DIFFERENT TYPES OF WATER PIPES

EKLUND G; JOSEFSSON B; ROOS C
DEP. ANAL. CHEM., CHALMERS UNIV. TECHNOL., FACK, S-402 20
GOTEBORG, SWED.

VATTEN 34 (3). 1978. 207-208. Coden: VTTNA

68011127

CHANGES IN CORTICO STEROID SYNTHESIS OF THE HUMAN ADRENAL CORTEX IN-VITRO INDUCED BY TREATMENT WITH O P DDD FOR CUSHINGS SYNDROME EVIDENCE FOR THE SITES OF ACTION OF THE DRUG

TOUITOU Y; BOGDAN A; LUTON J-P

BIOCHEM. DEP., FAC. MED. PITIE-SALPETRIERE, 91 BLVD. DE L' HOPITAL, 75634 PARIS, FR.

J STEROID BIOCHEM 9 (12), 1978 (RECD. 1979), 1217-1224.

Codon: JSTBB

Language: ENGLISH

The in vitro synthesis of cortisol, cortisone, corticosterone, 18-hydroxycorticosterone, aldosterone and 11-dehydrocorticosterone was studied in human adrenals removed from patients with Cushing's syndrome (adrenal adenomas, hyperplasias or carcinoma) treated or not with o,p'-DDD. A very significant fall occurred in the synthesis of cortisol (precursor: 11-deoxycortisol), corticosterone (precursor: 11-deoxycorticosterone), 18-hydroxycorticosterone and aldosterone (precursors: 11-deoxycorticosterone and corticosterone) in the adrenals resected from patients treated with o,p'-DDD, when compared with adrenals from untreated patients. In 1 patient with Cushing's syndrome, corticosteroidogenesis was studied on both adrenals. The 1st adrenal was removed after treatment with o,p'-DDD for a month (treated adrenal); the 2nd was removed 4 mo. later when the patient relapsed. No medical treatment was given during this period (control adrenal). Steroids synthesis (cortisol, corticosterone, 18-hydroxycorticosterone, aldosterone) was much lower (40-60%) in treated adrenal as compared to control adrenal. These results clearly establish the inhibitory effect of o,p'-DDD on 11-hydroxylase and 18-hydroxylase activities in human adrenals of treated subjects. In contrast, addition of o,p'-DDD (10-2 M), o,p'-DDE (10-2 M), p,p'-DDMU [2,2-bis(p-chlorophenyl)-2-chloroethylene] (10-2 M) and p,p'-DDOH [2,2-bis(p-chlorophenylethanol)] (2.1 times, 10-3 M) to incubation media had no effect on steroid synthesis.

Descriptors: 11 DEHYDRO CORTICO STERONE ALDO STERONE 18 HYDROXY CORTICO STERONE CORTISONE CORTICO STERONE CORTISOL

Concept Codes: CLIN BIOCHEM-GENL STUDIES(+10006); BIOCHEM STUD-STEROLS,STEROIDS(10067); ENZYMES-METHODS(+10804); ANATOMY/HISTOL-SURGERY(11105); PATHOLOGY-THERAPY(12512); METABOLISM-STEROLS,STEROIDS(+13008); METABOLISM-METABOLIC DISORDERS(+13020); ENDOCRINE SYST-ADRENALS(+17004); PHARMACOL-DRUG METAB,METAB STIMU(+22003); PHARMACOL-CLINICAL PHARMACOL(22005); PHARMACOL-ENDOCRINE SYST(+22016); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-THERAP,AGNT(+24008); TISS CULTURE-APPARAT,METHODS,MEDIA(32500); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: HOMINIDAE(86215)

68010176

ANGIO SARCOMA OF THE SPLEEN A REPORT OF 2 CASES AND REVIEW OF THE LITERATURE

CHEN K T K; BOLLES J C; GILBERT E F

DEP. PATHOL., FRESNO COMMUNITY HOSP., P.O. BOX 1232, FRESNO, CALIF. 93715 USA

ARCH PATHOL LAB MED 103 (3), 1979, 122-124, Codon: APLMA

Language: ENGLISH

Ultrastructural study of 1 of 2 cases of splenic angiosarcoma established the blood vessel origin of this tumor. Previously reported cases (53) were reviewed. None of the 55 patients had a history of exposure to thorium dioxide, vinyl chloride or As, which are known to be associated with hepatic angiosarcoma and other tumors. A comparison of the splenic and hepatic angiosarcomas showed that tumors not associated with exogenous material frequently involve the spleen and liver simultaneously. Tumors associated with thorium dioxide, vinyl chloride, or As commonly involve the liver with sparing of the spleen.

Descriptors: HUMAN LIVER INVOLVEMENT THORIUM DI OXIDE VINYL CHLORIDE ARSENIC CARCINOGENS

Concept Codes: RADIATION BIOL-RADTN EFF.PROTECT(+06506); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); ANATOMY/HISTOL--MICRO,ULTRAMICRSC(11108); PATHOLOGY-COMPARATIVE(12503); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-LYMPHAT TISS.RES(+15008); BONE,JNTS,FASC,CONN/ADIP-PATHOL(18006); PHARMACOL-GENERAL STUDIES(+22002); TOXICOL-GENL/EXP STUDS,METHODS(+22501); TOXICOL-PHARMACOLOGICAL(+22504); TOXICOL-ENVIRONMENTAL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); NEOPLSMS/NEOPL AGNTS-BLOOD,RES(+24010)

Biosystematic Codes: HOMINIDAE(86215)

68008217

PENETRATION OF DIFFERENT PACKING MATERIALS BY SOME STORED PRODUCT INSECTS

KHARE B P; SHUKLA R P

DEP. ENTOMOL., COLL. AGRIC., GOVIND BALLABH PANT UNIV. AGRIC. TECHINOL., PANTNAGAR, NAINITAL 263 145, U.P., INDIA.

INDIAN J AGRIC SCI 49 (2), 1979, 116-117, Codon: IJASA

Language: ENGLISH

Sitophilus oryzae (Linn.) and *Rhyzopertha dominica* (Fabr.) easily penetrate cloth bags. According to their resistance to penetration by both insects, packing materials are arranged in the order: polyvinyl chloride > polyethylene-lined gunny bags > polyethylene > laminated polyethylene > hessian cloth > muslin cloth > cotton cloth.

Descriptors: SITOPHILUS-ORYZAE RHYZOPERTHA-DOMINICA CLOTH POLY VINYL CHLORIDE POLY ETHYLENE LINED GUNNY BAGS MUSLIN COTTON

Concept Codes: BIOCHEM STUD-GENERAL(10060); FOOD TECH-GENL STUDS,METHODS(+13502); FOOD TECH-PREP,PROCESSNG,STORAGE(+13532); ECONOM ENTOMOL-STORED PRODUCTS(+60008); ECONOM ENTOMOL-CHEM PHYS CONTRI(+60016)

Biosystematic Codes: MALVACEAE(26330); COLEOPTERA(75304)

R&S 138490

68006117

VINYL CHLORIDE DISEASE IN BULGARIA

NOSKO M; PERNOV K; SPASOVSKI M

RES. INST. HYG. OCCUP. DIS., ACAD. MED., SOFIA, BULG.

KHIG ZDRAVEPAZ 20 (5). 1977 (RECD. 1978). 409-412.
Codon: KHZDA

Language: BULGARIAN

The concentrations of vinylchloride were followed from the beginning of vinylchloride production till now during its synthesis and polymerization. In 1965 they were 110 mg/m³ but since 1970 they were in the ranges of 12-240 mg/m³ (the threshold value is 30 mg/m³). Workers (137) were examined for neurologic status, changes in hemopoiesis and protein and enzymic function of liver. Ten cases of vinylchloride disease and 19 with single syndromes were discovered. The sick persons mainly worked at the polymerization of vinylchloride at the repair workshop with a length of service of 3-11 yr. Vegetative polyneuropathy and increased activity of gamma.-glutamyltranspeptidase were the leading signs. There were acro-osteolysis and thrombocytopenia in some patients. Medical prophylactic measures in respect to a 6 h working day, additional food without pay, preliminary and periodic examinations of the workers and suitable labor establishment of the same patients were suggested. An experiment is carried out to correct the threshold value concentration.

Descriptors: HUMAN NEUROPATHY ACRO OSTEOLYSIS
THROMBOCYTOPENIA GAMMA GLUTAMYL TRANS PEPTIDASE

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(02508); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); PATHOLOGY-DIAGNOSTIC(12504); NUTRITION-GENL, NUTR STATUS, METHS(13202); DIGESTIVE SYST-PHYSIOL, BIOCHEM(14004); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004); BLOOD/BODY FLDS-BLD, LYM, RES PATH(+15006); BONE, JNTS, FASC, CONN-/ADIP-PATHOL(+18006); NERVOUS SYST-PATHOLOGY(+20506); TOXICOL-ANTIDOTES, PREVENTIVE(+22505); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR, WATR, SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

of the modulation techniques used, the observed signal as a function of electric field is the 1st derivative of the absorption line profile, and the peak-to-peak intensity of the derivative is the measured analytical signal. The analytical curve is a straight line over several orders of magnitude in concentration. In all cases, ppm or sub-ppm concentrations of the gases in air and/or N are measured using a CO₂ laser. A discussion of interferences and selectivity of the technique are included.

Descriptors: VINYL CHLORIDE VINYLIDENE CHLORIDE
ACRYLONITRILE METHANOL STARK EFFECT

Concept Codes: RADIATION BIOL-RADTN, ISOTOP TECH(+06504); ECOLOGY-BIOCLIMATOL, BIOMETEOROL(+07504); BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP, MACROMOLEC(10506); EXTERN EFF-LIGHT, DARKNESS(10604); EXTERN EFF-ELECTR, MAGNET, GRAVITY(10610); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); ENVIRON HEALTH-AIR, WATR, SL POLLN(+37015)

68005568

AN APPLICATION OF IR LASERS TO THE SELECTIVE DETECTION OF TRACE ORGANIC GASES

SWEGER D M; TRAVIS J C

NATL. BUR. STAND., WASHINGTON, D.C. 20234, USA.

APPL SPECTROSC 33 (1). 1979. 46-51. Codon: APSPA

Language: ENGLISH

For molecules possessing a permanent electric dipole moment the Stark effect may be used to perturb the molecular energy levels and to tune some absorption lines into coincidence with fixed frequency lasers. The same perturbation may modulate the absorption and allow the use of sensitive AC detection techniques. Quantitative results for 4 organic gases of industrial importance [vinyl chloride, vinylidene chloride, acrylonitrile and methanol] are presented. All have overlapping absorption bands in the CO₂ laser region. Because

R&S 138491

68002762

LACK OF MUTAGENICITY OF 2 POSSIBLE METABOLITES OF HALOTHANE
WASKELL L

DEP. BIOCHEM., UNIV. CALIF., BERKELEY, CALIF. 97420, USA.

ANESTHESIOLOGY 50 (1). 1979. 9-12. Coden: ANESA

Language: ENGLISH

1,1-Difluoro-2-bromo-2-chloroethylene, a probable metabolite of halothane, was purified by preparative gas chromatography and tested for mutagenicity in the Salmonella/mammalian liver system developed by Ames et al. 1,1,1-Trifluoro-2-chloroethane which was isolated from the breath of rabbits anesthetized with halothane also was tested for mutagenicity in a similar manner. Both compounds were nonmutagenic in this bacteria system. Although no study has yet demonstrated that halothane or any of its metabolites is genetically active, unnecessary [human] occupational exposure to the drug should be avoided due to the possibility that future studies could reveal adverse effects secondary to halothane.

Descriptors: SALMONELLA MAMMALIAN LIVER MICROSOME HUMAN RABBIT 1 1 1 TRI FLUORO-2-CHLORO ETHANE 1 1 DI FLUORO-2-BROMO-2-CHLORO ETHYLENE GENERAL ANESTHETIC BREATH OCCUPATIONAL HAZARD GAS CHROMATOGRAPHY

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); GENETICS/CYTOGENET-ANIMAL(+03506); GENETICS/CYTOGENET-HUMAN(+03508); BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOPHYS-GENERAL BIOPHYS TECH(10504); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(13002); METABOLISM-NUCL ACD,PURINS,PYRIM(+13014); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004); RESPIRATORY SYST-PHYSIOL,BIOCHEM(16004); PHARMACOL-DRUG METAB,METAB STIMU(22003); PHARMACOL-CLINICAL PHARMACOL(22005); PHARMACOL-NEUROPHARMACOLOGY(22024); TOXICOL-GENL/EXP STUDS,METHS(22501); TOXICOL-PHARMACOLOGICAL(+22504); BACTERIAL AND VIRAL GENETICS(31500); MICROBIOLOG APPARAT,METHS,MEDIA(32000); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); MAMMALIA-UNSPECIFIED AND EXTING(85700); LEPORIDAE(86040); HOMINIDAE(86215)

procedures and sampling techniques are discussed, covering automatic operation in the field and discontinuous control by analyses performed in the laboratory. The efficiency of the overall procedure is illustrated by the results obtained during 2 pollution measuring campaigns, one performed in the neighborhood of a vinyl chloride plant and the other in an area with an intensive paint industry.

Descriptors: HYDRO CARBON CHLORINATED HYDRO CARBON AROMATICS
Concept Codes: ECOLOGY-BIOCLIMATOL,BIOMETEOROL(+07504); BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(+10504); MOVEMENT(12100); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

67074383

IN-VIVO TRAPPING OF A VINYL CHLORIDE METABOLITE BY MEANS OF
3 4 DI CHLORO BENZENETHIOL

MUELLER G; NORPOTH K; OWZARSKI W

INST. STAUBLUNGENFORSCH. ARBEITSMED.. WESTFAEL.

WILHELMS-UNIV., WESTRING 10, D-4400 MUENSTER, W. GER.

INT ARCH OCCUP ENVIRON HEALTH 42 (2). 1978 (RECD. 1979). 137-139. Coden: IAOIH

Language: ENGLISH

The successful trapping of a vinyl chloride metabolite and a metabolite of 2,2'-dichlorodithylether in a carcinogen detection test is reported. The reaction products are excreted as S-2 (3,4 dichlorothiophenyl) acetic acid in the urine of rats. This was confirmed by GC-MS [gas chromatography-mass spectrophotometry] measurements.

Descriptors: RAT URINARY EXCRETION CARCINOGEN GAS CHROMATOGRAPHY MASS SPECTROPHOTOMETRY

Concept Codes: BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(+13002); URIN SYST/EXT SECR-PHYSIOL,BIOCHEM(15504); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: MURIDAE(86375)

67076486

TRACING ORGANIC GASEOUS POLLUTANTS IN THE ATMOSPHERE THE GAS
CHROMATOGRAPHIC SURVEY OF VINYL CHLORIDE AND PAINT INDUSTRY

RYMEN T A A

CHEM. DEP., STUDIECENT. KERNENERG./CENT. ETUD. ENERG. NUCL.,
MOL, BELG.

INT J ENVIRON ANAL CHEM 6 (1). 1979. 1-24. Coden: IJEA

Language: ENGLISH

Low MW hydrocarbons, chlorinated hydrocarbons and aromatics are 3 groups of volatile organic chemicals that are widely used in industry and constitute a potential danger for the environment. Selective tracing of these pollutants in ambient air was performed with the aid of gas chromatography and flame ionization or electron capture detection, whichever yielded

67074352

GAS CHROMATOGRAPHIC STUDIES OF VINYL CHLORIDE IN AIR BY CATALYTIC HYDROGENATION TO ETHYL CHLORIDE

HENDIFAR A R; TIRGAN M R

CHEM. DEP., NATL. UNIV. IRAN, EVIN, TEHERAN, IRAN.

J CHROMATOGR 161. 1978. 119-126. Coden: JOCRA

Language: ENGLISH

To investigate the amount of the carcinogen vinyl chloride in air, the hydrogenation of vinyl chloride to ethyl chloride is used. This method of determination is preferable to the other methods because: (a) it proves that only vinyl chloride goes through hydrogenation by its displacement to the ethyl chloride peak in the chromatogram; (b) the actual amount of vinyl chloride can be obtained in the case of superimposed or interfering peaks (e.g., various gases contained in air samples), either by calculating the ethyl chloride peak area or by the reduction of the peak area in the region of the same retention time as the vinyl chloride peak in the related chromatogram. Various kinds of catalysts for hydrogenation purposes at temperatures ranging from -20 to 250 degree. have been used. Among the catalysts used; Pd gives the best results at low temperature.

Descriptors: CARCINOGEN PALLADIUM

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(+10060); MINERALS(10069); BIOPHYS-GENERAL BIOPHYS TECH(10504); EXTERN EFF-COLD(10616); EXTERN EFF-HOT(10618); MOVEMENT(12100); TOXICOL-ENVIRONMNTL.INDUSTR(+22506); TEMPERATURE-GENL.METHS(23001); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: CHORDATA-UNSPECIFIED(85000)

67073223

ADVANCES IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY VOL 8 FATE OF POLLUTANTS IN THE AIR AND WATER ENVIRONMENTS PART 2 CHEMICAL AND BIOLOGICAL FATE OF POLLUTANTS IN THE ENVIRONMENT SYMPOSIUM AT THE 165TH NATIONAL AMERICAN CHEMICAL SOCIETY MEETING IN THE ENVIRONMENTAL CHEMISTRY DIVISION PHILADELPHIA PENNSYLVANIA USA APRIL 1975

SUFFET I H

ADV ENVIRON SCI TECHNOL 1977 (RECD. 1978). 442. Coden: AESTC

Language: ENGLISH

The 2nd part of the treatise describes the fate of pollutants in air and water environments from local and global perspectives. The 1st section considers the chemical fate of pollutants in the atmosphere and includes papers on the formation and removal of SO₂ and oxidants, aerosol formation in photochemical systems, chloroethylene oxidation and the fate of B and P hydrides. This is followed by a section concerned with discussions on the biological fate and transformation of pollutants, radionuclides in aquatic environments, dynamics of phthalic acid esters and the effects of toxaphene on bone development and growth of fish. The remaining section is devoted to the chemical fate of pollutants in the water environment and includes

mechanisms affecting the fate of organic pollutants, fate of carcinogens, human exposure and interactions of humic substances with herbicides. Tables, references, diagrams and a subject index supplement the text and individual papers by contributing authors are indexed in BIORESEARCH INDEX.

Descriptors: BOOK FISH HUMAN SULFUR DI OXIDE CHLORO ETHYLENE BORON HYDRIDE PHOSPHORUS HYDRIDE RADIO NUCLEIDE PHTHALIC-ACID TOXAPHENE CARCINOGEN HUMIC SUBSTANCE HERBICIDE

Concept Codes: GENL BIOL-SYMPOSIA,PROCONGS,REVW(+00520); RADIATION BIOL-GENERAL STUDIES(06502); ECOLOGY-BIOCLIMATOL,BIOMETEOROL(+07504); ECOLOGY-ANIMAL(07508); ECOLOGY-OCEANOGRAPHY,LIMNOLOGY(+07510); ECOLOGY-LIMNOLOGY(+07514); BIOCHEM-GASES-(10012); BIOCHEM STUD-GENERAL(10060); EXTERN EFF-LIGHT,DARKNESS(10604); BONE,JNTS,FASC,CONN/ADIP-PHY,BCH(18004); TOXICOL-ENVIRONMNTL.INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(-24007); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015); ENVIRON HEALTH-RADIATION HEALTH(+37017); PLANT PHYSIOL-GROWTH SUBSTANCES(51514); AGRONOMY-WEEDS AND WEED CONTROL(52518); PEST CONTRL GENL/PESTICS/HERBICS(54600)

Biosystematic Codes: PISCES-UNSPECIFIED(85200); HOMINIDAE(8-6215)

67073194

SOME APPLICATIONS OF NONDISPERSIVE X-RAY FLUORESCENCE TO FORENSIC INVESTIGATIONS

CROPP P L; HURST F; WALLACE G; WHITEHEAD N E; MCCALLUM G J
CHEM. DIV., DEP. SCI. IND. RES., PETONE, N.Z.
N Z J SCI 21 (3), 1978 (RECD. 1979). 371-376. Coden:
NZJSA

Language: ENGLISH

Non-dispersive X-ray fluorescence has valuable forensic applications in New Zealand and includes identification of holes in heavily bloodstained material such as bullet holes with Pb or Cu content; matching of paint smears and cosmetic traces with their sources; analysis and sourcing of glass fragments and cannabis, and the identification of a charred object such as a fire accelerant from its Cr content. The high Cl content of 1 sample indicated that it burned in the presence of PVC [polyvinyl chloride]. The technique was used in 1 case where a fingerprint supposedly disappeared. This technique is versatile and non-destructive. It also provides spectral information.

Descriptors: BLOOD STAIN CANNABIS CHROMIUM LEAD COPPER PAINT COSMETIC GLASS FIRE ACCELERANT POLY VINYL CHLORIDE FINGER PRINT HUMAN NEW-ZEALAND

Concept Codes: GENL BIOL-FORENSIC SCIENCE(+00531); RADIATION BIOL-RADTN,ISOTOP TECH(+06504); BIOCHEM METH-GENERAL(10050); BIOCHEM METH-MINERALS(10059); BIOPHYS-GENERAL BIOPHYS TECH(+10504); EXTERN EFF-GENL STUD(10602); CHDROATE BODY REGNS-EXTREMITIES(11318); BLOOD/BODY FLDS-GENL STUDS,METHS(15-001)

Biosystematic Codes: CANNABIDACEAE(25738); HOMINIDAE(86215)

67071216

SYNTHESES OF DL SERINE AND OF PRECURSORS THEREOF GLYCOLALDEHYDE AND MASKED GLYCOLALDEHYDES/

BASSIGNANI L; BIANCINI B; BRANDT A; CACIAGLI V; BIANCHI G E;
RE L; ROSSODIVITA A; ZAPPELLI P
SNAMPROGETTI SOC. AZIONI, L. P. M., VIA ERCOLE RAMARINI 32,
MONTEROTONDO, ITALY.

CHEM BER 112 (1), 1979. 148-160. Coden: CHBERA

Language: ENGLISH

On treatment of vinyl chloride epoxide with(4) with water, of chloroethylene carbonate with aqueous bases, of vinyl acetate or ethyl vinyl ether with aqueous potassium chlorate and catalytic amounts of osmium tetroxide, glycolaldehyde was formed (scheme 1). The aldehyde 5 (not isolated), when submitted to the Zelinsky-Stadnikoff amino acid synthesis, afforded DL-serine in 70% yield. The latter method, when applied directly to the masked glycolaldehydes vinyl acetate epoxide, 1,1,2-triacetoxy ethane, chloroethylene carbonate and acetoxyethylene carbonate 2, 7, 9, 10, vinylene carbonate 2,5-dichlorodioxane or 2,5-diacetoxydioxane also gave DL-serine (yields 35-70%), whereas with 4 no serine formation could be detected (scheme 1).

Concept Codes: BIOCHEM METH-PROTNS,PEPTDS,AM AC(+10054); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(+10064)

67064277

EXPERIMENTAL STUDIES FOR CORRECTION OF THRESHOLD VALUES OF VINYL CHLORIDE

NOSKO M

SCI. INST. HYG. OCCUP. DIS., MED. ACAD., SOFIA, BULG.
KHIG ZDRAVEOPAZ 21 (4), 1978. 348-355. Coden: KHZDA
Language: BULGARIAN

An inhalation experiment was conducted with 2 concentrations of vinylchloride, 6.15 and 17.51 mg/m3, on white rats for 5 mo. Its action on liver functions and peripheral blood was examined in the experimental animals, pregnant ones and 3 offspring. Basic liver functions, enzymatic, excretory, dextoxic and metabolic, were disturbed. Dose-dependent response was found for the activity of .alpha.-GTP, clas. LAP, OKT (ornithine carbamyl transferase), GPT (alanine transaminase), GDH (glycerophosphate dehydrogenase), LDH (lactic dehydrogenase), bilirubin and indices of fat metabolism. Histologic studies revealed analogous changes. The changes in the blood vessels and parenchymatous dystrophy were more manifest at the higher concentration. A new temporary threshold value for vinylchloride in air at the working place of 0.06 mg .cntdot. m3 was proposed.

Descriptors: RAT DYSTROPHY ORNITHINE CARBAMYL TRANSFERASE ALANINE TRANS AMINASE GLYCERO PHOSPHATE DEHYDROGENASE LACTIC DEHYDROGENASE

Concept Codes: MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); ECOLOGY-LIMNOLOGY(07514); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-PORPHYRNS,BILE PIGM(10065); ENZYMES-GEN,COMPAR STUD,COENZYM(10802); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); METABOLISM-GENL STUD,METAB PATHW(13002); METABOLISM-LIPIDS(+13006); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14-004); CARDIOVASC SYST-PHYSIOL,BIOCHEM(14504); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(15002); RESPIRATORY SYST-GENL STUD,METHS(16001); REPRODUCT SYST-PHYSIOL,BIOCHEM(16504); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-ANTIDOTES,PREVENTIVE(22505); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); PEDIATRI-CS(25000); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

67063164

EFFECT OF VEHICLE ON PILOCARPINE INDUCED MIOSIS

SAARI M; KOSKELA P; MASAR S-E

UNIV. EYE HOSP., KAJAANINTIE 50, SF-90220 OULU 22, FINL.

ACTA OPHTHALMOL 56 (4), 1978, 496-503. Coden: ACOPA

Language: ENGLISH

To determine the effect of 1.4% polyvinyl alcohol (PVA) and castor oil vehicles on the pilocarpine-induced miosis, the miotic effect of 2% pilocarpine-PVA and oily drops on 4 young and 10 elderly people was studied and the miotic effect of 4% pilocarpine-PVA and oily drops on 13 elderly people was studied. The miosis developed fast within 15 min, and maximum miosis was reached within 1 h. Oily drops of pilocarpine induced stronger maximum miosis than corresponding PVA-drops. The pupil remained contracted to less than 50% of its starting diameter after pilocarpine-PVA drops for 3-4 h and after oily drops for 9 h and returned to its starting diameter after pilocarpine-PVA drops 9-10 h and after oily drops 20-24 h following administration. The difference in the effect between pilocarpine-PVA and oily drops was independent of the subjects' age.

Descriptors: AUTONOMIC-DRUG OPHTHALMIC-DRUG CASTOR OIL POLY VINYL CHLORIDE PHARMACEUTICAL-ADJUNCT AGE DIFFERENCE NEGATIVE
Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-LIPIDS(10066); METABOLISM-GENL STUD,METAB PATHW(13002); METABOLISM-LIPIDS(13006); MUSCLE SYST-PHYSIOL,BIOCHEM(+17504); SENSE ORGANS-PHYSIOL,BIOCHEM(+20004); NERVOUS SYST-PHYSIOL,BIOCHEM(20504); PHARMACOL-GENERAL STUDIES(+22002); PHARMACOL-DRUG METAB,METAB STIMU(22003); PHARMACOL-MUSCLE SYST(+22022); PHARMACOL-NEUROPHARMACOLOGY(+22024); PHARMACOL-SENSE ORGANS(+22031); DEVELOPMNTL BIOL-GEN MORPHGENSIS(25508); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); AGRONOMY-OIL CROPS(52514); PHARMACOGNOSY/PHARMACEUT BOTANY(54000)

Biosystematic Codes: EUPHORBIACEAE(26055); RUTACEAE(26685)

67062380

TEST USING POLY VINYL CHLORIDE BANDS WITH AN ADHESIVE LAYER FOR DIAGNOSING ENTEROBIASIS IN LENINGRAD USSR

BEREZANTSEV YU A; MEZHAZAKIS F I; LAVROVA P P

LENINGR. SANIT.-HYG. MED. INST., LENINGRAD, USSR.

MED PARAZITOL PARAZIT BOLEZNI 47 (4), 1978, 106-107.

Coden: MPPBA

Language: RUSSIAN

Data are presented from a 4-yr study of enterobiasis in children's nurseries and kindergartens in the Leningrad area (Russian SFSR, USSR). Use of a polyvinyl band with an adhesive strip was more effective than the perianal scrape in diagnosing the disease. More efficient diagnosis resulted in a decrease in enterobiasis cases.

Descriptors: CHILDREN PERI ANAL SCRAPE

Concept Codes: PATHOLOGY-DIAGNOSTIC(+12504); PATHOLOGY-THERAPY(12512); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PATHOLOGY(+14006); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); PEDIATRICS(25000); PUB HEALTH-ADMINISTR,STATISTICS(37010); EPIDEMIOLOG-COMMUNICABLE DISEASES(+37052); PARASITOLOGY-MEDICAL-

Biosystematic Codes: NEMATODA(51300); HUMANIDAE(86215)

67057845

THE SUITABILITY OF SIMULANTS FOR FOODSTUFFS COSMETICS AND PHARMACEUTICAL PRODUCTS IN MIGRATION STUDIES

FIGGE K; KOCH J; FREYTAG W

UNILEVER FORSCHUNGSGES., MBH, BEHRINGSTR. 154, 2000 HAMBURG 50, W. GER.

FOOD COSMET TOXICOL 16 (2), 1978, 135-142. Coden: FCTXA

Language: ENGLISH

In connection with the control of packaging materials for human use, a radiotracer technique is being used in migration studies designed to determine the best simulants for the most important foodstuffs and the test conditions of time and temperature most representative of the storage conditions used in practice for any given type of food. Several ¹⁴C-labeled plastics additives were synthesized. Incorporated into plastics compounds and compression-molded into test sheets. These sheets were stored for various periods in contact with selected food, pharmaceutical, hair-care and cosmetic products, as well as with food simulants proposed by the EEC authorities, at several different temperatures. The amounts of labeled additives migrating from rigid PVC [polyvinylchloride] into any of the products were very small. The level of migration from high-density polyethylene was generally much higher, particularly for the relatively small and volatile BHT [butylated hydroxytoluene] molecule, but results varied widely with different contact media. In comparative studies with BHT containing HD/PE [high density polyethylene] there was closer agreement of migration levels between the few fat-containing foods and the test fat than with the aqueous food simulants. For most of the pharmaceuticals and cosmetic products appropriate simulants must be identified.

Descriptors: HUMAN POLY VINYL CHLORIDE HIGH DENSITY POLY ETHYLENE BUTYLATED HYDROXY TOLUENE

Concept Codes: RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(+10060); BIOCHEM STUD-LIPIDS(10066); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); EXTERN EFF-TEMPERATURE(10614); MOVEMENT(12100); FOOD TECH-EVALNS PHYS,CHEM PROPS(13530); FOOD TECH-PREP,PROCESSNG,-STORAGE(+13532); INTEGUMENT SYST-GENL STUDS,METHS(18501); PHARMACOL-GENERAL STUDIES(+22002); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); TEMPERATURE-GENL,METHS(23001)

Biosystematic Codes: ORGANISMS-UNSPECIFIED(00500); HUMANIDA-E(86215)

67052552

EXPERIMENTAL STUDY ON NONTHROMBOGENIC LEFT HEART BYPASS

KINUGAWA N

DEP. SURG., OKAYAMA UNIV. MED. SCH., TSUSHIMA, OKAYAMA, JPN.
OKAYAMA IGAKKAI ZASSHI 89 (3-4), 1977 (RECD. 1978).
361-374. Coden: OIZAA

Language: JAPANESE

A new technique is described to facilitate descending thoracic aorta replacement [in hybrid dogs] without the use of anticoagulants. To eliminate the need of anticoagulants, tubes and cannulae are coated with nonthrombogenic polyurethane-polyvinyl-graphite (PPG). The left heart bypass using them can provide a dry operative field. No significant changes were observed in clotting time and prothrombin time during this nonthrombogenic left heart bypass. Under scanning electron microscopy the majority of platelets were solitarily dispersed and a few platelets were aggregated to each other on the PPG-coated tube. They were uniformly spherical or spheroidal with short spiny projections and long pseudopods. Platelet aggregations were present but metamorphoses of the platelets and fibrin net formation were not observed. These findings of PPG-coated tubes were similar to those of uncoated polyvinyl chloride tubes in heparinized left heart bypass. PPG-coated tube showed a tendency to depress platelet transformation in the early stage of thrombus formation. Neither silicone tubes nor uncoated polyvinyl chloride tubes prevented platelet transformation.

Descriptors: DOG POLY VINYL CHLORIDE POLY URETHANE POLY VINYL GRAPHITE HEPARIN ANTICOAGULANT SILICONE TUBE FIBRIN NET CLOTTING TIME PROTHROMBIN TIME PLATELET AGGREGATION SCANNING ELECTRON MICROSCOPY

Concept Codes: ELECTRON MICROSCOPY(01058); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); MINERALS(10069); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MEMBRANE PHENOMENA(10508); ANATOMY/HISTOL-SURGERY(11105); ANATOMY/HISTOL-MICRO, ULTRAMICRSC(11108); PATHOLOGY-THERAPY(12512); CARDIOVASC SYST-GENL STUDS, METHS(+14501); CARDIOVASC SYST-HEART PATHOLOGY(+14506); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(+15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004)

Biosystematic Codes: CANIDAE(85765)

67052534

FLEXIBLE VALINOMYCIN ELECTRODES FOR ON-LINE DETERMINATION OF INTRA VASCULAR AND MYO CARDIAL POTASSIUM IONS

HILL J L; GETTES L S; LYNCH M R; HEBERT N C

DEP. MED., UNIV. KY. COLL. MED., LEXINGTON, KY. 40506, USA.
AM J PHYSIOL 235 (4), 1978, H455-H459. Coden: AJPHIA

Language: ENGLISH

Flexible electrode systems capable of monitoring in vivo changes in venous and myocardial extracellular potassium activity were constructed using valinomycin-polyvinyl chloride matrix membrane and polyvinyl chloride tubing. Electrode impedance was 1-30 M.OMEGA., time constant 10-200 ms, drift < 1 mV/h, and shelf life approx. 3 days (intramyocardial electrode) and approx. 6 wk (venous electrode). In vitro and

in vivo accuracy were determined in 5 dogs and 18 pigs, anesthetized with sodium pentobarbital (35 mg/kg i.v.), with normal and elevated K⁺ levels. Serum and venous K⁺ concentration, determined using a K⁺ electrode with tip diameter of 1.5 mm, correlated well to serum K⁺ values determined by flame photometry (r [correlation coefficient] = 0.997). Steady-state myocardial extracellular K⁺ concentration determined using double-barrel electrodes with total tip diameter of 0.6 mm correlated well to the serum K⁺ concentration (r = 0.992). These electrode assemblies permit on-line, virtually instantaneous in vivo determination of intravascular and local myocardial extracellular K⁺ activity, a capability not previously available.

Descriptors: DOG PIG POLY VINYL CHLORIDE SODIUM PENTO BARBITOL CENTRAL DEPRESSANT GENERAL ANESTHETIC

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); MATHEMATIC BIOL/STATISTIC METH(04500); BIOCHEM METH-MINERALS(10059); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MEMBRANE PHENOMENA(+10508); MINERALS(+13010); CARDIOVASC SYST-GENL STUDS, METHS(+14501); CARDIOVASC SYST-PHYSIOL, BIOCHEM(+14504); BLOOD/BODY FLDS-GENL STUDS, METHS(15001); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(15002); MUSCLE SYST-GENL STUDS, METHS(17501); MUSCLE SYST-PHYSIOL, BIOCHEM(17504); NERVOUS SYST-GENL STUDS, METHS(20501); PHARMACOL-N-EUROPHARMACOLOGY(22024); IN VITRO STUDS-CELLULR, SUBCELL(32600)

Biosystematic Codes: SUIDAE(85740); CANIDAE(85765)

67052097

INVESTIGATION OF LIPID MEMBRANES WITH STABILIZER PART 1 FORMATION AND PROPERTIES OF STABILIZED LIPID MEMBRANES

SHCHIPUNOV YU A; PRYAZHEVSKAYA I S

INST. CHEM., FAR-EAST-SCI. CENT., ACAD. SCI. USSR, PR 100 LET VLADIVOSTOKY 159, VLADIVOSTOK 22, USSR.

STUD BIOPHYS 71 (3), 1978, 151-161. Coden: STBIB

Language: RUSSIAN

The formation and properties of bilayer lipid membranes with stabilizers are described. If a linear polystyrene is incorporated into a bilayer lipid membrane formed from fatty monoglycerides, the lifetime increases 10-15 times and the breakdown voltage increases 2-3 times. Polyvinyl chloride and wax were also used for membrane stabilization. The following mixtures were used as solvents: methyl-caproate with n-decane, dioxane with n-decane and chloroform with n-decane.

Descriptors: LINEAR POLY STYRENE WAX POLY VINYL CHLORIDE

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-LIPIDS(+10066); BIOPHYS-MEMBRANE PHENOMENA(+10508)

67051411

GAS CHROMATOGRAPHIC DETERMINATION OF 1,1,1-TRICHLOROETHANE IN VINYL CHLORIDE POLYMERS AND IN FOODS

GILBERT J; STARTIN J R; WALLWORK M A
 FOOD SCI. DIV., MINIST. AGRIC. FISH. FOOD. HALDIN HOUSE,
 QUEEN ST., NORWICH NR2 4SX, NORFOLK, ENGL., UK.
 J CHROMATOGR 160 (1). 1978. 127-132. Coden: JOCRA
 Language: ENGLISH

A gas chromatographic method is described for the quantification of levels of 1,1,1-trichloroethane in vinyl chloride polymer resins and in poly(vinyl chloride) (PVC) bottles used in the packaging of foods. By application of electron-capture detection the method can be extended to foods which were stored in PVC bottles and 1,1,1-trichloroethane can be estimated with a limit of detection in the foodstuff of between 0.002-0.01 ppm, depending on the food. The results of a small survey of the amounts of this compound in PVC bottles and foodstuffs purchased from retail outlets are reported.

Descriptors: PACKAGING ELECTRON CAPTURE DETECTION

Concept Codes: BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); FOOD TECH-GENL STUDS.METHS(+13502); FOOD TECH-EVALNS PHYS.CHEM PROPS(+13530); FOOD TECH-PREP.PROCESSNG-STORAGE(+13532); TOXICOL-FOOD.RESIDS.ADDIT.PRESRV(+22502); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(24007)

67046041

SURFACE MORPHOLOGY OF POLY VINYL CHLORIDE AND SILICONE ELASTOMER UMBILICAL ARTERY CATHETERS BY SCANNING ELECTRON MICROSCOPY

CLAWSON C C; BOROS S J
 CHILD. HOSP., 311 PLEASANT AVE., ST. PAUL, MINN. 55102, USA.
 PEDIATRICS 62 (5). 1978. 702-705. Coden: PEDIA
 Language: ENGLISH

The surface features of a new silicone elastomer umbilical artery catheter were defined by scanning electron microscopy and compared with those of a standard polyvinyl chloride catheter. Little difference was noted in the surfaces of the catheter materials themselves, but the radiopaque material used to render the catheters visible by X-ray resulted in a considerable difference in the overall smoothness. The polyvinyl chloride catheter's marker was in the form of a wide, rough band extending the length of the tubing whereas the marker particles of the silicone elastomer were dispersed, more uniform in size and resulted in less overall irregularity of the surface.

Descriptors: X-RAY

Concept Codes: PHOTOGRAPHY-METHS.MATLS.APPARAT(01012); ELECTRON MICROSCOPY(01058); RADIATION BIOL-RADN.ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(+10060); MINERALS(+10069); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(+10511); ANATOMY/HISTOL-RADIOLOGIC(11106); ANATOMY/HISTOL-MICR-O.ULTRAMICRSC(+11108); CARDIOVASC SYST-GENL STUDS.METHS(+1450-1)

67039995

EFFECTS OF VINYL CHLORIDE EXPOSURE ALONE AND IN COMBINATION WITH TRY PAN BLUE APPLIED SYSTEMATICALLY DURING ALL THIRDS OF PREGNANCY ON THE FETUSES OF CFY RATS

UNGVARY G; HUDAK A; TATRAI E; LORINCZ M; FOLLY G
 DEP. EXP. PATHOL. CHEM., STATE INST. OCCUP. HEALTH, P.O. BOX 22, H-1450, BUDAPEST, HUNG.
 TOXICOLOGY 11 (1). 1978. 45-54. Coden: TXYA
 Language: ENGLISH

Vinyl chloride (VC) is present in the fetal and maternal blood and in the amniotic fluid after the exposition of pregnant CFY rats to VC at an atmospheric concentration of 5500, 18,000 or 33,000 mg/m³ (apprx. 2000, 7000 or 12,000 ppm) for 2.5 h on the 18th day of pregnancy, indicating the permeability of the placenta to the agent. Teratological investigation of the offspring of pregnant rats exposed continuously to VC at an atmospheric concentration of 4000 mg/m³ air (1500 ppm) during the 1st, 2nd or last 3rd of pregnancy showed that VC has no teratological effect in the rat and has no embryotoxic effects either, when applied during the 2nd or last 3rd of pregnancy in the above concentration. Exposition to VC during the 1st third of pregnancy resulted in an increased fetal mortality and in the manifestation of embryotoxic effects. Fetal losses and induction of CNS malformation due to trypan blue administration were not potentiated by a combined exposure of pregnant rats to VC and the dye.

Descriptors: TERATOGEN CENTRAL NERVOUS SYSTEM MALFORMATION MORTALITY

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOPHYS-MEMBRANE PHENOMENA(10508); MOVEMENT(12100); PATHOLOGY-NECROSIS(12510); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(15002); BLOOD/BODY FLDS-OTHER BODY FLDS(15010); RESPIRATORY SYST-GENL STUD.METHS(16001); REPRODUCT SYST-PHYSIOL.BIOCHEM(16504); NERVOUS SYST-PATHOLOGY-(20506); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL-/EXP STUDS.METHS(+22501); TOXICOL-ENVIRONMNTL.INDUSTR(22506); DEVELOPMNTL BIOL-PATHOLOGICAL(25503); DEVELOPMNTL BIOL-EXPER TERATOL(+25554)

Biosystematic Codes: MURIDAE(86375); BIOSIS INTERNAL USE(97000)

67038481

INFLUENCE OF ORGANIC TIN STABILIZER FOR POLY VINYL CHLORIDE
ADVASTAB MOL-17 ON SOME BIOCHEMICAL AND MORPHOLOGICAL INDICES
UNDER EXPERIMENTAL CONDITIONS

RADEVA M; BOROV B; KRISTEV L; ANGELIEVA R
INST. HYG. OCCUP. DIS., ACAD. MED., SOFIA, BULG.
KHIG ZDRAVEOPAZ 20 (5). 1977 (RECD 1978) 437-442.
Codon: KHZDA

Language: BULGARIAN

White female rats, weighing 150-160 g. were treated with the organic tin compound Advastab Mol 17 in a dose of 220 mg/kg orally. The following were studied on the 6th h, 24th h, 4th day, 10th day and 20th day: the activities of glutamic oxalacetic transaminase [GOT], glutamic pyruvic transaminase [GPT], alkaline phosphatase [AP], succinic dehydrogenase [SDH], glutamic dehydrogenase [GLDH], catalase and the amount of soluble protein in liver; the activity of the same enzymes without catalase in blood serum; the amount of Sm in liver, kidney, spleen and myocardium; and pathomorphologic changes in internal organs. They found toxic damage of liver, most manifested on the 24th h, presenting an increased activity of AP and lower activity of catalase and GPT. There was an increased activity of the enzymes AP and GPT in blood serum. The activity of AP was altered mostly and permanently. Pathomorphologic examination revealed acute venous stasis and dystrophic changes, presenting the type of parenchymatous and vacuolar dystrophy. They were mostly manifested on the 24th h after administration of the substance. There were high concentrations of Sm in all examined organs, especially in liver and kidney 6 h after administration of the compound. The amount of Sm in liver, kidney, spleen and myocardium at this stage were, respectively, 189, 418, 152 and 170 times higher than that of the control animals.

Descriptors: RAT LIVER DAMAGE KIDNEY SPLFEN MYO CARDIUM
BLOOD SERUM GLUTAMIC PYRUVIC TRANS AMINASE GLUTAMIC OXAL
ACETIC TRANS AMINASE ALKALINE PHOSPHATASE SUCCINIC
DEHYDROGENASE GLUTAMIC DEHYDROGENASE CATALASE VENOUS STASIS
PROTEIN

Concept Codes: BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO
ACID(10064); BIOCHEM STUD-PORPHYRINS, BILE PIGM(10065);
MINERALS(10069); ENZYMES-PHYSIOLOGICAL STUDIES(+10808);
PHYSIOLOGY-GENERAL STUDIES(+12002); MINERALS(+13010); METABOL-
ISM-PROTNS, PEPTDS, AM ACDS(13012); DIGESTIVE SYST-PATHIOLOGY(+1-
4006); CARDIOVASC SYST-PHYSIOL, BIOCHEM(14504); CARDIOVASC
SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-BLOOD, LYMPH
STUD(15002); BLOOD/BODY FLDS-LYMPHAT TISS, RES(15008); URIN
SYST/EXT SECR-PHYSL, BIOCHEM(15504); DENTAL/ORAL BIOL-GENL
STUD, METHS(19001); ROUTES OF IMMUNIZ, INFECT, THERAP(22100);
TOXICOL-GENL/EXP STUDS, METHS(+22501)

Biosystematic Codes: MURIDAE(86375)

LAB. POLYM., MOSC. TECHNOL. INST. MEAT DAIRY IND., MOSCOW,
USSR.

VOPR PITAN (3). 1978 72-74. Codon: VPITA

Language: RUSSIAN

A technology was developed for obtaining coatings based on aqueous dispersions of BXBD-65 (a copolymer of vinyl and vinylidenechloride) and butyl rubber which possess physico-chemical properties required to ensure biochemical processes attending maturing of cheese. GLC showed that the diffusion of the solvent remnants occurs only in the layer of the cheese in immediate contact with its coating and in amounts below the permissible concentration. Vinylchloride was absent in the coating and in the cheese enclosed in the coating.

Descriptors: BXBD-65 VINYL CHLORIDE VINYLIDENE CHLORIDE
BUTYL RUBBER

Concept Codes: BIOCHEM METH-GENERAL(10050); BIOCHEM
STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504);
MOVEMENT(12100); FOOD TECH-DAIRY PRODUCTS(+13518); FOOD
TECH-PREP, PROCESSNG, STORAGE(+13532); TOXICOL-GENL/EXP STUDS, M-
ETHS(+22501); TOXICOL-FOOD, RESIDS, ADDIT, PRESRV(+22502); TOXIC-
OL-ENVIRONMNTL, INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGE-
NS(24007)

Biosystematic Codes: MAMMALIA-UNSPECIFIED AND EXTINCT(85700)

67038433

GAS LIQUID CHROMATOGRAPHY INVESTIGATION OF MIGRATION INTO
CHEESE OF VOLATILE COMPONENTS OF COATINGS BASED ON AQUEOUS
POLYMER DISPERSIONS

TARASOVA N A; SNEZHKO A G; DONTSOVA E P; VENEDIKTOVA L V

67038416

ESTABLISHING A PROTOCOL FROM LABORATORY STUDIES TO BE USED IN FIELD SAMPLING OPERATIONS

GROTE A A; KIM W S; KUPEL R E
PUBLIC HEALTH SERV., DIV. PHYS. SCI. ENG., NATL. INST.
OCCUP. SAF. HEALTH, CINCINNATI, OHIO 45226, USA.
AM IND HYG ASSOC J 39 (11). 1978 880-884. Coden: AIHAA
Language: ENGLISH

A laboratory procedure is described that was used in determining the breakdown products of plastic compounds used in injection molding operations. These compounds include polyvinyl chloride, polystyrene, acrylonitrile-butadiene-styrene, methyl methacrylate, polyethylene, polypropylene and nylon [occupational hazards to humans]. Laboratory samples were generated at injection molding temperatures and collected on various solid sorbents. Detector tubes were used for qualitative information to indicate whether certain classes of compounds were present. Compounds identified from the analyses of these laboratory samples are listed. Qualitative gas chromatography-mass spectrometry (GC/MS) data obtained from charcoal tube samples collected at a tire molding and a rubber producing company are also presented.

Descriptors: HUMAN POLY VINYL CHLORIDE POLY STYRENE ACRYLONITRILE BUTADIENE STYRENE METHYL METHACRYLATE POLY ETHYLENE POLY PROPYLENE NYLON OCCUPATIONAL HAZARD

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); EXTERN EFF-TEMPERATURE(10614); MOVEMENT(12100); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); TEMPERATURE-GENL,METHS(23001); PUB HEALTH-LAB METHS(+37006); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,W-ATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

67036486

HEPATIC ANGIO SARCOMA DUE TO VINYL CHLORIDE REPORT OF 4 CASES

ROCHE J; FOURNET J; HOSTEIN J; PANH M; BONNET-EYMARD J
CLIN. HEPATOL.-GASTROENTEROL., CENT. HOSP. UNIV. GRENOBLE, F
38700 LA TRONCHE, FR.
GASTROENTEROL CLIN BIOL 2 (8-9). 1978 669-678. Coden:
GCBID

Language: FRENCH

Four cases of angiosarcoma of the liver occurring in workers exposed to vinyl chloride are reported. From the study of these 4 patients and that of 37 patients reported in the literature, the clinical, biochemical and histological features of vinyl chloride-associated angiosarcoma of the liver are outlined. The main clinical finding is hepatomegaly. The diagnostic value of hepatic arteriography and the frequent occurrence of hemoperitoneum are stressed. The responsibility of vinyl chloride for the development of hepatic angiosarcoma is discussed.

Descriptors: HUMAN CARCINOGEN BIOCHEMICAL FEATURES OCCUPATIONAL EXPOSURE HEPATIC ARTERIOGRAPHY HEMOPERITONEUM

DIAGNOSIS

Concept Codes: PHOTOGRAPHY-METHS,MATLS,APPARAT(01012); MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); SOCIAL BIOL/HUMAN ECOLOGY(05500); RADIATION BIOL-RADTN,ISOTOP TECH(+06504); BIOCHEM STUD-GENERAL(10060); ANATOMY/HISTOL-RADIOLOGIC(11106); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); CHORDATE BODY REGNS-ABDOMEN(11314); PATHOLOGY-DIAGNOSTIC(12504); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BONE,JNTS,FASC,CONN/ADIP-GENL(18001); BONE,JNTS,FASC,CONN/ADIP-PATHOL(18006); COELOM MEMBRANES,MESENTERIES,ETC(18200); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-DIAGNS METH(+24001); NEOPLSMS/NEOPL AGNTS-PATH,CLINIC(+24004); NEOPLSMS/NEOPL AGNTS-BIOCHEM(24006); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215)

67036305

INTERACTIONS OF VINYL CHLORIDE WITH RAT LIVER DNA IN-VIVO

GREEN T; HATHWAY D E
CENT. TOXICOL. LAB., IMP. CHEM. IND. LTD., ALDERLEY PARK,
CHESHIRE SK10 4TJ, ENGL., UK.

CHEM-BIOL INTERACT 22 (2-3). 1978 211-224. Coden: CBINA
Language: ENGLISH

9.beta.-D-2'-Deoxyribofuranosyl-imidazo-[2,1-i]purine
("etheno-deoxyadenosine") and 1.beta.-D-2'-deoxyribofuranosyl-
-1,2-dihydro-2-oxo-imidazo-[1,2-c]-pyrimidine
("etheno-deoxycytidine") are identified in the enzyme
hydrolysates obtained from calf-thymus DNA which had been
modified by chemical reaction with chloroacetaldehyde and from
liver DNA prepared from rats which had been exposed orally to
vinyl chloride in their drinking water (250 ppm) for
approximately 2 yr. Vinyl chloride-derived chloroethylene
oxide and/or chloroacetaldehyde behaves as a bifunctional
alkylating agent towards deoxyadenosine and deoxycytidine
residues of DNA. The separation of deoxyribonucleosides and
the 2 etheno-deoxyribosyl-nucleosides by liquid
chromatography, and the mass spectra of etheno-deoxyadenosine
and etheno-deoxycytidine and of their O-bis-(trimethylsilyl)
derivatives are described. In the animal experiment, the
resulting proportion of etheno-deoxyadenosine is small
compared with that of etheno-deoxycytidine. Imidazo[2,1-i]pur-
ine (etheno-denine) is identified in the supernatant after
sedimentation of the modified DNA in the model experiment, and
in the product resulting from the reaction between
chloroacetaldehyde and deoxyadenosine. The effect on the
structure of DNA of the imidazo-cyclization of deoxyadenosine
and deoxycytidine residues and of the depurination of
etheno-deoxyadenosine residues is discussed in relation to
vinyl chloride oncogenicity.

Descriptors: ETHENO ADENINE ETHENODEOXY CYTIDINE ETHENODEOXY
ADENOSINE CALF THYMUS DNA CHLORO ACETALDEHYDE CHLORO ETHYLENE
OXIDE IMIDAZO CYCLIZATION MASS SPECTRA CARCINOGEN LIQUID
CHROMATOGRAPHY MASS SPECTRA

Concept Codes: BIOCHEM-PHYSIOLOGI WATER STUD(10011); BIOCHEM
METH-GENERAL(10050); BIOCHEM METH-NUCL ACD,PURNS,PYRM(10052);
BIOCHEM METH-PROTNS,PEPTDS,AM AC(10054); BIOCHEM STUD-NUCL
ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO
ACD(10064); BIOPHYS-GENERAL BIOPHYS TECH(10504); ENZYMES-METH-
ODS(10804); MOVEMENT(12100); METABOLISM-GENL STUD,METAB
PATHW(+13002); METABOLISM-NUCL ACD,PURINS,PYRIM(+13014);
DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004); ENDOCRINE SYST-THYMUS-
(17016); DENTAL/ORAL BIOL-GENL STUD,METHS(19001); ROUTES OF
IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+2-
2501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); PEDIATRICS(2-
5000)

Biosystematic Codes: BOVIDAE(85715); MURIDAE(86375)

67035050

MUTAGENICITY OF DICHLORVOS AND OTHER STRUCTURALLY RELATED
PESTICIDES IN SALMONELLA-TYPHIMURIUM AND STREPTOMYCES-COELICO-
LOR

CABRE A; ORTALI V A; CARBAMONE C; MARRASCO C

IST. SUPER. SANITA ORTO BOT., UNIV. ROMA, ROMA, ITALY.

CHEM-BIOL INTERACT 22 (2-3). 1978 297-308. Coden: CBINA
Language: ENGLISH

Twelve pesticides (azinphosmethyl, diallate, dichlorvos,
EPTC [ethyl N,N-dipropylthiolcarbamate], fenchlorphos,
mevinphos, monocrotophos, noruron, parathionmethyl, triallate,
trichlorfon and vegadex) were tested for the ability to induce
his+ revertants in 4 histidine-requiring strains of *S.*
typhimurium (TAI 535 (missense), TAI 536, TAI 537 and TAI 538
(frame-shift)) and resistance to low levels of streptomycin in
S. coelicolor. Dichlorvos, which is a phosphoric ester with a
dichlorovinyl group as side chain, and trichlorfon, which is
known for its spontaneous conversion in dichlorvos, are both
mutagenic in *S. typhimurium* (strain TAI 535) and *S.*
coelicolor. Five organophosphorus pesticides similar to
dichlorvos but devoid of the vinyl group are not mutagenic.
Three carbamates (diallate, triallate and vegadex), which
contain a chloroallyl group similar to the vinyl group of
dichlorvos, are mutagenic in *S. coelicolor*. Triallate and
vegadex are powerful mutagens in *S. typhimurium* (strain TAI
535); 2 other carbamates devoid of the chlorinated group are
not mutagenic. The presence of a vinyl chloride or allyl
chloride group in the molecule of these pesticides apparently
is responsible for the ability to induce point mutations in *S.*
typhimurium strains and *S. coelicolor*. Other organisms may be
similarly affected.

Descriptors: TAI-535 TAI-536 TAI-537 TAI-538 STRAINS
ORGANISM STREPTOMYCIN AZINPHOS-METHYL DIALLATE ETHYL-N N-DI
PROPYL THIO CARBAMATE FENCHLORPHOS MEVINPHOS MONOCROTAPHOS
NORURON PARATHION-METHYL TRIALLATE TRICHLORFON VEGADEX VINYL
GROUP ALLYL GROUP HISTIDINE

Concept Codes: GENETICS/CYTOGENET-GENL STUDIES(+03502);
BIOCHEM STUD-GENERAL(+10060); BIOCHEM STUD-PROTEINS,PEPTIDES,-
AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-MOL-
ECUL PROP,MACROMOLEC(+10506); PHARMACOL-GENERAL STUDIES(+2200-
2); TOXICOL-GENL/EXP STUDS,METHS(+22501); BACTERIAL AND VIRAL
GENETICS(+31500); CHEMOTHERAPY-GEN STUD,METH,METAB(38502);
PEST CONTRL GENL/PESTICS/HERBICS(+54600); ECONOM ENTOMOL-CHEM
PHYS CONTRL(60016)

Biosystematic Codes: ORGANISMS-UNSPECIFIED(00500); ENTEROBA-
CTERACEAE(04810); STREPTOCOCCACEAE(05514); ABSTRACTS OF
ENTOMOLOGY(96000)

67034380

PENETRATION OF 7 COMMON FLEXIBLE PACKAGING MATERIALS BY LARVAE AND ADULTS OF 11 SPECIES OF STORED PRODUCT INSECTS

CLINE L D

STORED-PROD. INSECTS RES. DEV. LAB., US FED. RES., SCI. EDUC. ADM., SAVANNAH, GA. 31403, USA.

J ECON ENTOMOL 71 (5). 1978 726-729. Coden: JEENA

Language: ENGLISH

The ability of larvae to penetrate flexible packaging materials was determined for large and small larvae of 11 spp. of stored-product insects. These insects were confined individually, with or without food, in small pouches made of cellophane, polyethylene, paper, polyvinylchloride, aluminum foil, polyester or polypropylene. Larvae of *Oryzaephilus mercator* (Fauvel), *Cathartus quadricollis* (Guerin-Meneville) and *Cryptolestes pusillus* (Schoenherr) made no penetrations. *Tribolium castaneum* (Herbst) larvae were very weak penetrators. Only *Tenebroides mauritanicus* (L.) and *Trogoderma variabile* Ballion larvae penetrated all 7 materials. Larvae of the 5 other spp., *Dermestes maculatus* De Geer, *Lasioderma serricorne* (F.), *Ephestia cautella* (Walker), *Corcyra cephalonica* (Stainton) and *Plodia interpunctella* (Huebner), penetrated 5 of the 7 materials. Foil, polyester and polypropylene were generally the most resistant to penetration. Larvae of all species generally showed a much greater propensity to penetrate when confined without food. Many penetrations occurred within 24 h and most occurred with 1 wk. Some larvae that did not penetrate and subsequently transformed into adults made more penetrations as adults than as larvae. The locations of the penetrations in the vertically positioned pouches were predominantly in the bottom half of the pouches and in a zone 0-1 cm from the folds.

Descriptors: TRIBOLIUM-CASTANEUM CRYPTOLESTES-PUSILLUS ORYZAEPHILUS-MERCATOR CATHARTUS-QUADRICOLLIS TENEBROIDES-MAURITANICUS DERMESTES-MACULATUS TROGODERMA-VARIABILE LASIODERMA-SERRICORNE CORCYRA-CEPHALONICA EPHESTIA-CAUTELLA PLODIA-INTERPUNCTELLA FOOD LARVA ADULT CELLOPHANE POLY ETHYLENE PAPER POLY VINYL CHLORIDE ALUMINUM FOIL POLY ESTER POLY PROPYLENE

Concept Codes: BEHAVIOR BIOL-ANIMAL BEHAVIOR(+07003); NUTRITION-GENL,NUTR STATUS,METHS(13202); NUTRITION-MALNUTRITION,OBESITY(13203); DEVELOPMNTL BIOL-GENL,DESCRIPTIVE(25502); DEVELOPMNTL BIOL-GEN MORPHGENSIS(25508); ECONOM ENTOMOL-STORED PRODUCTS(+60008); ECONOM ENTOMOL-CHEM PHYS CONTRL(+60016); INVERTB PHYSIOL-INSECTA-PHYSIOL(64076)

Biosystematic Codes: COLEOPTERA(75304); LEPIDOPTERA(75330)

67031324

DETERMINATION OF POLY NUCLEAR AROMATIC HYDRO CARBONS IN POLY VINYL CHLORIDE SMOKE PARTICULATES BY HIGH PRESSURE LIQUID CHROMATOGRAPHY AND GAS CHROMATOGRAPHY MASS SPECTROMETRY

LIAO J C; BROWNER R F

SCH. CHEM., GA. INST. TECHNOL., ATLANTA, GA. 30332, USA.

ANAL CHEM 50 (12). 1978 1683-1686. Coden: ANCI

Language: ENGLISH

A simple, fast and accurate chromatographic method was established for the quantitation of poly-

hydrocarbons (PAH) in smoke particulates obtained from pyrolysis and combustion of poly(vinyl chloride) under simulated fire conditions. μ -Silica and μ -Styragel columns were used in high pressure liquid chromatography for PAH fraction isolation. An Ultra-Bond column was used in gas chromatography (GC) and GC/mass spectrometry for quantitation of individual PAH in the particulates. Many PAH were identified, including carcinogenic benzo[a]pyrene and 7,12-dimethyl-benz[a]anthracene.

Descriptors: SIMULATED FIRE CONDITIONS BENZO A PYRENE 7 12 DI METHYL BENZ A ANTHRACENE CARCINOGENS

Concept Codes: ECOLOGY-BIOCLIMATOL,BIOMETEOROL(+07504); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(+10504); EXTERN EFF-HOT(10618); MOVEMENT(12100); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); TEMPERATURE-GENL,METHS(23001); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(2400-7); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

67029496

VINYL CHLORIDE AND VINYL BENZENE STYRENE METABOLISM
MUTAGENICITY AND CARCINOGENICITY

VAINIO H

DEPT. IND. HYG. TOXICOL., INST. OCCUP. HEALTH, HAARTMANINKATU

1, SF-00290 HELSINKI 29, FINL.

CHEM-BIOL INTERACT 22 (1), 1978 117-124. Coden: CBINA

Language: ENGLISH

Vinyl chloride and vinyl benzene (styrene) are mutagenic in microbial tests, in *Drosophila*, in yeast and in mammalian cells. Reports from various countries show an excess of chromosomal aberrations in the lymphocytes of workers exposed to vinyl chloride monomer when the workers are compared with controls. Workers occupationally exposed to styrene also reveal a clear increase in the rate of chromosome aberrations in their lymphocytes. Both chloroethylene oxide and styrene oxide, the primary biotransformation products of vinyl chloride and styrene, respectively, bind covalently to cellular macromolecules. Vinyl chloride is a carcinogen in both animals and man. Styrene is currently being tested in animals. The demonstration of mutagenic response via microbial and other test systems and observations of significant excesses of chromosomal aberrations among workers exposed to these agents raise scientific and health concern about possible genetic risks of vinyl chloride and styrene to man.

Descriptors: MICROBE DROSOPHILA YEAST MAMMAL CELL HUMAN LYMPHOCYTE CHLORO ETHYLENE OXIDE STYRENE OXIDE CARCINOGENS OCCUPATION

Concept Codes: CYTOLOGY/CYTOCHEM-PLANT(02504); CYTOLOGY/CYT-CHEM-ANIMAL(02506); CYTOLOGY/CYTOCHEM-HUMAN(02508); GENETICS-/CYTOGENET-GENL STUDIES(+03502); GENETICS/CYTOGENET-PLANT(03504); GENETICS/CYTOGENET-ANIMAL(03506); GENETICS/CYTOGENET-HUMAN(03508); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); METABOLISM-GENL STUD-,METAB PATHW(13002); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004); BLOOD/BODY FLDS-LYMPHAT TISS.RES(+15008); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTRI(+22506); NEOPLSMS/NEOPL AGENTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007); BACTERIA-PHYSIOLOGY,BIOCHEMISTRY(31000); BACTERIAL AND VIRAL GENETICS(+31500); MICROBIOLOG APPARAT,METHS,MEDIA(32000); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); INVERTEB PHYSIOL-INSECTA-PATHOL(+64078)

Biosystematic Codes: MICROORGANISMS-UNSPECIFIED(01000); FUNGI-UNSPECIFIED(15000); DIPTERA(75314); MAMMALIA-UNSPECIFIED AND EXTINCT(85700); HOMINIDAE(86215)

(1), trichloroethylene oxide (2), tetrachloroethylene oxide (3), cis- and trans-1-chloropropene oxide (4 and 5), and cis- and trans-1,3-dichloropropene oxide (6 and 7), were synthesized from their respective chloroalkenes via either autooxygenation (in the case of 2 and 3) or m-chloroperoxybenzoic acid oxidation (in the case of 1 and 4-7). Dichlorobenzene was a byproduct in the synthesis of both 6 and 7. In the case of 6, its formation was determined to be a result of a bimolecular reaction involving an intermediate in the synthesis of 6. Kinetics of hydrolysis at pH 7.4 and 37.degree. C were determined for compounds 2-7. Kinetics of thermal decomposition in dilute hydrocarbon solution were determined for compounds 2, 4, 5, and 7. The hydrolysis and thermolysis rates are discussed with respect to structure and mechanism of product formation.

Descriptors: VINYL CHLORIDE OXIDE TRI CHLORO ETHYLENE OXIDE 1 CHLORO PROPENE OXIDE 1 3 DI CHLORO PROPENE OXIDE CARCINOGENS AUTO OXYGENATION M CHLORO PER BENZOIC-ACID OXIDATION DI CHLORO BENZENE KINETIC STUDIES HYDROLYSIS THERMAL DECOMPOSITION

Concept Codes: BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(+10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); EXTERN EFF-HOT(10618); TOXICOL-GENL/EXP STUDS,METHS(+22501); TEMPERATURE-GENL,METHS(23001); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007)

Biosystematic Codes: CHORDATA-UNSPECIFIED(85000)

67029447

SYNTHESIS AND REACTIONS OF CHLORO ALKENE EPOXIDES

KLINE S A; SOLOMON J J; VAN DUUREN B L

LAB ORG. CHEM. CARCINOGEN., INST. ENVIRON. MED., N.Y. UNIV. MED. CENT., NEW YORK, N.Y. 10016, USA.

J ORG CHEM 43 (18), 1978 3596-3600. Coden: JOCEA

Language: ENGLISH

The carcinogenic chloroalkene epoxides, vinyl chloride oxide

67026148

INTERACTION OF PLASMA PROTEINS WITH ARTIFICIAL SURFACES
PROTEIN ADSORPTION ISOTHERMS

CHUANG H Y K; KING W F; MASON R G
 DEP. PATHOL., UNIV. S. FLA. COLL. MED., 12901 N. 30TH ST.,
 TAMPA, FLA. 33612, USA.
 J LAB CLIN MED 92 (3). 1978 483-496. Coden: JLCMA
 Language: ENGLISH

A simple technique using a small disc which is dipped into a 125I-labeled protein solution was devised to study the adsorption of human albumin, fibrinogen and Ig[immunoglobulin]G onto Cuprophane or PVC [polyvinylchloride]. The purity of these human plasma proteins was examined carefully with polyacrylamide gel electrophoresis and immunochemical methods. The adsorption isotherms of albumin, fibrinogen and IgG show a Langmuir type adsorption. Delipidation of albumin did not alter the albumin affinity to Cuprophane and PVC. The surface saturation concentration (ng/cm²) for albumin, fibrinogen, or IgG were all more on PVC (a hydrophobic surface) than on Cuprophane (a hydrophilic surface). The competitive adsorption of 1 protein species in 2- or 3-protein mixture was also studied. Albumin and fibrinogen compete with each other for adsorption. The effects of IgG on the adsorption of albumin or fibrinogen were inconsistent and not predictable; the reason for this is unknown. The effect of laminar flow on albumin adsorption was studied with a specially designed Richardson flow chamber. In general, flow caused an increase in albumin adsorption over that at static conditions. The increase of albumin adsorption was more pronounced also for PVC than for Cuprophane from 1-10 ml/min.

Descriptors: ALBUMIN IMMUNO GLOBULIN G FIBRINOGEN HUMAN CUPROPHANE POLY VINYL CHLORIDE GEL ELECTROPHORESIS IMMUNOCHEMICAL STUDIES RICHARDSON FLOW CHAMBER

Concept Codes: RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(+10064); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(+10511); MOVEMENT(12100); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(+15002); IMMUNOL/IMMUNOCHEM-GEN METH(34-502)

Biosystematic Codes: HOMINIDAE(86215)

67023197

10 CANADIAN CASES OF ANGIO SARCOMA OF THE LIVER IN SHAWINIGAN QUEBEC CANADA

DELORME F; THERIAULT G
 DEP. PATHOL., CENT. HOSP. REG. MAURICE, SHAWINIGAN, QUE., CAN.

J OCCUP MED 20 (5). 1978 338-340. Coden: JOCMA
 Language: ENGLISH

Ten cases of angiosarcoma of the liver have been diagnosed in Shawinigan, Quebec [Canada] since 1955. All have occurred in men who worked in a vinyl chloride polymerizing plant. Cigarettes and alcohol did not seem to be associated with this tumor. The amount of vinyl chloride to which these people were exposed, according to information obtained through

questionnaires, appears elevated. Angiosarcoma of the liver was accompanied by a fibrosis of the liver which may precede its appearance. In describing the Canadian cases of angiosarcoma, this study attempted to shed more light upon the causal relationship between vinyl chloride monomer and angiosarcoma of the liver and to provide some clues to understanding the pathogenesis of this disease.

Descriptors: HUMAN VINYL CHLORIDE CIGARETTES ALCOHOL LIVER FIBROSIS

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BEHAVIOR BIOL-HUMAN BEHAVIOR(07004); BIOCHEM STUD-GENERAL(10060); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); PSYCHIATRY-ADDICTION(INC SMOKNG)(21004); TOXICOL-GENL/EXP STUDS,METHS(22501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-PATH,CLINIC(+24004); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015); EPIDEMIOL-ORGANIC DIS,NEOPLASMS(+37054); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); AGRONDMY-TOBACCO CROPS(52512)

Biosystematic Codes: SOLANACEAE(26775); HOMINIDAE(86215)

67023193

10 CANADIAN CASES OF ANGIO SARCOMA OF THE LIVER IN VINYL CHLORIDE WORKERS

DELORME F
 CENT. HOSP. REG. MAURICIE, CP 1130, SHAWINIGAN-SUD, QUE., CAN.

ANN ANAT PATHOL 23 (2). 1978 97-104. Coden: ANAPA
 Language: FRENCH

Ten cases of angiosarcoma of the liver among vinyl chloride workers from a plant in Shawinigan, Quebec [Canada] are reported. The occupational history of these workers and morphologic description of the lesions were presented. A pathogenic hypothesis is submitted.

Descriptors: HUMAN CARCINOGEN

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BONE,JNTS,FASC,CON-N/ADIP-PATHOL(18006); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215)

67023192

ASSOCIATION OF ANGIO SARCOMA OF THE LIVER WITH HEPATOMA IN A VINYL CHLORIDE WORKER

DELORME F

CENT. HOSP. REG. MAURICIE, CP 1130, SHAWINIGAN-SUD, QUE., CAN.

ANN ANAT PATHOL 23 (2). 1978 105-113. Coden: ANAPA

Language: FRENCH

This report deals with a 51 yr-old man who, for 23 yr and 4 mo. of his working life, was exposed to vinyl chloride vapors. Autopsy revealed a hepatoma associated with an angiosarcoma of the liver. The case is the 1st ever to be reported in the medical literature. This case raises doubts about the theory which suggests that the carcinogenic effect of vinyl chloride in man elicit a tumor of vascular nature.

Descriptors: HUMAN CARCINOGEN

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); PATHOLOGY-NECROSIS(12510); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BONE, JNTS, FASC, CONN/ADIP-PATHOL(18006); TOXICOL-ENVIRONMNTL, INDOSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215)

67021626

1ST STAGES OF MICROBIAL DEGRADATION OF POLY VINYL CHLORIDE STEREO SCAN ELECTRON MICROSCOPICAL INVESTIGATION

KILBERTUS G

LAB. MICROBIOL., CENT. 2 CYCLE CD 140, UNIV. NANCY I, 54037 NANCY CEDEX, FR.

MATER ORG (BERL) 13 (2). 1978 89-100. Coden: MTOGA

Language: FRENCH

The development of the surface microflora was observed with SEM [stereoscan electron microscopy] during successive stages in the alteration of PVC [polyvinylchloride]. When decomposing in nature, this material exhibits a scarce fungal and bacterial population. This scarcity is probably related to the toxicity of this material.

Descriptors: BACTERIA FUNGI

Concept Codes: ELECTRON MICROSCOPY(01058); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD, METAB PATHW(+13002); TOXICOL-GENL/EXP STUDS, METHS(+22501); BACTERIA-PHYSIOLOGY, BIO-CHEMISTRY(+31000); MICROBIOLOG APPARAT, METHS, MEDIA(32000); FOOD/INDUS MICRO-BIODEGRAD, DETER(+39006)

Biosystematic Codes: BACTERIA-UNSPECIFIED(04000); FUNGI-UNSPECIFIED(15000)

67021194

CLINGING AND CLIMBING ABILITY OF LARVAE OF 11 SPECIES OF STORED PRODUCT INSECTS ON 9 FLEXIBLE PACKAGING MATERIALS AND GLASS

CLINE L D

STORED-PROD INSECTS REG DEV LAB SCI CORR 1978

SAVANNAH, GA. 31403, USA.

J ECON ENTOMOL 71 (4). 1978 689-691. Coden: JEENA

Language: ENGLISH

Larvae of the lepidopteran species *Ephestia cautella* (Walker), *Corcyra cephalonica* (Stainton) and *Plodia interpunctella* (Huebner) clung to and climbed paper, glass, aluminum foil, cellophane, polyethylene (PE), fluorinated ethylenepropylene (FEP), ethylenetetrafluoroethylene (ETFE), polyester (PET), polyvinylchloride (PVC) and polypropylene (PP) at the greatest angle of incline (90.degree.). Larvae of 8 coleopteran species only climbed paper at 90.degree.. Larvae of some species could not climb some materials at a 5.degree. incline. Coleopteran larvae ranked generally from best to worst climbers were *Anthrenus flavipes* LeConte, *Dermestes maculatus* De Geer, *Tribolium castaneum* (Herbst), *Oryzaephilus mercator* (Fauvel), *Cathartus quadricollis* (Guerin-Meneville), *Trogoderma variabile* Ballion, *Attagenus megatoma* (F.) and *Lasioderma serricornis* (F.). Test materials ranked from easiest to most difficult to climb were paper, ETFE, PET, foil, cellophane, PE, FEP, glass, PVC and PP. Three coleopteran species, *O. mercator*, *C. quadricollis* and *D. maculatus* clung to all materials at 90.degree.. Other larvae ranked from best to worst clingers were *T. variabile*, *Tribolium castaneum*, *Anthrenus flavipes*, *Attagenus megatoma* and *L. serricornis*. Test materials ranked generally from easiest to most difficult to cling to were paper, glass, PET, ETFE, PVC, cellophane, FEP, foil, PE and PP.

Descriptors: EPHESTIA-CAUTELLA CORCYRA-CEPHALONICA PLODIA-INTERPUNCTELLA ANTHRENUS-FLAVIPES DERMESTES-MACULATUS TRIBOLIUM-CASTANEUM ORYZAEPHILUS-MERCATOR CATHARTUS-QUADRICOLLIS TROGODERMA-VARIABILE ATTAGENUS-MEGATOMA LASIODERMA-SERRICORNE PAPER GLASS ALUMINUM FOIL CELLOPHANE POLY ETHYLENE FLUORINATED ETHYLENE PROPYLENE ETHYLENE TETRA FLUORO ETHYLENE POLY ESTER POLY VINYL CHLORIDE POLY PROPYLENE

Concept Codes: BEHAVIOR BIOL-ANIMAL BEHAVIOR(+07003); MOVEMENT(12100); FOOD TECH-PREP, PROCESSNG, STORAGE(+13532); DEVELOPMNTL BIOL-GENL, DESCRIPTIVE(25502); ECONOM ENTOMOL-STORED PRODUCTS(+60008); INVERTB PHYSIOL-INSECTA-PHYSIOL(64076)

Biosystematic Codes: COLEOPTERA(75304); LEPIDOPTERA(75330)

67019113

PESTICIDE INDUCED CHANGES IN HEPATIC MICROSOMAL ENZYME SYSTEMS FURTHER STUDIES ON THE EFFECTS OF 1,1-DI-P-CHLOROPHENYL-2-CHLORO ETHYLENE IN THE JAPANESE QUAIL

STANLEY P I; BUNYAN P J; REES W D; SWINDON D M; WESTLAKE G E
PEST INFEST. CONTROL LAB., MINIST. AGRIC. FISH. FOOD,
TOLWORTH, SURBITON, SURREY, ENGL., UK.

CHEM-BIOL INTERACT 21 (2-3), 1978 203-214. Coden: CBINA
Language: ENGLISH

Changes in the liver resulting from the low level dietary administration of 1,1-di(p-chlorophenyl)-2-chloroethylene (DDMU), p,p'-DDT, o,p'-DDT, p,p'-DDD and p,p'-DDE to Japanese quail were monitored. DDMU was exceptional in causing substantial increases in relative liver weight and hepatic glucose-6-phosphatase after feeding at 100 ppm for 28 days. The time course of liver enzyme induction by DDMU was studied in Japanese quail after periods of dietary administration ranging from 1-28 days with particular reference to changes in hepatic cytochrome P-450 and relative liver weight. Structural changes in the liver were followed by reference to protein and lipid components. The hepatic response to DDMU appears to be biphasic. Initially there are substantial increases in hepatic cytochrome P-450 and relative liver weight, but the latter is largely due to accumulation of triglycerides. After approximately 20 days the level of hepatic triglycerides returns to normal, but the relative liver weight and hepatic cytochrome P-450 remain at a high plateau level. This secondary phase of liver induction probably involves cell proliferation. DDMU causes major changes in the avian liver and either directly or through a metabolite causes pronounced microsomal enzyme induction.

Descriptors: DDT DDE DDD INSECTICIDES GLUCOSE 6 PHOSPHATASE
CYTOCHROME P-450 PROTEIN LIPID

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(O2506); BIOCHEM
STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO
ACD(10064); BIOCHEM STUD-PORPHYRINS, BILE PIGM(10065); BIOCHEM
STUD-LIPIDS(10066); ENZYMES-GEN, COMPAR STUD, COENZYMES(+10802);
ENZYMES-PHYSIOLOGICAL STUDIES(+10808); PHYSIOLOGY-GENERAL
STUDIES(12002); METABOLISM-LIPIDS(13006); METABOLISM-PROTNS, P-
EPTDS, AM ACDS(13012); NUTRITION-GENL, NUTR STATUS, METHS(+13202);
NUTRITION-PATHOGENIC DIETS(13216); DIGESTIVE SYST-ANATOMY(1-
4002); DIGESTIVE SYST-PATHOLOGY(+14006); TOXICOL-GENL/EXP
STUDS, METHS(+22501); TOXICOL-ENVIRONMENTAL, INDUSTR(22506); PEST
CONTRL GENL/PESTICS/HERBICS(+54600); ECONDM ENTOMOL-CHEM PHYS
CONTRL(60016)

Biosystematic Codes: GALLIFORMES(85536); ABSTRACTS OF
ENTOMOLOGY(96000)

67016728

FOREIGN BODY TUMORIGENESIS IN MICE DNA SYNTHESIS IN SURFACE
ATTACHED CELLS DURING PRE NEOPLASIA

THOMASSEN M J; BUONEN L C; BRAND I; BRAND K G
DEP. PEDIATR., CASE WEST. RESERVE UNIV., CLEVELAND, OHIO
44106, USA.

J NATL CANCER INST 61 (2), 1978 359-364. Coden: JNCIA
Language: ENGLISH

(CBA/H .times, CBA/H-T6)F1 mice were given s.c. implants of unplasticized vinyl chloride acetate 15 .times, 22 mm. copolymer films. The animals were pulsed with [3H]thymidine at various times during the 15 mo. following implantation. DNA synthesis occurred in the film-attached cell population, predominantly macrophages, throughout the preneoplastic phase in females and males. Giant cells with fewer than 10 nuclei were labeled synchronously and asynchronously. No DNA synthesis was detected in giant cells with more than 10 nuclei. Previous studies showed that phagocytic inactivity and ultrastructural signs of functional dormancy are characteristic for the foreign body-reactive macrophage. The macrophage was not dormant with respect to DNA synthesis.

Descriptors: VINYL CHLORIDE ACETATE FILM IMPLANTATION
CARCINOGEN TRITIATED THYMIDINE LABELING MACROPHAGES

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(O2506); GENETICS/CY-
TOGENET-ANIMAL(O3506); RADIATION BIOL-RADTN, ISOTOP TECH(O6504);
BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL
ACD, PURNS, PYRM(10062); BIOPHYS-MOLECUL PROP, MACROMOLEC(10506);
EXTERN EFF-PHYSICAL, MECH EFFECTS(+10612); ANATOMY/HISTOL-REGEN,
TRANSPLANT(11107); ANATOMY/HISTOL-MICRO, ULTRAMICRSC(11108);
METABOLISM-NUCL ACD, PURINS, PYRM(+13014); BLOOD/BODY FLDS-BLO-
OD CELL STUDS(+15004); BLOOD/BODY FLDS-LYMPHAT
TSS, RES(+15008); INTEGUMENT SYST-GENL STUDS, METHS(18501);
ROUTES OF IMMUNIZ, INFECT, THERAP(22100); TOXICOL-GENL/EXP
STUDS, METHS(+22501); NEOPLSMS/NEOPL AGNTS-IMMUNOLOGY(24003);
NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CA-
RCINOGENS(+24007); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(34508)

Biosystematic Codes: MURIDAE(86375)

67014795

STUDIES ON THE ECOLOGY OF BLACK FLIES SIMULIIDAE DIPTERA
PART 1 COMPARISON OF SOME QUANTITATIVE SAMPLING METHODS FOR
LARVAE

NAKAMURA Y; SAITO K; TAKAHASHI M
YOKOHAMA CITY INST. HEALTH, TAKIGASHIRA, ISOGO, YOKOHAMA
235, JPN.

JPN J SANIT ZOOL 29 (2). 1978 209-212. Coden: ESDBA
Language: JAPANESE

Artificial substrates for immature simuliids were compared to establish a standard quantitative sampling method. Hand collection methods were also investigated. Artificial substrates used were nylon scrubbing brushes, short and long polyvinyl chloride (PVC) sheets, PVC tubes, fire bricks, normal bricks and ceramic tiles. Number of simuliids captured by the PVC tubes was largest and that by the nylon scrubbing brushes was smallest. Hand collections were carried out by 2 collectors for 5 min each. To collect the immature stages of simuliid quantitatively, use of 2 methods, PVC tubes and 5 min hand collection are recommended.

Descriptors: POLY VINYL CHLORIDE TUBES HAND COLLECTION

Concept Codes: GENERAL FIELD METHODS(01008); GENERAL FIELD APPARATUS(01010); MATHEMATIC BIOL/STATISTIC METH(04500); BEHAVIOR BIOL-ANIMAL BEHAVIOR(+07003); ECOLOGY-ANIMAL(+07508); ECONOM ENTOMOL-ANIMAL PESTS(+60012); ANIMAL DISTRIBUTION/ZOOGEOGRAPHY(62800); INVERTB TAXN-INSECTA,DIPTERA(+63574)

Biosystematic Codes: DIPTERA(75314)

67012826

URETHRAL REACTION TO CATHETER MATERIALS IN DOGS

ENGELBART R H; BARTONE F F; GARDNER P; HUTSON J
DEP. UROL., COLL. MED., UNIV. NEBR., 42ND ST. AND DEWEY
AVE., OMAHA, NEBR. 68105, USA.

INVEST UROL 16 (1). 1978 55-56. Coden: INURA
Language: ENGLISH

The reaction of the dog urethra to 2 new polyurethane polymers was compared with those produced by materials currently used in the manufacture of urethral catheters. The comparison included silicone, latex rubber, tetrafluoroethylene polymer (Teflon) coated latex and polyvinyl chloride. There were no significant differences in the reaction of the urethra to the various materials. The present study was carried out in the absence of bacterial contamination.

Descriptors: SILICONE LATEX RUBBER TETRA FLUORO ETHYLENE POLYMER COATED LATEX POLY VINYL CHLORIDE

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOPHYS-BIOENGINEERING(+10511); ANATOMY/HISTOL-EXPERIMENTAL(11104); URIN SYST/EXT + SECR-GEN STUD,METH(+15501); URIN SYST/EXT SECR-ANATOMY(15502); URIN SYST/EXT SECR-PHYSL,BIOCHEM(+15504)

Biosystematic Codes: CANIDAE(85765)

WEST P W; REISZNER K D
DEP. CHEM., ENVIRON. SCI. INST., LA. STATE UNIV., BATON
ROUGE, LA. 70803, USA.

AM IND HYG ASSOC J 39 (8). 1978 645-650. Coden: AIHAA
Language: ENGLISH

A passive dosimeter-type personal monitor for vinyl chloride underwent extensive field testing. Collaborative studies by a number of laboratories confirm the accuracy, reliability, convenience and general acceptability of personal monitors utilizing gas permeation for sample collection and quantification. Data are generated as timeweighted averages and response is linear from 5 ppb-50 ppm. The monitors, which weigh only 35 g, are unaffected by variations in environmental conditions.

Concept Codes: BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-BIOENGINEERING(+10511); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-D-CCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

67012073

FIELD TESTS OF A PERMEATION TYPE PERSONAL MONITOR FOR VINYL
CHLORIDE/

67010216

RAT LIVER MICROSOMAL UPTAKE AND IRREVERSIBLE PROTEIN BINDING OF 1,2-CARBON-14 VINYL BROMIDE

BOLT H M; FILSER J G; HINDERER R K
 INST. TOXICOL., UNIV. TUEB., WILHELMSTR. 56. D-7400
 TUEBINGEN 1, W. GER.
 TOXICOL APPL PHARMACOL 44 (3). 1978 481-490. Coden:
 TXAPA

Language: ENGLISH

When rat liver microsomes are incubated in a [14C]vinyl bromide atmosphere, rapid equilibration of vinyl bromide occurs between the gas and liquid incubation phases. The presence of NADPH in the incubation further increases the uptake of radioactivity into the incubation mixture which is related to microsomal metabolism of vinyl bromide. Saturation of metabolizing enzymes occurs at a partial pressure of vinyl bromide in the gas phase of 0.1 Torr, which is about 1 order of magnitude less than previously reported for the carcinogen vinyl chloride. The presence of 1,2,3-benzothiadiazole derivatives and SKF 525 A [2-diethylaminoethyl-2,2-diphenyl valerate] inhibits microsomal metabolism of vinyl bromide. Part of the vinyl bromide metabolites bind irreversibly to microsomal protein. Irreversible binding depends on NADPH, with the Vmax amounting to 6.6 pmol bound/mg of microsomal protein/min. Half-maximal binding occurs at a partial pressure of vinyl bromide in the gas phase of 0.022 Torr. If soluble proteins are added to the microsomal incubation, vinyl bromide metabolites also irreversibly bind to those proteins. Strain differences occur in metabolism of vinyl bromide by liver microsomes from Sprague-Dawley and Wistar rats.

Descriptors: VINYL CHLORIDE CARCINOGENS 1 2 3
 BENZOTHIADIAZOLE 2 DI ETHYLAMINOETHYL-2 2-DIPHENYL VALERATE
 SKF-525-A METABOLIC-DRUG NADPH

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION
 BIOL-RADTN,ISOTOP TECH(06504); COMPARATIVE BIOCHEM-GENL
 STUDIES(10010); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10-
 060); EXTERN EFF-PRESSURE(10606); PHYSIOLOGY-COMPARATIVE(1200-
 3); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM-PROT-
 NS,PEPTDS,AM ACDS(+13012); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14-
 004); PHARMACOL-DRUG METAB,METAB STIMU(+22003); TOXICOL-GENL/-
 EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006);
 NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); LABORATORY ANIMALS--
 GENL STUDS(28002); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

67010215

HEPATIC MACRO MOLECULAR BINDING FOLLOWING EXPOSURE TO VINYL CHLORIDE

WATANABE P G; ZEMPEL J A; PEGG D G; GEHRING P J
 TOXICOL. RES. LAB., HEALTH ENVIRON. RES., 1803 BUILD., DOW
 CHEM. CO., MIDLAND, MICH. 48640, USA.
 TOXICOL APPL PHARMACOL 44 (3). 1978 571-580. Coden:
 TXAPA

Language: ENGLISH

Covalent binding of radioactivity to hepatic macromolecules
 in rats exposed to 14C-labeled vinyl chloride (VC) was studied

to determine if VC-induced carcinogenesis may be related to electrophilic alkylation of macromolecules in vivo. Male Sprague-Dawley rats were exposed to 1, 10, 25, 50, 100, 250, 500 or 5000 ppm of [14C]VC for 6 h. Following exposure, radioactivity covalently bound to hepatic macromolecules and purified nucleic acids (RNA, DNA) was determined. The total amount of [14C]VC metabolized and hepatic glutathione (GSH) content were also determined. The total amount of radioactivity bound to macromolecules in the liver did not increase proportionately to the increase in the exposure concentration of VC. A disproportionate decrease in macromolecular binding was observed as the concentration of VC increased. Covalent binding to hepatic macromolecules was related to the amount of VC metabolized. At exposures greater than 50 ppm, the amount of 14C bound to macromolecules in the liver correlates with induction of hepatic angiosarcoma. There was no detectable binding of radioactivity to DNA or RNA in the liver. Hepatic glutathione content was significantly depressed only at exposure concentrations greater than 100 ppm.

Descriptors: RAT CARCINOGEN ANGIO SARCOMA RNA DNA BINDING
 GLUTATHIONE CONTENT

Concept Codes: RADIATION BIOL-RADTN,ISOTOP TECH(06504);
 BIOCHEM METH-GENERAL(10050); BIOCHEM METH-NUCL ACD,PURNS,PYRM-
 (10052); BIOCHEM METH-PROTNS,PEPTDS,AM AC(10054); BIOCHEM
 STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062);
 BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOPHYS-MOLE-
 CUL PROP,MACROMOLEC(10506); METABOLISM-GENL STUD,METAB
 PATHW(+13002); METABOLISM-PROTNS,PEPTDS,AM ACDS(+13012);
 METABOLISM-NUCL ACD,PURINS,PYRM(+13014); DIGESTIVE SYST-PATH-
 QLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508);
 BONE,JNTS,FASC,CONN/ADIP-PATHOL(18006); TOXICOL-GENL/EXP STUD-
 S,METHS(+22501); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006);
 NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: MURIDAE(86375)

67010213

RESOLUTION OF DOSE RESPONSE TOXICITY DATA FOR CHEMICALS
REQUIRING METABOLIC ACTIVATION EXAMPLE VINYL CHLORIDEGEHRING P J; WATANABE P G; PARK C N
HEALTH ENVIRON. RES., DOW CHEM., USA, MIDLAND, MICH. 48640,
USA.TOXICOL APPL PHARMACOL 44 (3). 1978 581-592. Coden:
TXAPA

Language: ENGLISH

The toxicity of many chemicals results from biotransformation products formed from chemical rather than the chemical per se. In such cases, the incremental response may become diminishingly smaller with increasing dose or exposure because activation of the chemical to the toxic form follows apparent Michaelis-Menten rather than apparent 1st-order kinetics. Rats were exposed to concentrations ranging from 1.4-4600 ppm of vinyl chloride for 6 h, and the total amount metabolized was determined. The amount metabolized followed apparent Michaelis-Menten kinetics. For rats, the logarithmic probability incidence of angiosarcoma vs. the amount of vinyl chloride metabolized rather than the exposure concentration of vinyl chloride is linear. Assuming no threshold in spite of evidence to the contrary, extrapolation of data below the range of doses causing experimentally observable responses predicted an incidence of 0.01% hepatic angiosarcoma in rats exposed to 4.6 ppm of vinyl chloride. Theoretical extension of the extrapolation to humans after adjusting for metabolic and body mass differences was undertaken. The theoretical extrapolation for man exposed daily for 8 h to 1 ppm suggests an incidence of 1.5/100,000,000. This theoretical incidence, although a likely overestimate because of a less than predicted incidence in men exposed to 200 ppm and greater, as well as evidence for a threshold in rats, is less than that expected to occur spontaneously. The concepts evolved from this analysis reveals why pharmacokinetics must be considered in designing toxicology experiments as well as interpretation of resulting data.

Descriptors: RAT HUMAN CARCINOGEN LIVER ANGIO SARCOMA
OCCUPATIONAL EXPOSURE

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+1450-8); BONE,JNTS,FASC,CONN/ADIP-PATHOL(18006); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+2-2501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+2400-7); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

LAB. PATHOL., NATL. CANCER INST., ROOM 2A27, BUILD. 10,
BETHESDA, MD. 20014, USA.

AM J PATHOL 92 (2). 1978 349-376. Coden: AJPA

Language: ENGLISH

Examples of human angiosarcoma following exposure to vinyl chloride, Thorotrast or As (medicinal and industrial) and cases, including children, of unknown etiology were studied to establish diagnostic criteria and to study their evolution. The uniform evolution suggests an environmental factor also in the cases of unknown etiology, which may be established by epidemiologic studies. A precursor stage is characterized by areas of combined hyperplasia of hepatocytes and a variety of sinusoidal and perisinusoidal cells associated with excess of reticulin and sinusoidal dilatation. The diagnostically useful picture in Ag impregnations indicates reticulin formation by the perisinusoidal cells, presumably the lipocytes. The hepatocytic proliferation suggests a hepatocarcinogenic but usually not fully expressed potential. The mixed hyperplasia of the various sinusoidal cells proceeds to an overgrowth of angiosarcoma cells, presumably derived from endothelial cells. In early stages they are usually in contact with hepatocytes (intralobular growth). A trabecular arrangement results from loosening of the lobular plate arrangement by dilatation of sinusoids, leading to primary peliosis. With disappearance of the hepatocytes, various growth patterns develop, terminating in nodular, solid angiosarcoma composed of spindle-shaped or polyhedral cells which undergo necrosis or hemorrhage (secondary peliosis). The interaction between hepatocytes and sinusoidal cells requires elucidation.

Descriptors: CARCINOGENS OCCUPATIONAL EXPOSURE SILVER
IMPREGNATION DIAGNOSIS

Concept Codes: MICROSCOPY-CYTOLOG,CYTOCHEM TECH(+01054); CYTOLOGY/CYTOCHEM-HUMAN(02508); SOCIAL BIOL/HUMAN ECOLOGY(055-00); RADIATION BIOL-RADTN,ISOTOP TECH(06504); RADIATION BIOL-RADTN EFF,PROTECT(+06506); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); MINERALS(100-69); BIOPHYS-MEMBRANE PHENOMENA(10508); ANATOMY/HISTOL-MICRO,-ULTRAMICRSC(11108); PATHOLOGY-COMPARATIVE(12503); PATHOLOGY-D-IAGNOSTIC(12504); PATHOLOGY-THERAPY(12512); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-GENL STUDS,METHS(14501); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BONE,JNTS,FASC,CONN/ADIP-GENL(18001); BONE,JNTS,FASC,CONN/ADIP-PATHOL(18006); PHARMACOL-GENERAL STUDIES(+22002); PHARMACOL-CLINICAL PHARMACOL(22005); TOXICOL-PHARMACOLOGICAL(+22504); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-DIAGNS METH(+24001); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); PEDIATRICS(25000); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); EPIDEMIOLOG-ORGANIC DIS,NEOPLASMS(37054)

Biosystematic Codes: HOMINIDAE(86215)

67010204

DEVELOPMENT OF HEPATIC ANGIO SARCOMA IN MAN INDUCED BY VINYL
CHLORIDE THOROTRAST AND ARSENIC COMPARISON WITH CASES OF
UNKNOWN ETIOLOGY

POPPER H; THOMAS L B; TELLES N C; FALK H; SELIKOFF I J

67009009

MUTAGENICITY OF VINYL CHLORIDE EXTERNAL CHROMOSOME STUDIES PERSONS WITH AND WITHOUT VINYL CHLORIDE ILLNESS AND ON VINYL CHLORIDE EXPOSED ANIMALS

FLEIG I; THIESS A M
DEP. OCCUP. MED. HEALTH PROT., BAD. ANILIN SODA FABR. AG.,
6700 LUDWIGSHAFEN, W. GER.

J OCCUP MED 20 (8), 1978 557-561. Coden: JOCMA

Language: ENGLISH

Chromosome analysis was undertaken on lymphocyte cultures taken from 6 workers with estimated exposure to VC [vinyl chloride] and 4 workers with monitored exposure to VC; 20 workers showing symptoms of VC illness with unknown exposure and 1 angiosarcoma case, due to VC exposure; and, on bone marrow cells of Chinese hamsters after inhalation of 2500 ppm or 5000 ppm, or after i.p. injections of 300 mg/kg or 600 mg/kg. The proband groups showing symptoms of VC illness, the only living angiosarcoma case, and the animal test show a significant increase in the rate of aberrations in comparison to the control group.

Descriptors: LYMPHOCYTE CHINESE HAMSTER BONE MARROW CELL
ANGIO SARCOMA

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); CYTOLOGY/CYTOCHEM-HUMAN(02508); GENETICS/CYTOGENET-ANIMAL(+03506); GENETICS/CYTOGENET-HUMAN(+03508); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); BLOOD/BODY FLDS-BLOOD CELL STUDS(15004); BLOOD/BODY FLDS-LYMPHAT TISS.RES(+15008); RESPIRATORY SYST-GENL STUD.METHS(16001); BONE,JNTS,FASC,CONN/-ADIP-PATHOL(18006); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-PATH-H.CLINIC(24004); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215); CRICETIDAE(86310)

67007039

SHORT-TERM INTERACTIONS OF BLOOD WITH POLYMERIC VASCULAR GRAFT MATERIALS PROTEIN ADSORPTION THROMBUS FORMATION AND LEUKOCYTE DEPOSITION

BARBER T A; MATHIS T; IHLENFELD J V; COOPER S L; MOSHER D F
DEP. PATHOL., UNIV. WIS., MADISON, WIS. 53706, USA.

SCANNING ELECTRON MICROSC 1978 (2). 1978 431-440.

Coden: SEMYB

Language: ENGLISH

Adherence of formed blood elements and adsorption of plasma proteins to the surface of polymers commonly used in blood collection devices, dialyzers and oxygenators were examined using an ex vivo arteriovenous shunt model, radiolabeling, immunolabeling and correlative scanning and transmission electron microscopy. Platelets isolated from the blood of canine experimental subjects and fibrinogen were radioisotope-tagged and returned to the circulation prior to the beginning of experiments. Fibrinogen and fibronectin adsorbed to shunt materials prior to use or during blood exposure were visualized directly through the use of the corresponding antilobulins and immunoperoxidase labeling

techniques. Ultrastructural data indicate that the mechanism of thrombus formation on polymeric vascular graft materials may differ extensively dependent upon surface composition. A characteristic deposition and embolization profile for thrombi containing radiolabeled platelets and fibrinogen was found with each polymeric material tested. PreadSORption of fibrinogen and fibronectin to polyvinyl chloride (PVC) shunt tubing enhanced its thrombogenicity but had little effect on the form of the surface-specific curve relating platelet density/1000 .mu.m2 to time of blood exposure. Increased numbers of polymorphonuclear neutrophils (PMN) were associated with thrombi on fibronectin-coated PVC shunts. Immunolabeling showed the initial adherence of platelets and PMN on pre-coated surfaces to be related to fibronectin deposits, and allowed speculation that a significant proportion of the previously reported activity of fibrinogen in mediating cell-substrate interactions on medical polymers may be due to its content of fibronectin. The most suitable polymeric materials for extracorporeal circulation devices apparently will be those which adsorb minimal amounts of fibronectin and fibrinogen during the early stages of blood contact.

Descriptors: DOG PLATELETS FIBRINOGEN FIBRONECTIN POLY VINYL CHLORIDE POLYMORPHONUCLEAR NEUTROPHILS EXTRACORPOREAL CIRCULATION DEVICES

Concept Codes: ELECTRON MICROSCOPY(01058); CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION BIOL-RADTN.ISOTOP TECH(06504); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(+10064); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIO-ENGINEERING(+10511); ENZYMES-METHODS(10804); CARDIOVASC SYST-GENL STUDS.METHS(+14501); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-GENL STUDS.METHS(+15001); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(+15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004); BLOOD/BODY FLDS-LYMPHAT TISS.RES(+15008); IMMUNOL/IMMUNOCHEM-GEN METH(34502)

Biosystematic Codes: CANIDAE(85765)

67006062

THE EFFECTS OF ORGANIC COMPOUNDS USED IN THE MANUFACTURE OF PLASTICS ON THE RESPONSIVITY OF MURINE AND HUMAN LYMPHOCYTES

THURMAN G B; SIMMS B G; GOLDSTEIN A L; KILIAN D J
DIV. BIOCHEM., UNIV. TEX. MED. BRANCH, GALVESTON, TEX.
77550, USA.TOXICOL APPL PHARMACOL 44 (3). 1978 617-642. Coden:
TXAPA

Language: ENGLISH

The effects of acute exposure to a number of industrially important organic compounds on the immunological responses of human and murine lymphocytes were studied. The compounds were benzene, 1,4-dioxane, toluene diisocyanate (TDI), vinyl chloride, vinylidene chloride, ethylenimine and epichlorohydrin. Control compounds known to have immunological effects were azathioprine, hydrocortisone acetate and triethylenemelamine (TEM). The uptake of tritiated thymidine ([³H]TdR) of lymphocytes was used to measure their ability to respond to mitogenic agents, allogeneic lymphocytes or the antigenic nature of the compounds themselves. Most of the compounds were cytotoxic to lymphocytes at high concentrations. Dioxane and TDI showed evidence of specific actions on the immunological system. Dioxane suppressed T[thymus-derived]-cell responses while augmenting B[bone marrow-derived]-cell responses. TDI exhibited stimulatory effects at several concentrations to both human and murine lymphocytes. Of the chemicals studied, both dioxane and TDI apparently have properties making them capable of affecting lymphocytes in ways other than nonspecific cytotoxicity. These properties make TDI and dioxane interesting when monitoring immunological systems of industrial workers accidentally exposed to these compounds at high concentrations or routinely exposed to minimal levels of these compounds.

Descriptors: WORKERS BENZENE 1 4 DIOXANE TOLUENE DI ISO CYANATE VINYL CHLORIDE VINYLIDENE CHLORIDE ETHYLENIMINE EPI CHLOROHYDRIN AZATHIOPRINE HYDROCORTISONE ACETATE TRI ETHYLENE MELAMINE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); CYTOLOGY/CY-TOCHEM-HUMAN(02508); SOCIAL BIOL/HUMAN ECOLOGY(05500); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL-(10060); BIOCHEM STUD-NUCL ACD,PURINS,PYRM(10062); BIOCHEM STUD-STEROLS,STEROIDS(10067); MOVEMENT(12100); METABOLISM-NUCL ACD,PURINS,PYRM(13014); BLOOD/BODY FLDS-BLOOD CELL STUDS(15004); BLOOD/BODY FLDS-LYMPHAT TISS,RES(15008); ENDOCRINE SYST-THYMUS(17016); BONE,JNTS,FASC,CONN/ADIP-GENL(1-8001); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(34508); ENVIRON HEALTH-OCCUP-ATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

67003884

PULMONARY TUMORS INDUCED IN MICE BY VINYL CHLORIDE MONOMER

SUZUKI Y

ENVIRON. SCI. LAB., MT. SINAI SCH. MED., FIFTH AVE. AND
100TH ST. NEW YORK, N.Y. 10029, USA

ENVIRON RES 16 (1-3). 1978 285-301. Coden: ENVRA

Language: ENGLISH

Neoplastic effects of vinyl chloride were studied in lungs of 27 mice exposed to vinyl chloride monomer at 2500 and 6000 ppm for 5 and 6 mo. Pulmonary tumors were observed in 26 of 27 experimental animals. By light microscopy, the tumors were multiple and arranged in either tubulo-papillary or adenomatous formations. Although occasional mitotic divisions and invaginations into the bronchiolar lumen were observed, no metastases were found. By EM, short microvilli, tight junctions between 2 adjacent cells, appearance of osmiophilic lamellar bodies, large mitochondria of irregular shape, well-developed Golgi complexes, continuous or discontinuous basement membranes, occasional appearance of sequestration and of crystalloids, and lack of both cilia and mucous secretory granules were observed as characteristic features of the neoplastic cells. Some of the cells were poorly differentiated and were equipped with poorly developed organoids, without formation of osmiophilic lamellar bodies. The pulmonary tumors corresponded to alveologenic tumors or alveologenic cancer. The neoplastic cells were probably transformed from type II alveolar epithelium via its hyperplastic form. Mouse lung is an extremely sensitive indicator of the oncogenicity of vinyl chloride.

Descriptors: CARCINOGEN CELLULAR CHANGES LIGHT MICROSCOPY ELECTRON MICROSCOPY

Concept Codes: MICROSCOPY-GENL,SPECL TECHNIQUES(01052); MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); ELECTRON MICROSCOPY(-01058); CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); BIOPHYS-MEMBRANE PHENOMENA(10508); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); BLOOD/BODY FLDS-LYMPHAT TISS,RES(15008); RESPIRATORY SYST-ANATOMY(16002); RESPIRATORY SYST-PATHOLOGY(16006); TOXICOL-GENL/EXP STUDS,METHS(22501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: MURIDAE(86375)

67002739

EFFECTS OF VINYL CHLORIDE IN MAN A CYTO GENETIC FOLLOW-UP STUDY

HANSTEEN I-L; HILLESTAD L; THIIIS-EVENSEN E; HELDAAS S S
LAB. GENET., TELEMARKE CENT. HOSP., OLAVSGT. 26, 3900
PORSGRUNN, NORW.

MUTAT RES 51 (2). 1978 271-278. Coden: MUREA

Language: ENGLISH

Cytogenetic studies were performed on 39 workers from a PVC [polyvinyl chloride] plant in 1974; 16 healthy men without any connection with the plant were chosen as controls. The cytogenetic study was repeated for 37 of the 39 workers 2-2.5 yr later. During this time interval the workers had only had a minimal exposure to VCM [vinyl chloride monomer]. This repeated study was performed with 32 matched controls from the office employees in the factory. Breaks, gaps and stable rearrangements were scored in 100 metaphases per person from 48 h lymphocyte cultures. The mean chromosome-breakage frequency for the workers (3.41%) was significantly higher than for the controls (1.79%) in the 1st investigation. In the repeated study no difference was found in mean chromosome-breakage frequency between the workers and their matched controls. Neither was there any difference between these breakage frequencies and the breakage frequency for the previous control group. A relationship between the reduction in exposure to VCM and the normalized chromosome-breakage frequency is indicated. Sister-chromatid exchanges [SCE] were studied for 16 workers with matched controls in the repeated study. A mean of 7.6 SCE/cell was found for both workers and controls. Bone-marrow samples from 4 workers were studied in the 1st investigation. The mean chromosome-breakage frequency was higher in the bone marrows (4.2%) than that reported for normal bone marrows (0.2, 0.4, 1.7%), and higher than for the corresponding lymphocyte cultures.

Descriptors: WORKER BONE MARROW LYMPHOCYTE

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(+02508); GENETICS/CYTOGENET-HUMAN(+03508); MATHEMATIC BIOL/STATISTIC METH(04500); SOCIAL BIOL/HUMAN ECOLOGY(05500); BLOOD/BODY FLDS-LYMPHAT TISS,RES(15008); BONE,JNTS,FASC,CONN/ADIP-GENL(18001); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); TISS CULTURE-APPARAT,METHS,MEDIA(32500); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

67001646

PROGRESS REPORT ULTRASOUND AND GASTRO ENTEROLOGY TECHNICAL CONSIDERATIONS

VICARY F R

UNIV. COLL. HOSP., LONDON, ENGL., UK.

GUT 18 (5). 1977 386-397. Coden: GUTTA

Language: ENGLISH

Recent technical advances in ultrasonic imaging have opened up new diagnostic possibilities for the gastroenterologist. This report discusses important points which are necessary for interpretation of what anatomy and pathology can or cannot be seen by ultrasonics. Pathologies discussed include: liver

tumors; hepatic cysts; vinyl chloride liver disease; diseases of the pancreas; and abdominal masses.

Descriptors: HUMAN DIAGNOSIS

Concept Codes: RADIATION BIOL-RADTN,ISOTOP TECH(+06504); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); PATHOLOGY-GENERAL STUDIES(12502); PATHOLOGY-DIAGNOSTIC(+12504); DIGESTIVE SYST-GENL STUDS,METHS(+14001); DIGESTIVE SYST-ANATOMY(14002); DIGESTIVE SYST-PATHOLOGY(+14006); TOXICOL-GENL/EXP STUDS,METHS(22501); NEOPLSMS/NEOPL AGNTS-DIAGNS METH(24001)

Biosystematic Codes: HOMINIDAE(86215)

67001014

AN IMPROVED LATEX INJECTION MEDIA FOR REPLICATING THE PULMONARY MICRO VASCULATURE

FRASCA J M; CARTER H W; SCHAFER W A

LAB. SENIOR MED. INVEST., VETERANS ADM. HOSP., EAST ORANGE, N.J. 07019, USA.

SCANNING ELECTRON MICROSC 1978 (2). 1978 485-489.

Coden: SEMYB

Language: ENGLISH

A highly stable replica [in anesthetized guinea pigs] was obtained by blending a plasticized vinyl chloride copolymer with a vinyl chloride copolymer in a ratio of 3:1 containing 1.0% polyethylene glycol (MW 400) and 6.0% Hypaque (diatrizoate sodium). Complete polymerization of the latexes was best accomplished by critical point drying prior to digestion of the tissue. The replicating media meets the criteria established for SEM [scanning electron microscope] examination, i.e., it completely fills the pulmonary vascular system, polymerizes and dries without shrinkage or distortion, can be rendered conductive and withstands electron beam irradiation.

Descriptors: GUINEA-PIG VINYL CHLORIDE CO POLYMER POLY ETHYLENE GLYCOL DIATRIZOATE SODIUM ELECTRON MICROSCOPY

Concept Codes: ELECTRON MICROSCOPY(+01058); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); EXTERN EFF-COLD(10616); NUTRITION-GENL,NUTR STATUS,METHS(13202); CARDIOVASC SYST-GENL STUDS,METHS(+14501); RESPIRATORY SYST-GENL STUD,METHS(+16001); RESPIRATORY SYST-PHYSIOL,BIOCHEM(+16004); NERVOUS SYST-PHYSIOL,BIOCHEM(20504); PHARMACOL-NEUROPHARMACOLOGY(22024); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TEMPERATURE-GENL,METHS(23001); TEMPERATURE-CRYOBIOLOGY(23004)

Biosystematic Codes: CAVIIDAE(86300)

67000938

NEW APPROACH TO STUDY OF CONNECTIVE TISSUE VASCULAR DISEASE
 LEROY E C; MARICO H R
 DIV. RHEUMATOL. IMMUNOL., DEP. MED., MED. UNIV. S.C.,
 CHARLESTON, S.C., USA.
 CARDIOVASC MED 3 (7). 1978 695-696. Coden: CMEDD
 Language: ENGLISH

The pathogenesis of scleroderma and other human vascular connective tissue disease is reviewed. Inborn errors of metabolism and exposure to vinyl chloride (VC) are implicated as causes. Scleroderma and VC related disease in animal models are compared.

Descriptors: HUMAN ANIMAL MODEL SCLERODERMA VINYL CHLORIDE
 Concept Codes: BIOCHEM STUD-GENERAL(10060); PATHOLOGY-GENERAL STUDIES(12502); PATHOLOGY-COMPARATIVE(12503); METABOLISM-GENL STUD,METAB PATHW(*13002); METABOLISM-METABOLIC DISORDERS(*13020); CARDIOVASC SYST-BLD VESS PATHOL(*14508); BONE,JNTS,FASC,CONN/ADIP-GENL(18001); BONE,JNTS,FASC,CONN/ADIP-PATHOL(*18006); INTEGUMENT SYST-GENL STUDS,METHS(18501); INTEGUMENT SYST-PATHOLOGY(*18506); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(*34508); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150); HOMINID-AE(86215)

67000531

PLATELET STORAGE AT 22 CELSIUS EFFECT OF TYPE OF AGITATION ON MORPHOLOGY VIABILITY AND FUNCTION IN-VITRO

HOLME S; VAIDJA K; MURPHY S
 CARDEZA FOUND. HEMATOL. RES., 1015 WALNUT ST., PHILADELPHIA, PA. 19107, USA.

BLOOD 52 (2). 1978 425-435. Coden: BLOOA
 Language: ENGLISH

Recovery in vivo after ⁵¹Cr labeling, platelet morphology and platelet aggregation were studied with platelet concentrates (PC) stored for transfusion under carefully controlled conditions. PC were prepared to a final volume of 50 ml from whole blood anticoagulated with citrate-phosphate-dextrose (CPD). The platelet count was kept between 0.8-1.6 times, 1012 platelets/liter. The PC were stored in bags constructed of polyvinylchloride (PVC) or polyethylene (PE) at 22 degrees C for 72 h. The bags were placed on a horizontal shaker or a ferris wheel for agitation during storage. No significant changes in pH or platelet count were observed during storage. PC stored on the wheel showed moderate loss of viability and a marked deterioration of platelet morphology and aggregation compared to the shaker. PC stored on the shaker in bags made of PE showed better aggregation with ADP and thrombin, but had the same viability and morphology as PC in bags constructed of PVC. Maintenance of normal platelet morphology, as determined by phase-contrast microscopy, extent of shape change response, and the size distribution according to the Coulter Counter correlated with recovery in vivo.

Descriptors: POLY ETHYLENE BAGS POLY VINYL CHLORIDE BAGS

THROMBIN ADP AGGREGATION

Concept Codes: MICROSCOPY-CYTOLOG,CYTOCHEM TECH(*01054); CYTOLOGY/CYTOCHEM-ANIMAL(*02506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); MINERALS(10069); EXTERN EFF-TEMPERATURE(*10614); ENZYMES-PHYSIOLOGICAL STUDIES-(10808); ANATOMY/HISTOL-REGEN,TRANSPLANT(11107); MOVEMENT(12100); PATHOLOGY-THERAPY(12512); BLOOD/BODY FLDS-GENL STUDS,METHS(*15001); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(*15004); TEMPERATURE-GENL,METHS(23001)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150)

17059948

ENGINEERING CONTROL TECHNOLOGY IN POLY VINYL CHLORIDE POLYMERIZATION PLANTS

GIDEON J A
 J ENVIRON PATHOL TOXICOL 2 (5). 1979 285-318 Coden: JEPTD

Descriptors: HUMAN ILLNESS PREVENTION EQUIPMENT MODIFICATION VENTILATION WORK PRACTICE EDUCATION MANAGEMENT

Concept Codes: GENL BIOL-TXTBKS,EDUCATN,AUD-VIS(00514); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); BIOPHYS-BIOENGINEERING(*10511); PATHOLOGY-GENERAL STUDIES(12502); METABOLISM-GENL STUD,METAB PATHW(13002); TOXICOL-ANTIDOTES,PREVENTIVE(*22505); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); ENVIRON HEALTH-OCCUPATNL HEALTH(*37013)

Biosystematic Codes: HOMINIDAE(86215)

17054944

FORMATION OF CHLORINATED HYDRO CARBONS DURING COMBUSTION OF POLY VINYL CHLORIDE

AHLING B; BJORSETH A; LUNDE G
 CHEMOSPHERE 7 (10). 1978 799-806 Coden: CMSHA

Descriptors: AIR POLLUTION

Concept Codes: ECOLOGY-BIOCLIMATOL,BIOMETEOROL(*07504); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); EXTERN EFF-HOT(10618); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); TEMPERATURE-GENL,METHS(23001); ENVIRON HEALTH-AIR,WATR,SL POLLN(*37015)

17050141

EVOLUTION OF THOROTRAST INDUCED HEPATIC ANGIO SARCOMAS

TELLES N C; THOMAS L B; POPPER H; ISHAK K G; FALK H

ENVIRON RES 18 (1). 1979 74-87 Coden: ENVRA

Descriptors: HUMAN VINYL CHLORIDE ARSENICALS CARCINOGENS HISTOLOGY

Concept Codes: MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); CYTOLOGY/CYTOCHEM-HUMAN(+02508); RADIATION BIOL-RADTN,ISOTOP TECH(06504); RADIATION BIOL-RADTN EFF,PROTECT(+06506); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(+11108); PATHOLOGY-COMPARATIVE(12503); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-GENL STUDS,METHS(14501); CARDIOVASC SYST-BLD VESS PATHOL(+14508); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: HOMINIDAE(86215)

17049614

METABOLIC ACTIVATION OF VINYL CHLORIDE IN DROSOPHILA-MELANOGASTER AFTER PRE TREATMENT WITH INDUCERS OF MICROSMAL DE TOXICATION ENZYMES

MAGNUSSON J; HALLSTROM I; RAMEL C

MUTAT RES 64 (2). 1979 138-139 Coden: MUREA

Descriptors: ABSTRACT MAMMAL INSECT HIKONE STRAIN DI METHYL SULFOXIDE PHENO BARBITAL CLOPHEN METABOLIC-DRUG MUTAGEN CARCINOGEN INSECTICIDE RESISTANCE CARBON-14

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); GENETICS/CYTOGENET-ANIMAL(+03506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); PHYSIOLOGY-COMPARATIVE(12003); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); PHARMACOL-DRUG METAB,METAB STIMU(+22003); PHARMACOL-DIGESTIVE SYST(22014); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); PEST CONTRL GENL/PESTICS/HERBICS(54600); ECONOM ENTOMOL-CHEM PHYS CONTRL(60016); INVERTB PHYSIOL-INSECTA-PHYSIOL(64076); INVERTB PHYSIOL-INSECTA-PATHOL(+64078)

Biosystematic Codes: INSECTA-UNSPECIFIED(75300); DIPTERA(75314); MAMMALIA-UNSPECIFIED AND EXTINCT(85700); ABSTRACTS OF ENTOMOLOGY(96000)

17049604

IMPACT OF MICROSMAL ENZYMES ON THE MUTAGENICITY OF ACRYLONITRILE BUTADIENE AND STYRENE

DE MESTER C; PONCELET F; ROBERFROID M; MERCIER M

MUTAT RES 64 (2). 1979 132 Coden: MUREA

Descriptors: ABSTRACT SALMONELLA-TYPHIMURIUM TA-1530 TA-1535 TA-100 STRAINS RAT MOUSE HUMAN S-9 LIVER MICROSOME AMES TEST VINYL CHLORIDE AROCLOR 1254 PHENO BARBITAL METHYL-3 CHOLANTHRENE METABOLIC-DRUG FOOD PACKAGING

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); GENETICS/C-

YTOGENET-ANIMAL(+03506); GENETICS/CYTOGENET-HUMAN(+03508); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); ENZYMES-METHODS(10804); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); FOOD TECH-PREP,PROCESSNG,STORAGE(+13532); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); PHARMACOL-DRUG METAB,METAB STIMU(+22003); PHARMACOL-DIGESTIVE SYST(22014); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); BACTERIAL AND VIRAL GENETICS(31500); MICROBIOLOG APPARAT,METHS,MEDIA(32000)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); HOMINIDAE(86215); MURIDAE(86375)

17049157

EFFECT OF CHRONIC VINYL CHLORIDE POISONING ON THE REGULATION OF CARBOHYDRATE METABOLISM

KURLYANDSKI B A; KLOCHKOVA S I; ROTENBERG YU S; TOMILINA L A; STOVBUR N N

GIG TR PROF ZABOL (7). 1978 54-55 Coden: GTPZA

Descriptors: NOTE RAT SUGAR INSULIN

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR(10068); METABOLISM-GENL STUD,METAB PATHW(13002); METABOLISM-CARBOHYDRATES(+13004); ENDOCRINE SYST-PANCREAS(+17008); TOXICOL-GENL/EXP STUDS,METHS(+22501)

Biosystematic Codes: MURIDAE(86375)

17048603

CURRENT METHODS FOR DETERMINATION OF AIR POLLUTION ON INDUSTRIAL PREMISES

ALEKPEROV I I; KYAZIMOVA G P

AZERB MED ZH (3). 1978 49-54 Coden: AZMZA

Descriptors: HUMAN RUBBER POLY VINYL CHLORIDE LINOLEUM ALUNITE CHROMATOGRAPHY SPECTROPHOTOMETRY PHOTO COLORIMETRY POLAROGRAPHY

Concept Codes: ECOLOGY-BIOCLIMATOL,BIOMETEOROL(+07504); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(+10504); MOVEMENT(12100); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

17047148

GAS CHROMATOGRAPHIC DETERMINATION OF VINYL CHLORIDE LEVELS IN THE BLOOD OF TREATED LABORATORY ANIMALS AND THE EFFECT OF VINYL CHLORIDE MONOMER ON DIFFERENT TOXICOLOGICAL PARAMETERS

HOLLO A; KNEFFEL Z; VARGA L

PROC HUNG ANNU MEET BIOCHEM 18. 1978 97-98 Coden: PHABD

Descriptors: ABSTRACT RAT RABBIT PSYCHO PHYSIOLOGICAL CHANGE NEURO TOXICITY CYTOCHROME P-450 IMMUNO SUPPRESSION

Concept Codes: BEHAVIOR BIOL-ANIMAL BEHAVIOR(07003); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); BIOCHEM STUD-PORPHYRINS,BILE PIGM(10065); ENZYMES-GEN,COMPAR STUD,COENZYMES(+10802); NERVOUS SYST-PATHOL-OGY(+20506); PSYCHIATRY-PSYCHPATH-DYMN,THERAP(+21002); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(2-2506); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508)

Biosystematic Codes: LEPORIDAE(86040); MURIDAE(86375)

17042685

THE KINETICS OF POST REPLICATION REPAIR IN MAMMALIAN CELLS AS STUDIED BY THE ALKALINE ELUTION TECHNIQUE

MEYN R E; FLETCHER S E

J SUPRAMOL STRUCT 7 (SUPPL 2). 1978 17 Coden: JSPMA

Descriptors: ABSTRACT CHINESE HAMSTER CELL CYCLO HEXIMIDE UV LIGHT ALKALINE SUCROSE GRADIENT EDTA TETRA PROPYL AMMONIUM HYDRO CHLORIDE POLY VINYL CHLORIDE FILTER

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); GENETICS/CYTOGENET-ANIMAL(+03506); MATHEMATIC BIOL/STATISTIC METH(04500); RADIATION BIOL-RADTN,ISOTOP TECH(06504); RADIATION BIOL-RADTN EFF,PROTECT(+06506); BIOCHEM METH-NUCL ACID,PURNS,P-YRM(10052); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID,PURNS,PYRM(10062); BIOCHEM STUD-CARBOHYDR.(10068); REPLICATN,TRANSCRIPTN,TRANSLATN(+10300); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); MOVEMENT(12100); METABOLISM-NUCL ACID,PURINS,PYRIM(+13014); PHARMACOL-DRUG METAB,METAB STIMU(+22003); TISS CULTURE-APPARAT,METHS,MEDIA(32500); PEST CONTRL GENL/PESTICS/HERBICS(54600)

Biosystematic Codes: MAMMALIA-UNSPECIFIED AND EXTINCT(85700); CRICETIDAE(86310); ABSTRACTS OF MYCOLOGY(95000)

17041411

THE ROLE OF SINGLET OXYGEN IN THE PHOTO OXIDATION OF POLYMERS

RABEK J F; RANBY B

PHOTOCHEM PHOTOBIOL 28 (4/5). 1978 557-570 Coden: PHCBA

Descriptors: MICROWAVE GENERATOR POLY DIENE POLY STYRENE POLY VINYL CHLORIDE QUENCHERS CAROTENE AMINE SUBSTITUTED PHENOL METAL CHELATE

Concept Codes: RADIATION BIOL-RADTN,ISOTOP TECH(06504); ECOLOGY-BIOCLIMATOL,BIOMETEOROL(+07504); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-VITAMINS(10063); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); BIOCHEM STUD-LIPIDS(10066); MINERALS(10069); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); EXTERN EFF-LIGHT,DARKNESS(10604); TOXICOL-ENVIRONMNTL,INDUSTR(+22506)

; ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

17040664

FORMATION OF ETHENO DERIVATIVES OF NUCLEIC-ACID BASES IN-VIVO BY METABOLITES OF VINYL CHLORIDE

LAIB R J; OTTENWAELDER H; BOLT H M

HOPPE-SEYLER'S Z PHYSIOL CHEM 359 (3). 1978 293 Coden: HSZPA

Descriptors: RAT CARCINOGENIC MUTAGENIC ADENINE CYTOSINE RNA DNA

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); GENETICS/CYTOGENET-ANIMAL(+03506); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID,PURNS,PYRM(10062); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM-NUCL ACID,PURINS,PYRIM(+13014); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: MURIDAE(86375)

17036152

BACTERIOLOGY OF MINERAL WATERS INFLUENCE OF POLY VINYL CHLORIDE ON THE GROWTH OF PSEUDOMONAS-AERUGINOSA AND PSEUDOMONAS-FLUORESCENS

MASSON A; MICHEL R; RICHOUZ E

EXPERIENTIA (BASEL) 34 (12). 1978 1665-1666 Coden: EXPEA

Descriptors: ABSTRACT PLASTIC FILM DEGRADATION

Concept Codes: ECOLOGY-LIMNOLOGY(+07514); ECOLOGY-WATR RESRCH,FISHERY BIOL(07517); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); BACTERIA-PHYSIOLOGY,BIOCHEMISTRY(+31000); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015); FOOD/INDUS MICRO-FD/BEV SP CNTAM(+39002); FOOD/INDUS MICRO-BIODEGRAD,DETER(+39006)

Biosystematic Codes: PSEUDOMONADACEAE(04716)

17029971

INDOCYANINE GREEN CLEARANCE AS THE PROSPECTIVE INDICATOR OF
HEPATO CELLULAR CHEMICAL TOXICITY

TAMBURRO C H; CREECH J L; DAVIS A; GREENBERG R A
GASTROENTEROLOGY 75 (5). 1978 989 Coden: GASTA
Descriptors: ABSTRACT HUMAN WORKER OCCUPATIONAL EXPOSURE
VINYL CHLORIDE DIAGNOSTIC-DRUG GASTROINTESTINAL-DRUG
Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(02508); SOCIAL
BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060);
ANATOMY/HISTOL-MICRO,ULTRAMICRSC(11108); METABOLISM-GENL STUD-
METAB PATHW(+13002); DIGESTIVE SYST-GENL STUDS,METHS(+14001);
DIGESTIVE SYST-PATHOLOGY(+14006); PHARMACOL-CLINICAL PHARMACOL-
L(22005); PHARMACOL-DIGESTIVE SYST(+22014); TOXICOL-GENL/EXP
STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEO-
PLSMS/NEOPL AGNTS-CARCINOGENS(24007); ENVIRON HEALTH-OCCUPATNL
HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)
Biosystematic Codes: HOMINIDAE(86215)

17029849

URINARY GLYCOSAMINO GLYCAN PATTERNS IN HUMAN HEPATIC ANGIO
SARCOMA HEPATOMA AND IN WORKERS AT RISK FOR ANGIO SARCOMA

CURRAN K L; KUPCHELLA C E; SANDOZ J; TAMBURRO C H
GASTROENTEROLOGY 75 (5). 1978 959 Coden: GASTA
Descriptors: ABSTRACT URINE VINYL CHLORIDE CARCINOGEN ANION
EXCHANGE CHROMATOGRAPHY
Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); CLIN
BIOCHEM-GENL STUDIES(10006); BIOCHEM METH-PROTNS,PEPTDS,AM
AC(10054); BIOCHEM METH-CARBOHYDRATES(10058); BIOCHEM
STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO
ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-GENERAL
BIOPHYS TECH(10504); MOVEMENT(12100); METABOLISM-CARBOHYDRATE-
S(+13004); METABOLISM-PROTNS,PEPTDS,AM ACDS(+13012); DIGESTIVE
SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+1450-
8); URIN SYST/EXT SECR-PHYSL,BIOCHEM(15504); TOXICOL-ENVIRONM-
NTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006);
NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCU-
PATNL HEALTH(+37013)
Biosystematic Codes: HOMINIDAE(86215)

17029687

CONTROL STATUS OF VINYL CHLORIDE

WYATT S
TEX REP BIOL MED 37. 1978 (RECD 1979) 145-151 Coden:
TRBMA
Descriptors: HUMAN CARCINOGEN AIR POLLUTANT CLEAN AIR ACT
Concept Codes: GENL BIOL-INSTITUT,ADMIN,LEGISLN(+00508);
SOCIAL BIOL/HUMAN ECOLOGY(05500); COMPARATIVE BIOCHEM-GENL
STUDIES(10010); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10-
060); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL
AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)
Biosystematic Codes: HOMINIDAE(86215)

17029686

HEALTH EFFECTS OF VINYL CHLORIDE

TAMBURRO C H
TEX REP BIOL MED 37. 1978 (RECD 1979) 126-143 Coden:
TRBMA
Descriptors: ANIMAL HUMAN LIVER TUMORS CARCINOGEN ANESTHETIC
ENVIRONMENTAL EXPOSURE DIAGNOSIS
Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); CYTOLOGY/C-
YTOCHEM-HUMAN(+02508); SOCIAL BIOL/HUMAN ECOLOGY(05500);
BIOCHEM STUD-GENERAL(10060); PATHOLOGY-DIAGNOSTIC(12504);
PATHOLOGY-THERAPY(12512); DIGESTIVE SYST-GENL STUDS,METHS(140-
01); DIGESTIVE SYST-PATHOLOGY(+14006); NERVOUS SYST-GENL
STUDS,METHS(20501); PHARMACOL-CLINICAL PHARMACOL(22005);
PHARMACOL-NEUROPHARMACOLOGY(+22024);
TOXICOL-PHARMACOLOGICAL(+22504);
TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-DIA-
GNS METH(+24001); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007);
ENVIRON HEALTH-OCCUPATNL HEALTH(37013)
Biosystematic Codes: MAMMALIA-UNSPECIFIED AND EXTINCT(85700)
; HOMINIDAE(86215)

17028726

POPULATION EXPOSURE TO TOXIC SUBSTANCES USE OF 1970 CENSUS
DATA

LANDAU E; CONIGLIO W
J. AIR POLLUT CONTROL ASSOC 29 (3). 1979 249-251 Coden:
JPCAA
Descriptors: HUMAN VINYL CHLORIDE INDUSTRIAL POLLUTANT
Concept Codes: ECOLOGY-BIOCLIMATOL,BIOMETEOROL(+07504);
BIOCHEM STUD-GENERAL(10060); TOXICOL-ENVIRONMNTL,INDUSTR(+225-
06); PUB HEALTH-ADMINISTR,STATISTICS(+37010); ENVIRON
HEALTH-AIR,WATR,SL POLLN(+37015)
Biosystematic Codes: HOMINIDAE(86215)

17028154

POLY VINYL CHLORIDE PYROLYSIS PRODUCTS AS A CAUSE OF SMALL
AIRWAY DYS FUNCTION IN MEAT WRAPPERS ASTHMA

SCHWARTZ H J; PRESTEL T F JR; CHESTER E H; TUTHILL T M;
BARANCIK G; BOZICH T
J ALLERGY CLIN IMMUNOL 63 (3). 1979 152 Coden: JACIB
Descriptors: ABSTRACT HUMAN
Concept Codes: BIOCHEM-GASES(10012); EXTERN EFF-EIOT(10618);
RESPIRATORY SYST-PATHOLOGY(+16006); TOXICOL-ENVIRONMNTL,INDUS-
TR(+22506); TEMPERATURE-GENL,METHS(23001); IMMUNOL/IMMUNOCHEM-
-IMMUNOPATHOL(+34508); ALLERGY(+35500); ENVIRON HEALTH-OCCUPA-
TNL HEALTH(+37013)
Biosystematic Codes: HOMINIDAE(86215)

17027801

CHLOROPRENE 2 CHLORO-1 3 BUTADIENE WHAT IS THE EVIDENCE FOR ITS CARCINOGENICITY

HALEY T J

WINEK, CHARLES L. AND SYDNEY P. SHANOR (ED.). TOXICOLOGY ANNUAL, VOL. 3. XII+340P. ILLUS. MARCEL DEKKER, INC.: NEW YORK, N.Y., USA; BASEL, SWITZERLAND. ISBN 0-8247-6773-X. 1979 153-170 Coden: 07223

Descriptors: HUMAN RAT MOUSE NERVOUS SYSTEM VINYL CHLORIDE CARCINOGEN OCCUPATIONAL EXPOSURE MIXED FUNCTION OXIDASE NERVOUS SYSTEM EFFECTS LUNG CANCER SKIN CANCER DENTAL EFFECTS

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); BIOPHYS-MOLECUL PROP, MACROMOLEC(10506); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); METABOLISM-GENL STUD, METAB PATHW(+13002); RESPIRATORY SYST-GENL STUD, METHS(16001); RESPIRATORY SYST-PATHOLOGY(+16006); INTEGUMENT SYST-GENL STUDS, METHS(18501); INTEGUMENT SYST-PATHOLOGY(+18506); DENTAL/ORAL BIOL-GENL STUD, METHS(19001); DENTAL/ORAL BIOL-PATHOLOGY(+19006); NERVOUS SYST-GENL STUDS, METHS(20501); NERVOUS SYST-PATHOLOGY(+20506); ROUTES OF IMMUNIZ, INFECT, THERAP(22100); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); EPIDEMIOLOG-ORGANIC DIS, NEOPLASMS(37054)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

17027402

TRI CHLOROETHYLENE

FELDMAN R G

VINKEN, P. J. AND G. W. BRUYN (ED.). HANDBOOK OF CLINICAL NEUROLOGY, VOL. 36. INTOXICATIONS OF THE NERVOUS SYSTEM. PART 1. XII+570P. ILLUS. ELSEVIER/NORTH-HOLLAND BIOMEDICAL PRESS: AMSTERDAM, THE NETHERLANDS; NEW YORK, N.Y., USA. (DIST. IN THE USA BY ELSEVIER/NORTH-HOLLAND, INC.: NEW YORK, N.Y.) ISBN 0-7204-7236-9. 1979 457-464 Coden: 07183

Descriptors: HUMAN RAT GUINEA-PIG SENSATION LOSS PSYCHO PHYSIOLOGY NEUROPATHY INDUSTRIAL SOLVENT

Concept Codes: BEHAVIOR BIOL-HUMAN BEHAVIOR(07004); BIOCHEM STUD-GENERAL(10060); PATHOLOGY-COMPARATIVE(12503); METABOLISM-GENL STUD, METAB PATHW(13002); NERVOUS SYST-PATHOLOGY(+20506); PSYCHIATRY-PSYCHOPATH-DYNN, THERAP(+21002); PSYCHIATRY-PSYCHOPHYSIOLOGY(21003); TOXICOL-ENVIRONMNTL, INDUSTR(+22506)

Biosystematic Codes: HOMINIDAE(86215); CAVIIDAE(86300); MURIDAE(86375)

17021875

HYGIENIC ASSESSMENT OF FILMS INTENDED FOR HYDRO INSULATION OF ASSEMBLY LINE SWIMMING POOLS

KYPYROV V N; KAPLINA T V; GAKAL R K; VINARSKAYA E I; STARCHENKO S N; KONOVALOV V S; KOLESNIKOV M M
GIG SANIT (5). 1978 91-93 Coden: GISAA

Descriptors: MICRO FLORA RAT WARM BLOODED ANIMAL POLY VINYL CHLORIDE GENETIC EFFECT WATER QUALITY

Concept Codes: GENETICS/CYTOGENET-ANIMAL(+03506); ECOLOGY-WATR RESRCH, FISHERY BIOL(07517); BIOCHEM STUD-GENERAL(10060); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); MICROORGANISMS-GENL, MIXED, UNSPEC(29500); ENVIRON HEALTH-AIR, WATR, SL POLLN(+37015)

Biosystematic Codes: MICROORGANISMS-UNSPECIFIED(01000); MAMMALIA-UNSPECIFIED AND EXTINCT(85700); MURIDAE(86375)

17018086

A WATER EXTRACTABLE TOXIC COMPOUND IN VINYL UPHOLSTERY FABRIC

AHRENS V D; HENION J D; MAYLIN G A; LEIBOVITZ L; ST JOHN L E JR; LISK D J

BULL ENVIRON CONTAM TOXICOL 20 (3). 1978 418-422 Coden: BECTA

Descriptors: CARASSIUS-AURATUS POLY VINYL CHLORIDE TRI PHENYL PHOSPHATE NEUROLOGIC INTOXICATION HISTO PATHOLOGIC LESION DEATH

Concept Codes: ECOLOGY-ANIMAL(+07508); ECOLOGY-LIMNOLOGY(07514); ECOLOGY-WATR RESRCH, FISHERY BIOL(07517); ANATOMY/HISTOL-MICRO, ULTRAMICRSC(11108); PATHOLOGY-NECROSIS(12510); NERVOUS SYST-PATHOLOGY(+20506); TOXICOL-ENVIRONMNTL, INDUSTR(+22506)

Biosystematic Codes: OSTEICHTHYES(85206)

17009459

MAINTENANCE OF PERMANENTLY IMPLANTED CARDIAC PRESSURE CATHETERS IN EXPERIMENTAL ANIMALS

CHITWOOD W R JR; HILL R C; WECHSLER A S

ANN THORAC SURG 26 (5). 1978 485-488 Coden: ATISA

Descriptors: DOG HEPARIN ANTICOAGULANT THROMBOSIS POLY VINYL CHLORIDE THORACOTOMY

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(10511); ANATOMY/HISTOL-EXPERIMENTAL(+11104); CHORDATE BODY REGNS-THOR-AX(11312); PHYSIOLOGY-INSTRUMENTATION(12004); CARDIOVASC SYST-GENL STUDS, METHS(+14501); CARDIOVASC SYST-BLD VESS PATHOL(+14508); PHARMACOL-BLOOD, HEMATO AGENTS(22008); PHARMACOL-CARDIOVASC SYST(22010)

Biosystematic Codes: CANIDAE(85765)

17008652

THE IMPORTANCE OF NONLINEAR DOSE DEPENDENT PHARMACO KINETICS IN HAZARD ASSESSMENT

WATANABE P G; YOUNG J D; GEHRING P J

J ENVIRON PATHOL TOXICOL 1 (2). RECD 1977 147-159 Coden: JEPTD

Descriptors: RAT HUMAN VINYL CHLORIDE CARCINOGEN EXPOSURE HAZARD BIO TRANSFORMATION EXCRETION PROTEIN BINDING

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); SOCIAL BIOL/HUMAN ECOLOGY(05500); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); PHYSIOLOGY-COMPARATIVE(12003); METABOLISM-GENL STUD.METAB PATHW(+13002); METABOLISM-PROTNS, PEPTDS, AM ACDS(+13012); URIN SYST/EXT SECR-PATHOLOGY(15506); TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-BIO-CHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR, WATR, SL POLLN(+37015)

Biosystematic Codes: MAMMALIA-UNSPECIFIED AND EXTINCT(85700); HOMINIDAE(86215); MURIDAE(86375)

17008348

METABOLIC ACTIVATION AND DISPOSITION OF VINYL CHLORIDE IN-VIVO AND IN-VITRO

BOLT H M; LAIB R J; FILSER J

J ENVIRON PATHOL TOXICOL 2 (1). 1978 221 Coden: JEPTD

Descriptors: ABSTRACT RAT LIVER CARCINOGEN NADPH POLY ADENYLIC-ACID

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD, PURNS, PYRM(10062); ENZYMES-GEN, COMPAR STUD, COEN-ZYMS(+10802); METABOLISM-GENL STUD.METAB PATHW(+13002); DIGESTIVE SYST-PHYSIOL, BIOCHEM(+14004); TOXICOL-GENL/EXP STUDS, METHS(+22501); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); IN VITRO STUDS-CELLULR, SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

17006926

VINYL CHLORIDE DISEASE

JOHNSTON E N M

BR J DERMATOL SUPPL 99 (16). 1978 45-48 Coden: BJDSA

Descriptors: ABSTRACT HUMAN RAYNAUDS PHENOMENON IMMUNE COMPLEX VASCULITIS COMPLEMENT C-3 IMMUNO GLOBULIN G OCCUPATIONAL HAZARD

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); BIOCHEM STUD-CARBOHY-DR.(10068); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(15002); NERVOUS SYST-PATHOLOGY(+20506); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); ALLERGY(+35500); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215)

17004087

FACTOR-VIII CONTENT AS EVIDENCE FOR ENDOTHELIAL ORIGIN OF VINYL CHLORIDE ASSOCIATED LIVER ANGIO SARCOMA

FORTWENGLER H P; JONES O; TAMBURRO C H; ESPINOSA E

FED PROC 38 (3 PART 1). 1979 999 Coden: FEPR

Descriptors: ABSTRACT IMMUNO FLUORESCENCE

Concept Codes: MICROSCOPY-HISTOL, HISTOCHEM TECH(01056); CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); DIGESTIVE SYST-GENL STUDS, METHS(14001); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(+15002); BLOOD/BODY FLDS-LYMPHAT TISS, RES(15008); TOXICOL-GENL/EXP STUDS, METHS(+22501); NEOPLSMS/NEOPL AGNTS-CELL LINE(24005); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); IMMUNOL/IMMUNOCHEM-GEN METH(34502)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150)

17004076

REACTIVITY OF HUMAN ALPHA THROMBIN ADSORBED ON ARTIFICIAL SURFACES

CHUANG H Y K; MOHAMMAD S F; SHARMA N C; MASON R G

FED PROC 38 (3 PART 1). 1979 997 Coden: FEPR

Descriptors: ABSTRACT GLASS CUPROPHANE POLY VINYL CHLORIDE CLOTTING ACTIVITY ESTERASE ACTIVITY ANTI THROMBIN ANTIBODY IMMUNO GLOBULIN G

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(02508); RADIATION BIOL-RADTN, ISOTOP TECH(06504); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(+15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(15004); IMMUNOL/IMMUNOCHEM-GEN METH(+34502); IMMUNOL/IMMUNOCHEM-IMMUNOHEMATOL(34506)

Biosystematic Codes: HOMINIDAE(86215)

17001129

A TERATOLOGIC EVALUATION OF PLASMA SOLUBLE EXTRACTS OF POLY VINYL CHLORIDE PLASTICS IN RATS

CHEN T S; FERNANDES J; LEWANDOWSKI M

FED PROC 38 (3 PART 1). 1979 438 Coden: FEPR

Descriptors: ABSTRACT GROSS EXTERNAL SKELETAL VISCERAL DEFECTS PL-130 PL-146 DI ETHYLHEXYL PHTHALATE

Concept Codes: BIOCHEM STUD-GENERAL(10060); PATHOLOGY-GENERAL STUDIES(12502); BONE, JNTS, FASC, CONN/ADIP-PATHOL(18006); TOXICOL-GENL/EXP STUDS, METHS(+22501); DEVELOPMNTL BIOL-PATHOLOGICAL(+25503); DEVELOPMNTL BIOL-EXPER TERATOL(+25554)

Biosystematic Codes: MURIDAE(86375)

16059797

WATERBORNE DISEASE CURRENT THREAT

COOPER R C

GROUND WATER 17 (2). 1979 192-196 Coden: GRWAA

Descriptors: ESCHERICHIA-COLI VIRUS MAN MORTALITY INFECTIOUS DISEASE CANCER ASBESTOS VINYL CHLORIDE DIELDRIN HEPTACHLOR DOT LINDANE INSECTICIDE CHLOROFORM TRI CHLORO ETHYLENE DRINKING WATER TREATMENT

Concept Codes: ECOLOGY-OCEANOGRAPHY, LIMNOLOGY(*07510); ECOLOGY-LIMNOLOGY(07514); ECOLOGY-WATR RESRCH, FISHERY BIOL(07-517); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); BIOPHYS-BIOENGINEERING(10511); PATHOLOGY-NECROSIS(12510); TOXICOL-ENVIRONMNTL, INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); MED/CLIN MICROBIOL-BACTERIOLOGY(*36002); MED/CLIN MICROBIOL-VIROLOGY(*36006); PUB HEALTH-GENL, MISCELL(*37001); ENVIRON HEALTH-SEWG DISP, SANITAR(*37014); ENVIRON HEALTH-AIR, WATR, SL POLLN(*37015); EPIDEMIOL-COMMUNICABLE DISEASES(37052); PUB HEALTH-INANIMATE DIS VECTORS(*37060); PUB HEALTH MICROBIOL(37400); PEST CONTRL GENL/PESTICS/HERBICS(*54-600); ECONOM ENTOMOL-CHEM PHYS CONTRL(60016)

Biosystematic Codes: MICROORGANISMS-UNSPECIFIED(01000); ANIMAL VIRUSES-UNSPECIFIED(02200); ENTEROBACTERIACEAE(04810); HOMINIDAE(86215); ABSTRACTS OF ENTOMOLOGY(96000)

16058095

ANALYSIS OF FOOD

SAXBY M J

LENIHAN, JOHN AND WILLIAM W. FLETCHER (ED.), ENVIRONMENT AND MAN, VOL. 7. MEASURING AND MONITORING THE ENVIRONMENT. XII+131P. ILLUS. ACADEMIC PRESS, INC., NEW YORK, N.Y., USA. ISBN 0-12-443507-6. 1978 (RECD 1979) 14-36 Coden: 07128

Descriptors: FOOD ADDITIVES MYCO TOXIN INSECTICIDE HERBICIDE FUNGICIDE FUMIGANT POLY CHLORINATED BI PHENYL METAL POLY CHLORO DI BENZO-P-DIOXIN VINYL CHLORIDE NITROSAMINES CARCINOGENS

Concept Codes: BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(*-10050); BIOCHEM METH-MINERALS(*10059); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); FOOD TECH-GENL STUDS, METHS(*13502); FOOD TECH-EVALNS PHYS, CHEM PROPS(*13530); FOOD TECH-SYNTH, SUPPL, ENRICH FDS(*13534); TOXICOL-FOOD, RESIDS, ADDIT, PRESRV(*22502); TOXICOL-ENVIRONMNTL, INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); MED/CLIN MICROBIOL-MYCOLOGY(*36008); FOOD/INDUS MICRO-FD/BEV SP CNTAM(*39002); PLANT PHYSIOL-GROWTH SUBSTANCES(51514); AGRONOMY-WEEDS AND WEED CONTROL(52518); PEST CONTRL GENL/PESTICS/HERBICS(*54600); ECONOM ENTOMOL-CHEM PHYS CONTRL(60016)

Biosystematic Codes: ORGANISMS-UNSPECIFIED(00500); FUNGI-UNSPECIFIED(15000); ABSTRACTS OF MYCOLOGY(95000); ABSTRACTS OF ENTOMOLOGY(96000)

16055149

NEURO HUMORAL INTERRELATIONSHIPS IN PATIENTS WITH CHRONIC VINYL CHLORIDE POISONING

CORMACHEVA L A; STILOVA E A

GIG TR PROF ZABOL (1). 1978 23-27 Coden: GTPZA

Descriptors: NERVOUS PROBLEM HISTAMINE CATECHOLAMINE CALCIUM POTASSIUM ION ACETYL CHOLINE CHOLIN ESTERASE SEROTONIN BLOOD

Concept Codes: CLIN BIOCHEM-GENL STUDIES(10006); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACD(10064); MINERALS(10069); BIOPHYS-MOLECUL PROP, MACROMOLEC(*10506); ENZYMES-PHYSIOLOGICAL STUDIES(10808); METABOLISM-GENL STUD, METAB PATHW(13002); MINERALS(13010); METABOLISM-PROTNS, PEPTDS, AM ACDS(13012); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(15002); NERVOUS SYST-PATHOLOGY(*20506); TOXICOL-GENL/EXP STUDS, METHS(*-22501); TOXICOL-ENVIRONMNTL, INDUSTR(22506)

Biosystematic Codes: HOMINIDAE(86215)

16054523

SCANNING ELECTRON MICROSCOPIC OBSERVATIONS OF FORMED BLOOD ELEMENTS ON PLASTIC SURFACES

WILKINSON R F

J CELL BIOL 75 (2 PART 2). 1977 412A Coden: JCLBA

Descriptors: ABSTRACT HUMAN ERYTHROCYTES LEUKOCYTES PLATELETS EXTRACORPOREAL CIRCULATION POLY VINYL CHLORIDE TUBING POLY URETHANE THROMBOGENIC POTENTIAL

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(02508); BIOCHEM STUD-GENERAL(10060); BIOPHYS-BIOENGINEERING(*10511); CARDIOVASC SYST-GENL STUDS, METHS(*14501); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(*15004); BLOOD/BODY FLDS-BLD, LYM, RES PATH(*15006); BLOOD/BODY FLDS-LYMPHAT TISS, RES(*15008)

Biosystematic Codes: HOMINIDAE(86215)

16048951

THE USE OF PARITY SURVIVORSHIP ANALYSIS IN THE STUDY OF REPRODUCTIVE OUTCOME

DOBBINS J G; EIFLER C W; BUFFLER P A

AM J EPIDEMIOL 108 (3). 1978 245 Coden: AJEPÄ

Descriptors: ABSTRACT HUMAN VINYL CHLORIDE CARCINOGEN MUTAGEN TERATOGEN LIFE TABLE ANALYSIS

Concept Codes: GENETICS/CYTOGENET-HUMAN(*03508); MATHEMATIC BIOL/STATISTIC METH(04500); SOCIAL BIOL/HUMAN ECOLOGY(05500); PATHOLOGY-NECROSIS(12510); REPRODUCT SYST-PATHOLOGY(*16506); TOXICOL-GENL/EXP STUDS, METHS(*22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); DEVELOPMNTL BIOL-PATHOLOGICAL(*25503); DEVELOPMNTL BIOL-DESCRIP TERATOL(*25552); PUB HEALTH-ADMINISTR, STATISTICS(37010); ENVIRON HEALTH-OCCUPATNL HEALTH(37013)

Biosystematic Codes: HOMINIDAE(86215)

16048950

BIRTH DEFECTS MONITORS CAN THEY ANSWER THE RIGHT QUESTIONS

HARLAP S

AM J EPIDEMIOL 108 (3). 1978 245 Coden: AJEPA

Descriptors: ABSTRACT HUMAN SEX HORMONE VINYL CHLORIDE INFECTION EPIDEMIOLOGY TERATOGENESIS

Concept Codes: GENETICS/CYTOGENET-SEX DIFFERENC(03510); PHYSICAL ANTHROPOLOGY/ETHNOBIOL(05000); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-STEROLS, STEROIDS(10067); PATHOLOGY-DIAGNOSTIC(12504); METABOLISM-STEROLS, STEROIDS(13008); ENDOCRINE SYST-GONADS, PLACENTA(+17006); TOXICOL-GENL/EXP STUDS, METHS(+22501); PEDIATRICS(25000); DEVELOPMNTL BIOL-DESCRIP TERATOL(+25552); MED/CLIN MICROBIOL-GEN, METH, TECH(36001); PUB HEALTH-HEALTH SERV, MEDL CARE(+37012); EPIDEMIOLOG-MISCELL STUDIES(37056)

Biosystematic Codes: MICROORGANISMS-UNSPECIFIED(01000); HOMINIDAE(86215)

16048855

ENVIRONMENTAL SOURCES OF CHEMICAL MUTAGENS PART 2 SYNTHETIC MUTAGENS

FISHBEIN L

FLAMM, W. GARY AND MYRON A. MEHLMAN (ED.). ADVANCES IN MODERN TOXICOLOGY, VOL. 5. MUTAGENESIS. XII+401P. ILLUS. HEMISPHERE PUBLISHING CORPORATION: WASHINGTON, D.C., USA; LONDON, ENGLAND (DIST. BY HALSTED PRESS/WILEY & SONS, INC.: NEW YORK, N.Y., USA.). ISBN 0-470-99393-6. 1978 257-348 Coden: 06983

Descriptors: REVIEW HUMAN HALOGENATED HYDRO CARBON VINYL CHLORIDE VINYLIDENE CHLORIDE TRI CHLORO ETHYLENE TETRA CHLORO ETHYLENE CHLOROPRENE CARBON TETRA CHLORIDE FLUORO CARBON POLY CHLORINATED BI PHENYLCHLORO DIOXIN HALO ETHER CHLORINE BROMO ALKANE FLUORINE DDT INSECTICIDES PHTHALATE ESTER ARSENIC LEAD MERCURY

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(+02508); GENETICS/CYTOGENET-HUMAN(+03508); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID, PURINS, PYRM(10062); MINERALS(10069); METABOLISM-NUCL ACID, PURINS, PYRM(+13014); TOXICOL-GENL/EXP STUDS, METHS(2-2501); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); ENVIRON HEALTH-AIR, WATR, SL POLLN(+37015); PEST CONTRL GENL/PESTICS/HERBICS(546-00); ECONOM ENTOMOL-CHEM PHYS CONTRL(60016)

Biosystematic Codes: HOMINIDAE(86215); ABSTRACTS OF ENTOMOLOGY(96000)

16048850

THE SALMONELLA MICROSOME MUTAGENICITY TEST PREDICTIVE VALUE FOR ANIMAL CARCINOGENICITY

MCCANN J; AMES B N

FLAMM, W. GARY AND MYRON A. MEHLMAN (ED.). ADVANCES IN MODERN TOXICOLOGY, VOL. 5. MUTAGENESIS. XII+401P. ILLUS. HEMISPHERE PUBLISHING CORPORATION: WASHINGTON, D.C., USA; LONDON, ENGLAND (DIST. BY HALSTED PRESS/WILEY & SONS, INC.: NEW YORK, N.Y., USA.). ISBN 0-470-99393-6. 1978 87-108 Coden: 06983

Descriptors: HUMAN DNA AFLA TOXIN B-1 VINYL CHLORIDE ASBESTOS CHLOROPRENE COAL TAR CARCINOGENS

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); CYTOLOGY/CYTOCHEM-HUMAN(02508); GENETICS/CYTOGENET-ANIMAL(+03506); GENETICS/CYTOGENET-HUMAN(+03508); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID, PURINS, PYRM(10062); MINERALS(10069); METABOLISM-NUCL ACID, PURINS, PYRM(+13014); TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); BACTERIAL AND VIRAL GENETICS(+31500); MICROBIOLOG APPARAT, METHS, MEDIA(32000); IN VITRO STUDS-CELLUL-R, SUBCELL(32600); MED/CLIN MICROBIOL-MYCOLOGY(+36008); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); DEUTEROMYCETES(15500); ANIMALIA-UNSPECIFIED(33000); HOMINIDAE(86215)

16047306

HYGIENIC EVALUATION OF WORK CONDITIONS OF WORKERS DURING THE WELDING OF POLY VINYL CHLORIDE LINOLEUM FLOOR COVERING WITH THE SEMI AUTOMATIC PCHLKA

KRAEV B G

GIG TR PROF ZABOL 12. 1977 (RECD 1978) 43-44 Coden: GTPZA

Descriptors: USSR HUMAN AIR TOXIC SUBSTANCES VENTILATION
Concept Codes: BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(1-0060); RESPIRATORY SYST-GENL STUD, METHS(16001); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); ENVIRON HEALTH-OCCUPATNL HEALTH(+3701-3)

Biosystematic Codes: HOMINIDAE(86215)

16047304

COMPARATIVE HYGIENIC EVALUATION OF WORK CONDITIONS IN PLASTER CASTING AND POLY VINYL CHLORIDE FROM SECTIONS OF THE DULEVO PORCELAIN FACTORY

DUPLYANKIN S A

GIG TR PROF ZABOL 12. 1977 (RECD 1978) 40-41 Coden: GTPZA

Descriptors: USSR HUMAN DUST KEROSENE VAPOR
Concept Codes: BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(1-0060); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR, WATR, SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

16046180

CONTRIBUTION TO THE DETECTION AND ASSAY OF VINYL CHLORIDE
EVENTUALLY PRESENT IN AQUEOUS INJECTABLE SOLUTIONS CONTAINED
IN VINYL POLY CHLORIDE BAGS

ROLLET M; GUFEDIN A

ANN PHARM FR 36 (3/4). 1978 169-177 Coden: APFRA

Descriptors: DIRECT GAS CHROMATOGRAPHY GAS SOLID THERMO
CHROMATOGRAPHY

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010);
BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060);
BIOPHYS-GENERAL BIOPHYS TECH(+10504); BIOPHYS-MOLECUL
PROP,MACROMOLEC(10506); MOVEMENT(12100); ROUTES OF
IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+2-
2501)

16044661

PATHOGENESIS OF CARDIO VASCULAR DYS FUNCTION IN CHRONIC
VINYL CHLORIDE INTOXICATION

KURLYANDSKII B A; TOMILINA L A; DUKHOVNAYA A I; STOVBUR N N
GIG SANIT (2). 1978 104-105 Coden: GISAA

Descriptors: ALBINO RAT EPINEPHRINE PITUITRIN HORMONE-DRUG
CARDIOVASCULAR-DRUG

Concept Codes: GENETICS/CYTOGENET-ANIMAL(03506); BIOPHYS-GE-
NERAL BIOPHYS TECH(10504); PATHOLOGY-DIAGNOSTIC(12504);
CARDIOVASC SYST-GENL STUDS,METHS(14501); CARDIOVASC SYST-BLD
VESS PATHOL(+14508); ENDOCRINE SYST-ADRENALS(+17004);
ENDOCRINE SYST-NEUROENDOCRINOLOG(+17020); NERVOUS SYST-PATHOL-
OGY(+20506); PHARMACOL-CARDIOVASC SYST(+22010); PHARMACOL-END-
OCRINE SYST(+22016); TOXICOL-GENL/EXP STUDS,METHS(+22501);
TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARC-
INOGENS(24007)

Biosystematic Codes: MURIDAE(86375)

16043888

THE MUTAGENIC ACTIVITY OF HALOGENATED COMPOUNDS FOUND IN
CHLORINATED DRINKING WATER

SIMMON V F; TARDIFF R G

JOLLEY, ROBERT L., HEND GORCHEV AND D. HEYWARD HAMILTON, JR.
(ED.). WATER CHLORINATION. ENVIRONMENTAL IMPACT AND HEALTH
EFFECTS. VOL. 2. PROCEEDINGS OF THE 2ND CONFERENCE.
GATLINBURG, TENN., USA. OCT. 31-NOV. 4, 1977. XVIII:1909P.
ILLUS. MAPS. ANN ARBOR SCIENCE PUBLISHERS, INC.: ANN ARBOR,
MICH., USA. ISBN 0-250-40201-7. 1978 417-431 Coden: 06969

Descriptors: SALMONELLA-TYPHIMURIUM RAT VINYL CHLORIDE
VINYLIDENE CHLORIDE 1 2 DI CHLORO ETHANE 1 1 2 TRI CHLORO
ETHYLENE-BIS-2-CHLOROETHYL ETHER METHYL IODIDE BROMOFORM
CARBON TETRA CHLORIDE CHLOROFORM CARCINOGENS

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); GENETICS/CY-
TOGENET-ANIMAL(+03506); ECOLOGY-LIMNOLOGY(+07514); ECOLOGY-WA-
TR RESRCH,FISHERY BIOL(07517); BIOCHEM STUD-GENERAL(10060);
MINERALS(10069); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506);
DENTAL/ORAL BIOL-GENL STUD,METHS(19001); ROUTES OF
IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+2-
2501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL

AGNTS-CARCINOGENS(+24007); BACTERIAL AND VIRAL GENETICS(+3150-
0); MICROBIOLOG APPARAT,METHS,MEDIA(32000); ENVIRON
HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); MURIDAE(863-
75)

16040187

DE TOXIFICATION OF PESTICIDES AND HAZARDOUS WASTES BY THE
MICROWAVE PLASMA PROCESS

BAILIN L J; HERTZLER B L; OBERACKER D A

KENNEDY, MAURICE V. (ED.). ACS (AMERICAN CHEMICAL SOCIETY)
SYMPOSIUM SERIES. VOL. 73. DISPOSAL AND DECONTAMINATION OF
PESTICIDES. A SYMPOSIUM AT THE 174TH MEETING OF THE AMERICAN
CHEMICAL SOCIETY. CHICAGO, ILL., AUG. 29-SEPT. 2, 1977.
VII:158P. ILLUS. AMERICAN CHEMICAL SOCIETY: WASHINGTON, D.C.,
USA. ISBN 0-8412-0443-0. 1978 49-72 Coden: 06794

Descriptors: NITROSAMINE VINYL CHLORIDE VINYLIDENE CHLORIDE
CARCINOGEN MERCURY ARSENIC CADMIUM LEAD NERVE POISON

Concept Codes: GENETICS/CYTOGENET-GENL STUDIES(+03502);
RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM METH-GENERAL-
(10050); BIOCHEM STUD-GENERAL(+10060); NERVOUS SYST-PATHOLOGY-
(20506); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRO-
NMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+2400-
7); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015); PEST CONTRL
GENL/PESTICS/HERBICS(+54600)

Biosystematic Codes: ORGANISMS-UNSPECIFIED(00500)

16039351

TERATOLOGIC EVALUATION OF VINYL CHLORIDE VINYLIDENE CHLORIDE
AND STYRENE IN LABORATORY ANIMALS

JOHN J A; MURRAY F J; SMITH F A; SCHWETZ B A

TERATOLOGY 17 (2). 1978 48A Coden: TJA0A

Descriptors: ABSTRACT MOUSE RAT RABBIT INHALATION GAVAGE
DRINKING WATER

Concept Codes: BIOCHEM STUD-GENERAL(10060); NUTRITION-GENL-
NUTR STATUS,METHS(13202); DIGESTIVE SYST-GENL STUDS,METHS(140-
01); RESPIRATORY SYST-GENL STUD,METHS(16001); ROUTES OF
IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+2-
2501); DEVELOPMNTL BIOL-EXPER TERATOL(+25554)

Biosystematic Codes: LEPORIDAE(86040); MURIDAE(86375)

16039228

EFFECTS OF PLASTIC POLYMER SURFACES ON THE LIQUID PRESERVATION OF HUMAN GRANULOCYTES

CONTRERAS T J; JEMIONEK J F; FRENCH J E; SHIELDS L J

TRANSFUSION (PHILA) 18 (5), 1978 650-651 Coden: TRANA

Descriptors: ABSTRACT POLYMORPHONUCLEAR CELLS GRAM NEGATIVE SEPTICEMIA TRANSFUSION POLY VINYL CHLORIDE

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(02508); BIOCHEM STUD-GENERAL(10060); PATHOLOGY-THERAPY(12512); BLOOD/BODY FLDS-GENL STUDS,METHS(+15001); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004); BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006); BLOOD/BODY FLDS-LYMPHAT TISS,RES(+15008); MED/CLIN MICROBIOL-BACTERIOLOGY(36002)

Biosystematic Codes: BACTERIA-UNSPECIFIED(04000); HOMINIDAE-(86215)

16039179

IN-VITRO FUNCTION AND IN-VIVO VIABILITY OF STORED PLATELET CONCENTRATES THE EFFECT OF A STABILIZER COMPONENT OF POLY VINYL CHLORIDE STORAGE BAGS

LINDBERG J E; CARMEN R A; SCHROEDER D D; NELSON E J

TRANSFUSION (PHILA) 18 (5), 1978 634-635 Coden: TRANA

Descriptors: ABSTRACT TETRA HYDRO FURFURYL OLEATE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM STUD-GENERAL(10060); BLOOD/BODY FLDS-GENL STUDS,METHS(+15001); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150)

16026728

INHALATION CARCINOGENESIS

NELSON N

FUKUSHIMA, YOICHI (ED.). SCIENCE FOR BETTER ENVIRONMENT. PROCEEDINGS OF THE INTERNATIONAL CONGRESS ON THE HUMAN ENVIRONMENT (HESC), KYOTO, JAPAN, NOV. 17-26, 1975. XIV+992P. ILLUS. MAPS. PERGAMON PRESS: NEW YORK, N.Y., USA; OXFORD, ENGLAND. ISBN 0-08-021948-9. 1977 (RECD 1978) 505-510 Coden: 06445

Descriptors: HUMAN BENZENE NICKEL CARBONYL MUSTARD GAS VINYL CHLORIDE CHLOROPRENE BIS CHLOROMETHYL ETHER CARCINOGENS AIR POLLUTION OCCUPATIONAL EXPOSURE LUNG CANCER

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); RESPIRATORY SYST-PHYSIOL,BIOCHEM(16004); RESPIRATORY SYST-PATHOLOGY(+16006); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

16026727

TOXICOLOGY OF CHLORINATED SOLVENTS

HENSCHLER D

FUKUSHIMA, YOICHI (ED.). SCIENCE FOR BETTER ENVIRONMENT.

PROCEEDINGS OF THE INTERNATIONAL CONGRESS ON THE HUMAN ENVIRONMENT (HESC), KYOTO, JAPAN, NOV. 17-26, 1975. XIV+992P. ILLUS. MAPS. PERGAMON PRESS: NEW YORK, N.Y., USA; OXFORD, ENGLAND. ISBN 0-08-021948-9. 1977 (RECD 1978) 496-504 Coden: 06445

Descriptors: HUMAN TRI CHLORO ETHYLENE TETRA CHLORO ETHYLENE VINYL CHLORIDE 1 2 DI CHLORO ETHANE PER CHLORO ETHYLENE 1 1 1 TRI CHLORO ETHANE CARBON TETRA CHLORIDE METHYLENE CHLORIDE METHYL CHLORIDE CHLOROFORM CARCINOGENS OCCUPATIONAL EXPOSURE METABOLIC TRANSFORMATION

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(+13002); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGENTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215)

16026726

PROBLEMS IN THE INTERPRETATION OF LIVER NODULES

STERNBERG S S

FUKUSHIMA, YOICHI (ED.). SCIENCE FOR BETTER ENVIRONMENT. PROCEEDINGS OF THE INTERNATIONAL CONGRESS ON THE HUMAN ENVIRONMENT (HESC), KYOTO, JAPAN, NOV. 17-26, 1975. XIV+992P. ILLUS. MAPS. PERGAMON PRESS: NEW YORK, N.Y., USA; OXFORD, ENGLAND. ISBN 0-08-021948-9. 1977 (RECD 1978) 494-495 Coden: 06445

Descriptors: HUMAN ARSENIC MINERAL OIL BETA NAPHTHYLAMINE BENZIDINE ASBESTOS CHROMATE PHENACETIN THOROTRAST VINYL CHLORIDE CARCINOGENS SKIN BLADDER RENAL LUNG TUMORS

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); RADIATION BIOL-RADTN,ISOTOP TECH(06504); RADIATION BIOL-RAQTN EFF,PROTECT(+06506); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-LIPIDS(10066); MINERALS(10069); PATHOLOGY-THERAPY(12512); DIGESTIVE SYST-PATHOLOGY(+14006); URIN SYST/EXT SECR-PATHOLOGY(+15506); RESPIRATORY SYST-PATHOLOGY(+16006); INTEGUMENT SYST-PATHOLOGY(+18506); PHARMACOL-GENERAL STUDIES(+22002); PHARMACOL-CLINICAL PHARMACOL(22005); TOXICOL-PHARMACOLOGICAL(+22504); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

16024842

THE INTERACTION BETWEEN FOODS AND PACKING AND ITS SIGNIFICANCE FOR EUROPEAN LEGISLATION

VOM BRUCK C G; ECKERT W R; FIGGE K; KOCH J; RUDOLPH F B
MITT GEB LEBENSMITTELUNTERS HYG 69 (1). 1978 20-41

Coden: MGLHA

Descriptors: POLY ETHYLENE POLY VINYL CHLORIDE POLY STYROL RUBBER

Concept Codes: GENL BIOL-INSTITUT,ADMIN,LEGISLN(*00508);
BIOCHEM STUD-GENERAL(10060); FOOD TECH-GENL STUDS,METHS(*1350-
2); FOOD TECH-EVALNS PHYS,CHEM PROPS(*13530); FOOD
TECH-PREP,PROCESSNG,STORAGE(*13532);
TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(22502)

16023009

INVESTIGATIONS OF DI-2 ETHYLHEXYL PHTHALATE IN BLOOD PREPARATIONS STORED IN POLY VINYL CHLORIDE SACKS/

PICK J; BREUER K J; ZSDANSZKY-ENGE L; PINTER-KRAMER J
ACTA PHARM HUNG 48 (5). 1978 230-235 Coden: APHGA

Concept Codes: BIOCHEM METH-GENERAL(*10050); BIOCHEM
STUD-GENERAL(10060); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(*15002);
PHARMACOL-BLOOD,HEMATO AGENTS(*22008)

16021475

CONFERENCE ON COMPARATIVE METABOLISM AND TOXICITY OF VINYL CHLORIDE RELATED COMPOUNDS OVERVIEW AND SUMMARY

MURPHY S D
ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 327-328

Coden: EVHPA

Descriptors: HUMAN WORKERS ANIMAL MUTAGENS CARCINOGENS
Concept Codes: GENL BIOL-SYMPOSIA,PROCDNGS,REVW(00520);
GENETICS/CYTOGENET-ANIMAL(03506);
GENETICS/CYTOGENET-HUMAN(*03508); SOCIAL BIOL/HUMAN ECOLOGY(0-
5500); COMPARATIVE BIOCHEM-GENL STUDIES(*10010); BIOCHEM
STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(*13002);
TOXICOL-GENL/EXP STUDS,METHS(*22501); TOXICOL-ENVIRONMNTL,IND-
USTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007);
ENVIRON HEALTH-OCCUPATNL HEALTH(*37013); ENVIRON HEALTH-AIR,W-
ATR,SL POLLN(*37015)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150); HOMINID-
AE(86215)

16021468

MUTAGENIC AND CARCINOGENIC RISKS ASSOCIATED WITH HALOGENATED OLEFINS

INFANTE P F
ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 251-254

Coden: EVHPA

Descriptors: MOUSE RAT HUMAN SALMONELLA-TYPHIMURIUM
DROSOPHILA VINYL CHLORIDE VINYLIDENE CHLORIDE TRI CHLORO
ETHYLENE CARCINOGENS OCCUPATIONAL EXPOSURE CHROMOSOMAL
ABERRATIONS LUNG CYTOL CANCER

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(*02506); GENETICS/C-
YTOGENET-ANIMAL(*03506); SOCIAL BIOL/HUMAN ECOLOGY(05500);
BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(-
10506); RESPIRATORY SYST-PATHOLOGY(*16006); INTEGUMENT
SYST-PATHOLOGY(*18506); TOXICOL-GENL/EXP STUDS,METHS(*22501);
TOXICOL-ENVIRONMNTL,INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CAR-
CINOGENS(*24007); BACTERIAL AND VIRAL GENETICS(*31500);
MICROBIOLOG APPARAT,METHS,MEDIA(32000); ENVIRON HEALTH-OCCUPA-
TNL HEALTH(*37013); INVERTB PHYSIOL-INSECTA-PATHOL(*64078)

Biosystematic Codes: ENTEROBACTERIACEAE(04810); DIPTERA(753-
14); HOMINIDAE(86215); MURIDAE(86375)

16021453

EFFECT OF ETHANOL AND VINYL CHLORIDE ON THE INDUCTION OF LIVER TUMORS PRELIMINARY REPORT

RADIKE M J; STEMMER K L; BROWN P G; LARSON E; BINGHAM E
ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 153-155

Coden: EVHPA

Descriptors: RAT CARCINOGENS ANGIO SARCOMA HEPATO CELLULAR
CARCINOMA

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM
STUD-GENERAL(10060); DIGESTIVE SYST-PATHOLOGY(*14006);
CARDIOVASC SYST-BLD VESS PATHOL(*14508); BONE,JNTS,FASC,CONN/-
ADIP-PATHOL(18006); PSYCHIATRY-ADDICTION(INC SMOKNG)(21004);
TOXICOL-GENL/EXP STUDS,METHS(*22501); TOXICOL-ENVIRONMNTL,IND-
USTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); ENVIRON
HEALTH-OCCUPATNL HEALTH(37013)

Biosystematic Codes: MURIDAE(86375)

16021451

DAMAGE TO HEPATIC CELLULAR MEMBRANES BY CHLORINATED OLEFINS WITH EMPHASIS ON SYNERGISM AND ANTAGONISM

REYNOLDS E S; MOSLEN M T
ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 137-147

Coden: EVHPA

Descriptors: SPRAGUE DAWLEY RAT MITOCHONDRIA CHROMATIN TRI
CHLORO ETHYLENE VINYL CHLORIDE PER CHLORO ETHYLENE 1 1 DI
CHLORO ETHYLENE GLUTATHIONE CYTOCHROME P-450

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(*02506); BIOCHEM
STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062);
BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM
STUD-PORPHYRNS,BILE PIGM(10065); BIOPHYS-MEMBRANE PHENOMENA(*-
10508); ENZYMES-GEN,COMPAR STUD,COENZYMES(10802); DIGESTIVE
SYST-ANATOMY(14002); DIGESTIVE SYST-PATHOLOGY(*14006);
TOXICOL-GENL/EXP STUDS,METHS(*22501)

Biosystematic Codes: MURIDAE(86375)

16021446
 IRREVERSIBLE BINDING OF CHLORINATED ETHYLENES TO MACRO
 MOLECULES
 BOLT H M; FILSER J G
 ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 107-112
 Coden: EVHPA
 Descriptors: RAT RABBIT BOVINE ALBUMIN VINYL CHLORIDE TRI
 CHLORO ETHYLENE CARBON TETRA CHLORIDE CARCINOGENS
 Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM
 STUD-NUCL ACID,PURNS,PYRM(10062); BIOPHYS-MOLECUL PROP,MACROMO-
 LEC(10506); METABOLISM-GENL STUD,METAB PATHW(+13002);
 METABOLISM-PROTNS,PEPTDS,AM ACDS(+13012); TOXICOL-GENL/EXP
 STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006);
 NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)
 Biosystematic Codes: BOVIDAE(85715); LEPORIDAE(86040);
 MURIDAE(86375)

16021441
 DOMINANT LETHAL STUDIES WITH THE HALOGENATED OLEFINS VINYL
 CHLORIDE AND VINYLIDENE DI CHLORIDE IN MALE CD-1 MICE
 ANDERSON D; HODGE M C E; PURCHASE I F H
 ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 71-78
 Coden: EVHPA
 Descriptors: ETHYL METHANESULFONATE CYCLO PHOSPHAMIDE
 Concept Codes: GENETICS/CYTOGENET-ANIMAL(+03506); BIOCHEM
 STUD-GENERAL(10060); PHARMACOL-GENERAL STUDIES(22002);
 TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,IND-
 USTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007);
 NEOPLSMS/NEOPL AGNTS-THERAP,AGNT(24008); CHEMOTHERAPY-GEN
 STUD,METH,METAB(38502)
 Biosystematic Codes: MURIDAE(86375)

16021438
 COMPARATIVE MAMMALIAN METABOLISM OF VINYL CHLORIDE AND
 VINYLIDENE CHLORIDE IN RELATION TO ONCOGENIC POTENTIAL
 HATHWAY D E
 ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 55-59
 Coden: EVHPA
 Descriptors: MOUSE RAT CARCINOGEN DNA BINDING
 Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM
 STUD-NUCL ACID,PURNS,PYRM(10062); PHYSIOLOGY-COMPARATIVE(+1200-
 3); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM-NUCL
 ACID,PURINS,PYRM(+13014); TOXICOL-GENL/EXP STUDS,METHS(+22501)
 ; NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL
 AGNTS-CARCINOGENS(+24007)
 Biosystematic Codes: MAMMALIA-UNSPECIFIED AND EXTINCT(85700)
 ; MURIDAE(86375)

16021434
 INHALATION TOXICITY OF VINYL CHLORIDE AND VINYLIDENE
 CHLORIDE
 LEE C-C; BHANDARI J C; WINSTON J M; HOUSE W B; PETERS P J;

DIXON R L; WOODS J S
 ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 25-32
 Coden: EVHPA
 Descriptors: MOUSE RAT MAMMARY GLAND LIVER LUNG KIDNEY
 DISEASES CARCINOMAS
 Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM
 STUD-GENERAL(10060); PATHOLOGY-GENERAL STUDIES(12502);
 PATHOLOGY-INFLAMMATN,INFLAM DIS(12508); PATHOLOGY-NECROSIS(12-
 510); DIGESTIVE SYST-PATHOLOGY(+14006); BLOOD/BODY
 FLDS-LYMPHAT TISS,RES(15008); URIN SYST/EXT SECR-PATHOLOGY(+1-
 5506); RESPIRATORY SYST-PATHOLOGY(+16006); REPRODUCT
 SYST-PATHOLOGY(16506); TOXICOL-ENVIRONMNTL,INDUSTR(+22506);
 NEOPLSMS/NEOPL AGNTS-PATH,CLINIC(+24004); NEOPLSMS/NEOPL
 AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-AIR,WATR,SL POLLN(+
 37015)
 Biosystematic Codes: MURIDAE(86375)

16021431
 RECENT FINDINGS ON THE CARCINOGENICITY OF CHLORINATED
 OLEFINS
 MALTONI C
 ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 1-5
 Coden: EVHPA
 Descriptors: RAT MOUSE HAMSTER VINYL CHLORIDE VINYLIDENE
 CHLORIDE STYRENE ACRYLO NITRILE DI CHLORO ETHANE CHLORO FLUORO
 CARBONS TRI CHLORO ETHYLENE CARBON TETRA CHLORIDE VINYLIDENE
 FLUORIDE CARCINOGENS SKIN MAMMARY LEUKEMIA FORE STOMACH TUMORS
 LYMPHOMA
 Concept Codes: BIOCHEM STUD-GENERAL(10060); DIGESTIVE
 SYST-PATHOLOGY(+14006); BLOOD/BODY FLDS-BLD,LYM,RES PATH(+150-
 06); BLOOD/BODY FLDS-LYMPHAT TISS,RES(+15008); REPRODUCT
 SYST-PATHOLOGY(+16506); INTEGUMENT SYST-PATHOLOGY(+18506);
 TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,IND-
 USTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007);
 NEOPLSMS/NEOPL AGNTS-BLOOD,RES(+24010); ENVIRON HEALTH-OCCUPA-
 TNL HEALTH(37013)
 Biosystematic Codes: CRICETIDAE(86310); MURIDAE(86375)

16021430

PROCEEDINGS OF THE CONFERENCE ON COMPARATIVE METABOLISM AND TOXICITY OF VINYL CHLORIDE RELATED COMPOUNDS MAY 2-4 1977

FALK H L

ENVIRON HEALTH PERSPECT (21). 1977 (RECD 1978) 1-328

Coden: EVHPA

Descriptors: SYMPOSIUM

Concept Codes: GENL BIOL-SYMPOSIA, PROCDNGS, REVW(+00520);
COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL-
(10060); METABOLISM-GENL STUD, METAB PATHW(+13002);
TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ENVIRONMNTL, IND-
USTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007)

16020671

POLY VINYL CHLORIDE PARTICLE IMPLANTATION IN MOUSE LIVER A TECHNIQUE FOR EXPERIMENTAL STUDY OF SCHISTOSOME EGG INDUCED LIVER PATHOLOGY

JOKY A; CORNU M; LOUIS D; GRIMAUD J A

EXPERIENTIA (BASEL) 34 (4). 1978 547-548 Coden: EXPEA

Descriptors: SCHISTOSOMA-MANSONI PORTAL GRANULOMA

Concept Codes: BIOCHEM STUD-GENERAL(10060); ANATOMY/HISTOL--
REGEN, TRANSPLANT(11107); PATHOLOGY-INFLAMMATN, INFLAM DIS(1250-
8); DIGESTIVE SYST-GENL STUDS, METHS(14001); DIGESTIVE
SYST-PATHOLOGY(+14006); CARDIOVASC SYST-GENL STUDS, METHS(1450-
1); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); IMMUNOLOGY-PARAS-
ITOLOGICAL(+35000); PARASITOLOGY-GENERAL(+60502); INVERIB
PHYSIOL-PLATYHELMINTHES(64010)

Biosystematic Codes: TREMATODA(45200); MURIDAE(86375)

16019835

ELECTRO ENCEPHALOGRAPH CHANGES IN WORKERS ENGAGED IN VINYL CHLORIDE PRODUCTION

DINCHEVA E; GAVRILENKO T

ELECTROENCEPHALOGR CLIN NEUROPHYSIOL 44 (2). 1978 260
Coden: ECNEA

Descriptors: ABSTRACT HUMAN FATIGUE HEAD ACHE SLEEP DISORDERS VINYL CHLORIDE DISEASE

Concept Codes: BEHAVIOR BIOL-HUMAN BEHAVIOR(07004); BIOCHEM
STUD-GENERAL(+10060); BIOPHYS-GENERAL BIOPHYS TECH(10504);
CHORDATE BODY REGNS-HEAD(11304); PATHOLOGY-DIAGNOSTIC(12504);
NERVOUS SYST-PHYSIOL, BIOCHEM(20504); NERVOUS SYST-PATHOLOGY(+
20506); PSYCHIATRY-PSYCHPATH-DYMN, THERAP(21002); PSYCHIATRY-P-
SYCHOPHYSIOLOGY(+21003); ENVIRON HEALTH-OCCUPATNL HEALTH(+370-
13)

Biosystematic Codes: HOMINIDAE(86215)

16019679

SCLERODERMA PATHOGENIC FACTORS AND CURRENT MANAGEMENT

PENNY R

AUST N Z J MED 8 (SUPPL 1). 1978 143-148 Coden: ANZJB

Descriptors: HUMAN NEPHROPATHY VASCULAR DISEASE EMOTIONAL STRESS POLY VINYL CHLORIDE TOXICITY DIALYSIS

Concept Codes: BEHAVIOR BIOL-HUMAN BEHAVIOR(07004); BIOCHEM
STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504);
PHYSIOLOGY-STRESS(12008); MOVEMENT(12100); PATHOLOGY-GENERAL
STUDIES(12502); PATHOLOGY-DIAGNOSTIC(12504); PATHOLOGY-THERAP-
Y(12512); CARDIOVASC SYST-BLD VESS PATHOL(14508); URIN
SYST/EXT SECR-GENL STUD, METH(15501); URIN SYST/EXT
SECR-PATHOLOGY(+15506); BONE, JNTS, FASC, CONN/ADIP-GENL(18001);
BONE, JNTS, FASC, CONN/ADIP-PATHOL(+18006); INTEGUMENT SYST-GENL
STUDS, METHS(18501); INTEGUMENT SYST-PATHOLOGY(+18506); NERVOUS
SYST-PHYSIOL, BIOCHEM(20504);
PSYCHIATRY-PSYCHOPHYSIOLOGY(+21003);
TOXICOL-ENVIRONMNTL, INDUSTR(+22506);
IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); ENVIRON HEALTH-AIR, W-
ATR, SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

16017205

LEVELS OF CARCINO EMBRYONIC ANTIGEN AMONG VINYL CHLORIDE AND POLY VINYL CHLORIDE EXPOSED WORKERS

ANDERSON H A; SNYDER J; LEWINSON T; WOO C; LILIS R; SELIKOFF I J

CANCER (PHILA) 42 (3 SUPPL). 1978 1560-1567 Coden: CANCA
Descriptors: HUMAN CARCINOGENS DIAGNOSTIC TESTING LIVER HEM
ANGIO SARCOMA

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); CLIN
BIOCHEM-GENL STUDIES(+10006); BIOCHEM METH-PROTNS, PEPTDS, AM
AC(10054); BIOCHEM METH-CARBOHYDRATES(10058); BIOCHEM
STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO
ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); PATHOLOGY-DIAGNOS-
TIC(+12504); METABOLISM-CARBOHYDRATES(13004); METABOLISM-PROT-
NS, PEPTDS, AM ACDS(13012); DIGESTIVE SYST-GENL STUDS, METHS(140-
01); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-GENL
STUDS, METHS(14501); CARDIOVASC SYST-BLD VESS PATHOL(+14508);
BONE, JNTS, FASC, CONN/ADIP-GENL(18001);
BONE, JNTS, FASC, CONN/ADIP-PATHOL(18006);
TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-DIA-
GNS METH(+24001); NEOPLSMS/NEOPL AGNTS-IMMUNOLOGY(+24003);
NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CA-
RCINOGENS(+24007); DEVELOPMNTL BIOL-GENL, DESCRIPTIVE(+25502);
ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215)

16014183

DECISION MAKING IN THE REGULATION OF CHEMICALS

BROOKS E M

JOLLEY, ROBERT L. (ED.). WATER CHLORINATION. ENVIRONMENTAL IMPACT AND HEALTH EFFECTS. VOL. 1. PROCEEDINGS OF THE CONFERENCE ON THE ENVIRONMENTAL IMPACT OF WATER CHLORINATION. DAK RIDGE, TENN. USA, OCT. 22-24, 1975. XVI+439P. ILLUS. ANN ARBOR SCIENCE PUBLISHERS, INC.: ANN ARBOR, MICH., USA. ISBN 0-250-40201-7. 1978 181-194 Coden: 06655

Descriptors: HUMAN ASBESTOS VINYL CHLORIDE AFLA TOXIN

Concept Codes: GENL BIOL-INSTITUT,ADMIN,LEGISLN(+00508); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); MED/CLIN MICROBIOL-MYCOLOGY(36008); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015); PLANT PHYSIOL-CHEM CONSTITUENTS(51522)

Biosystematic Codes: DEUTEROMYCETES(15500); HOMINIDAE(86215)

16006569

DETERMINATION OF PLASTICIZER LEVELS IN SERUM OF HEMODIALYSIS PATIENTS

LEWIS L M; FLECHTNER T W; KERKAY J; PEARSON K H; CHEN W T; POPOWNIK K L; NAKAMOTO S

TRANS AM SOC ARTIF INTERN ORGANS (23). 1977 566-571
Codon: TAIOA

Descriptors: BIS-2 ETHYLHEXYL PHTHALATE POLY VINYL CHLORIDE

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-BIOENGINEERING(+10511); METABOLISM-GENL STUD,METAB PATHW(+13002); BLOOD/BODY FLDS-GENL STUDS,METHS(+15001); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(15002); URIN SYST/EXT SECR-GEN STUD,METH(+15501); URIN SYST/EXT SECR-PATHOLOGY(15506); TOXICOL-GENL/EXP STUDS,METHS(+22501)

Biosystematic Codes: HOMINIDAE(86215)

16006365

SPONTANEOUS DISLOCATION OF ENDO TRACHEAL TUBES

RIPOLL I; LINDHOLM C-E; CARROLL R; GRENVIK A

ANESTHESIOLOGY 49 (1). 1978 50-52 Coden: ANESA

Descriptors: HUMAN POLY VINYL CHLORIDE TUBE INTERMITTENT POSITIVE PRESSURE VENTILATION

Concept Codes: RESPIRATORY SYST-GENL STUD,METHS(+16001); RESPIRATORY SYST-PATHOLOGY(+16006)

Biosystematic Codes: HOMINIDAE(86215)

16001710

EFFECTS OF CYSTEINE DI ETHYL MALEATE AND TRI CHLORO PROPANE OXIDE ON ACUTE VINYL CHLORIDE HEPATO TOXICITY

CONOLLY R B; JAEGER R J

TOXICOL APPL PHARMACOL 45 (1). 1978 338 Coden: TXAPA

Descriptors: ABSTRACT RAT ANTIDOTES POLY CHLORINATED BI PHENYL CHLORO ETHYLENE OXIDE GLUTATHIONE EPOXIDE HYDRASE

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010);

BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PATHOLOGY(+14006); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ANTIDOTES,PREVENTIVE(+22505); TOXICOL-ENVIRONMNTL,INDUSTR(22506); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: MURIDAE(86375)

16001678

THE EFFECT OF DISULFIRAM ON VINYL CHLORIDE INDUCED CARCINOGENESIS IN MICE

WINSTON J M; BHANDARI J C; EL-HAWARI A M; SHORT R D JR; LEE C C

TOXICOL APPL PHARMACOL 45 (1). 1978 324-325 Coden: TXAPA
Descriptors: ABSTRACT ANTINEOPLASTIC-DRUG MIXED FUNCTION OXIDASE ACTIVITY HEPATIC HEM ANGIO SARCOMA BRONCHIOLO ALVEOLAR ADENOMA

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); RESPIRATORY SYST-PATHOLOGY(+16006); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ANTIDOTES,PREVENTIVE(+22505); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); NEOPLSMS/NEOPL AGNTS-THERAP,AGNT(+24008); CHEMOTHERAPY-GEN STUD,METH,METAB(+38502)

Biosystematic Codes: MURIDAE(86375)

16001651

AN ATTEMPT TO CORRELATE THE CALCULATED STABILITY OF A SERIES OF EPOXIDES WITH THE KNOWN GENO TOXIC PROPERTIES OF THEIR ALKENE PRECURSORS

MACKRODT W C; JONES R B; SALMON A G; ASHBY J

TOXICOL APPL PHARMACOL 45 (1). 1978 314 Coden: TXAPA

Descriptors: ABSTRACT VINYL CHLORIDE VINYLIDENE FLUORIDE TETRA CHLORO ETHYLENE CARCINOGENICITY MUTAGENICITY

Concept Codes: GENETICS/CYTOGENET-ANIMAL(+03506); MATHEMATIC BIOL/STATISTIC METH(04500); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); BIOPHYS-BIOCYBERNETICS(10515); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150)

16001581

A COMPARISON OF THE ACUTE INHALATION TOXICITY OF HYDROGEN CHLORIDE VS THE THERMAL DECOMPOSITION PRODUCTS OF POLY VINYL CHLORIDE

BARROW C S; LUCIA H; ALARIE Y

TOXICOL APPL PHARMACOL 45 (1), 1978 284 Coden: TXAPA

Descriptors: ABSTRACT MOUSE SENSORY IRRITATION STRESS INDEX HISTO PATHOLOGY ACUTE LETHALITY

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(-10506); EXTERN EFF-HOT(10618); PHYSIOLOGY-STRESS(+12008); PATHOLOGY-INFLAMMATN,INFLAM DIS(12508); PATHOLOGY-NECROSIS(12-510); SENSE ORGANS-PATHOLOGY(+20006); NERVOUS SYST-PATHOLOGY(+20506); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRON-NMNTL,INDUSTR(22506); TEMPERATURE-GENL,METHS(23001); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: MURIDAE(86375)

16001447

RESOLUTION OF DOSE RESPONSE TOXICITY DATA FOR CHEMICALS REQUIRING METABOLIC ACTIVATION USING VINYL CHLORIDE AS AN EXAMPLE

GEHRING P J; WATANABE P G; PARK C N

TOXICOL APPL PHARMACOL 45 (1), 1978 225 Coden: TXAPA

Descriptors: ABSTRACT RAT CARCINOGENICITY BIO TRANSFORMATION HEPATIC ANGIO SARCOMA

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(-10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); MOVEMENT(121-00); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PATHOLOGY(+14006); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: MURIDAE(86375)

66074259

THE CHEMISTRY AND BIOGENESIS OF THE SULFUR CONTAINING METABOLITES OF VINYL CHLORIDE IN RATS

GREEN T; HATHWAY D E

CENT. TOXICOL. LAB., IMP. CHEM. IND. LTD., ALDERLEY PARK, MACCLESFIELD SK10 4TJ, CHESHIRE, ENGL., UK.

CHEM-BIOL INTERACT 17 (2), 1977 137-150. Coden: CBINA

Language: ENGLISH

In order to determine whether vinyl chloride yields chloroethylene oxide in vivo, the biogenesis of the various urinary S-containing metabolites in rats was investigated. N-Acetyl-S-(2-hydroxyethyl)cysteine is a major vinyl chloride metabolite in rats, but according to the method of protective esterification that is used, either N-acetyl-S-(2-chloroethyl)-cysteine or N-acetyl-S-(2-hydroxyethyl)-cysteine may be isolated from the body fluids. N-Acetyl-S-vinylcysteine is a 2nd related metabolite. These S-containing vinyl chloride metabolites are not mutagenic in Salmonella typhimurium. Neutral methanol methylates N-acetyl-S-(2-hydroxyethyl)cystei-

ne. N-Acetyl-S-(2-methoxyethyl)cysteine plus N-acetyl-S-vinylcysteine degrade to give the volatile S-(2-methoxyethyl)(prop-1 or 2-enyl)sulfide. Administration of several vinyl chloride metabolites and closely related compounds to rats shows that chloroacetaldehyde and S-(carboxymethyl)-cysteine, but not chloroacetic acid, lie on a pathway or pathways connecting vinyl chloride with thiodiglycollic acid. The fact that chloroacetaldehyde affords both thiodiglycollic acid and N-acetyl-S-(2-hydroxyethyl)-cysteine in the animal and that S-(carboxymethyl)cysteine has been identified amongst the hydrolytic products from an hepatic extract prepared from vinyl chloride-treated animals is consistent with the formation of chloroacetaldehyde, and with the reaction of chloroethylene oxide or chloroacetaldehyde with glutathione in the presence of a glutathione S-epoxide transferase to give the identified S-containing metabolites.

Descriptors: SALMONELLA-TYPHIMURIUM NEGATIVE MUTAGEN GLUTATHIONE S EPOXIDE TRANSFERASE CHLORO ETHYLENE OXIDE

Concept Codes: GENETICS/CYTOGENET-GENL STUDIES(+03502); BIOCHEM STUD-GENERAL(+10060); BIOCHEM STUD-PROTEINS,PEPTIDES,-AMINO ACD(10064); ENZYMES-PHYSIOLOGICAL STUDIES(10808); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); BLOOD/BODY FLDS-OTHER BODY FLDS(15010); URIN SYST/EXT SECR-PHYSL,BIOCHEM(15504); TOXICOL-GENL/EXP STUDS,METHS(+22501); BACTERIAL AND VIRAL GENETICS(31500)

Biosystematic Codes: EUBACTERIALES(07200); MURIDAE(86375)

66074199

POLY VINYL CHLORIDE FILM THERMAL DECOMPOSITION PRODUCTS AS AN OCCUPATIONAL ILLNESS PART 2 CLINICAL STUDIES

BROOKS S M; VANDERVORT R

DEP. ENVIRON. HEALTH, UNIV. CINCI., CINCINNATI, OHIO 45267, USA.

J OCCUP MED 19 (3). 1977 192-196. Coden: JOCMA

Language: ENGLISH

Exposure [occupational] to air contaminants emitted into the meat wrapping environment may produce acute health effects in some individuals. The effects relate primarily to eye, nose and throat irritation. Individuals with bronchial asthma and other types of chronic obstructive respiratory disease may develop bronchospasm as the result of exposure to the irritants emitted. It cannot be determined from these studies whether actual allergic sensitization and resultant bronchial asthma occurs from exposure to these contaminants. If actual allergic sensitization does occur, it does not appear to be common. There is a possibility that changes may occur in the small airways of the lung as the result of exposure to PVC [polyvinyl chloride] contaminants. The significance of these changes, if real, cannot be determined from the available data. The high reported prevalence of chronic respiratory symptoms in the meat wrappers studied suggests possible long-term effects from exposure to the air contaminants in the meat wrapping environment. The significance of chronic symptoms cannot be determined since in general, pulmonary function test results for individuals studied were within normal limits. Persons with bronchial asthma and clinically significant chronic obstructive pulmonary disease should avoid exposure to poorly controlled meat wrapping work environments. Efforts should be made to reduce contaminant concentrations in the meat wrapping environment.

Descriptors: HUMAN MEAT PACKAGING BRONCHIAL ASTHMA CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Concept Codes: BIOCHEM STUD-GENERAL(10060); EXTERN EFF-HOT(10618); METABOLISM-GENL STUD,METAB PATHW(13002); FOOD TECH-MEAT,MEAT BY-PRODUCTS(13516); FOOD TECH-PREP,PROCESSNG,S-TORAGE(+13532); RESPIRATORY SYST-PHYSIOL,BIOCHEM(16004); RESPIRATORY SYST-PATHOLOGY(+16006); SENSE ORGANS-PATHOLOGY(20006); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); TEMPERATURE-GENL,M-ETHS(23001); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(+34508); ALLERGY-(+35500); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

66074198

POLY VINYL CHLORIDE FILM THERMAL DECOMPOSITION PRODUCTS AS AN OCCUPATIONAL ILLNESS PART 1 ENVIRONMENTAL EXPOSURES AND TOXICOLOGY

VANDERVORT R; BROOKS S M.

DB ASSOC. INC., SALT LAKE CITY, UTAH, USA.

J OCCUP MED 19 (3). 1977 188-191. Coden: JOCMA

Language: ENGLISH

It appears that the major emissions from the hot-wire cutting of PVC [polyvinyl chloride] meat wrapping film are

di-2-ethylhexyl adipate and HCl. Di-2-ethylhexyl adipate is not a significant irritant to the skin or eye. Little information is available regarding inhalation toxicity of this compound. HCl can be detected by most persons at concentrations of 1-5 ppm. At slightly higher concentrations (5-10 ppm), it is immediately irritating and disagreeable. Thermal decomposition products of dicyclohexyl phthalate [the film label adhesive major constituent] are cyclohexanol, cyclohexyl ether, phthalic anhydride and cyclohexyl benzoate. The standard sources of criteria used to assess workroom concentrations of air contaminants are: recommended threshold limit values (TLV) and occupational health standards. TLV and federal standards have not been established for the plasticizers (di-2-ethylhexyl adipate and dicyclohexyl phthalate) and for cyclohexyl ether and cyclohexyl benzoate.

Descriptors: HUMAN MEAT PACKAGING WORKROOM PLASTICIZERS DI-2 ETHYLHEXYL ADIPATE DI CYCLO HEXYL PHTHALATE CYCLO HEXYL ETHER CYCLO HEXYL BENZOATE

Concept Codes: MATHEMATIC BIDL/STATISTIC METH(04500); BIOCHEM STUD-GENERAL(10060); EXTERN EFF-HOT(10618); METABOLISM-GENL STUD,METAB PATHW(13002); FOOD TECH-MEAT,MEAT BY-PRODUCTS(13516); FOOD TECH-PREP,PROCESSNG,STORAGE(+13532); RESPIRATORY SYST-GENL STUD,METHS(16001); INTEGUMENT SYST-PATHOLOGY(18506); SENSE ORGANS-PATHOLOGY(20006); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-FOOD,RESIDS,ADDIT,PRE-SRV(22502); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); TEMPERATURE-GENL,METHS(23001); PUB HEALTH-ADMINISTR,STATISTICS(37010); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

66072242

CARDIAC TAMPONADE CAUSED BY METASTASIZING HEM ANGIO
ENDOTHELIAL SARCOMA OF THE LIVER

SYED S; JUNG R T
 DEP. MORB. ANAT. HISTOPATHOL., JOHN BONNETT CLIN. LAB.,
 ADDENBROOKE'S HOSP. CAMBRIDGE CB2 2QQ, ENGL., UK.
 BR HEART J 40 (6). 1978 697-699. Coden: BHJUA
 Language: ENGLISH

A case of primary hemangiosarcoma of the liver with secondary deposits in the pericardium is described. The patient presented most unusually with cardiac tamponade. There was no association with vinyl chloride, thorium dioxide or As.

Descriptors: HUMAN PERI CARDIAL DEPOSITS

Concept Codes: RADIATION BIOL-RADTN, ISOTOP TECH(06504);
 RADIATION BIOL-RADTN EFF, PROTECT(06506); BIOCHEM STUD-GENERAL-
 (10060); MINERALS(10069); PATHOLOGY-THERAPY(12512); DIGESTIVE
 SYST-PATHOLOGY(+14006); CARDIOVASC SYST-HEART PATHOLOGY(+1450-
 6); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY
 FLDS-LYMPHAT TISS, RES(+15008); BONE, JNTS, FASC, CONN/ADIP-PATHO-
 L(18006); COELOM MEMBRANES, MESENTERICS, ETC(18200); PHARMACOL--
 GENERAL STUDIES(22002); PHARMACOL-CLINICAL PHARMACOL(22005);
 TOXICOL-PHARMACOLOGICAL(22504);
 TOXICOL-ENVIRONMNTL, INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-PATH-
 CLINIC(+24004); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007);
 ENVIRON HEALTH-OCCUPATNL HEALTH(37013)

Biosystematic Codes: HOMINIDAE(86215)

66070751

CHROMOSOMAL ANALYSES IN VINYL CHLORIDE EXPOSED WORKERS

PURCHASE I F H; RICHARDSON C R; ANDERSON D; PADDLE G M;
 ADAMS W G F
 CENT. TOXICOL. LAB., CENT. MED. GROUP MOND DIV., IMP. CHEM.
 IND. LTD., ALDERLEY PARK, MACCLESFIELD, CHESHIRE, ENGL., UK.
 MUTAT RES 57 (3). 1978 325-334. Coden: MUREA
 Language: ENGLISH

Chromosomal morphology from cultured peripheral lymphocytes was studied in 81 men; 57 of the men were employed in plants manufacturing vinyl chloride or polyvinylchloride, 19 were on-site controls and 5 were off-site controls. There was a significant increase in chromosomal abnormalities in the exposed workers when compared with the controls. The greatest statistically significant increase in total B cells [cells with either a chromatid break or gap or a chromosome gap] and total C cells [cells with larger chromosomal abnormalities] occurred in autoclave operators, with smaller increases in other job categories. The increase in chromosomal aberrations was correlated with the length of exposure and with a history during the year prior to sampling (1973-1974) of exposure to excursion levels of vinyl chloride. Information on smoking habits was obtained 18 mo. after blood sampling and a positive correlation between these and total C cell abnormalities was found. There was no positive correlation with various other parameters (bilirubin, platelets, gamma-glutamyltranspeptidase, alkaline phosphatase, alanine transaminase and aspartate transaminase). It was not possible to estimate which of the 3 parameters (smoking history, length of employment or exposure

to excursion levels) was the most important.

Descriptors: SMOKING AUTOCLAVE OPERATOR GAMMA GLUTAMYL TRANS
 PEPTIDASE ALKALINE PHOSPHATASE ALANINE TRANS AMINASE ASPARTATE
 TRANS AMINASE

Concept Codes: CYTOLOGY/CYTOCHEM-HUMAN(+02508); GENETICS/CY-
 TOGENET-HUMAN(+03508); BEHAVIOR BIOL-HUMAN BEHAVIOR(07004);
 BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, A-
 MINO ACD(10064); BIOCHEM STUD-PORPHYRINS, BILE PIGM(10065);
 ENZYMES-PHYSIOLOGICAL STUDIES(10808); BLOOD/BODY FLDS-BLOOD, L-
 YMPH STUD(15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(15004);
 BLOOD/BODY FLDS-LYMPHAT TISS, RES(+15008); PSYCHIATRY-ADDICTIO-
 N(INC SMOKNG)(21004); TOXICOL-GENL/EXP STUDS, METHS(22501);
 TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CAR-
 CINOGENS(+24007); TISS CULTURE-APPARAT, METHS, MEDIA(32500);
 ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); PLANT PHYSIOL-CHEM
 CONSTITUENTS(51522)

Biosystematic Codes: PLANTAE-UNSPECIFIED(11000); HOMINIDAE(-
 86215)

66070749

MUTAGENIC EFFECTS OF VINYL CHLORIDE ON DROSOPHILA-MELANOGAS-
TER WITH AND WITHOUT PRE TREATMENT WITH SODIUM PHENO
BARBITURATE

MAGNUSSON J; RAMEL C
 ENVIRON. TOXICOL. UNIT, WALLENBERG LAB., UNIV. STOCKH.,
 STOCKHOLM, SWED.
 MUTAT RES 57 (3). 1978 307-312. Coden: MUREA
 Language: ENGLISH

Treatment of D. melanogaster males with 1-20% vinyl chloride in air, a compound carcinogenic in workers at vinyl chloride plants, gave an increased frequency of complete and mosaic recessive lethals. Pretreatment with phenobarbiturate for 24 h caused an increase in the mutagenic effect of vinyl chloride. The mixed-function oxygenase system can be induced in D. melanogaster in the same way as in mammals.

Descriptors: HUMAN MAMMAL OXYGENASE SYSTEM RECESSIVE
 LETHALITY

Concept Codes: GENETICS/CYTOGENET-HUMAN(+03508); BIOCHEM-GA-
 SES(10012); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEIN-
 S, PEPTIDES, AMINO ACD(10064); ENZYMES-PHYSIOLOGICAL STUDIES(+1-
 0808); PATHOLOGY-NECROSIS(12510); TOXICOL-PHARMACOLOGICAL(225-
 04); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); ENVIRON HEALTH-OCCU-
 PATNL HEALTH(+37013); INVERTEB PHYSIOL-INSECTA-PATHOL(+64078)

Biosystematic Codes: DIPTERA(75314); MAMMALIA-UNSPECIFIED
 AND EXTINCT(85700); HOMINIDAE(86215)

66068029

SAFETY EVALUATION OF MEDICAL PLASTICS

GUESS W L

SCH. PHARM., UNIV. MISS., UNIVERSITY, MISS. 38655, USA.

CLIN TOXICOL 12 (1). 1978 77-96. Coden: CTOXA

Language: ENGLISH

At present, there is no evidence of toxicity from the use of PVC [polyvinyl chloride] plasticized plastics in medical practice. The major components of plasticized PVC were examined over a span of years, and each passing year sees a confirmation of the lack of toxicity. From time to time, misconceptions of new workers in the field may raise issues that were examined and found to no longer be issues. Considering all the factors of cost, convenience and safety, it appears that plasticized PVC containers continue to have a valuable place in medical practice.

Descriptors: REVIEW POLY VINYL CHLORIDE

Concept Codes: CLIN BIOCHEM-GENL STUDIES(+10006); BIOCHEM STUD-GENERAL(10060); TOXICOL-GENL/EXP STUDS,METHS(+22501)

were significantly increased in the early period and then started to decline. The activities of SDH and ATPase reached control values at 150 days, while those of the lysosomal enzymes remained significantly higher up to this period. Histopathologically, the pulmonary response was in the form of acute inflammatory changes during the early stages of dust burden, followed by the development of granulomatous lesions containing small amounts of stromal elements.

Descriptors: ACUTE INFLAMMATORY CHANGES GRANULOMATOUS LESIONS SUCCINIC DEHYDROGENASE ATPASE ACID PHOSPHATASE BETA GLUCURONIDASE RNASE

Concept Codes: MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,A-MINO ACD(10064); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(+11108); PATHOLOGY-INFLAMMATN,INFLAM DIS(+12508); RESPIRATORY SYST-GENL STUD,METHS(16001); RESPIRATORY SYST-PATHOLOGY(+16006); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: MURIDAE(86375)

66068007

FORMATION OF MONO ETHYLHEXYL PHTHALATE FROM DI ETHYLHEXYL PHTHALATE IN HUMAN PLASMA STORED IN POLY VINYL CHLORIDE BAGS AND ITS PRESENCE IN FRACTIONATED PLASMA PROTEINS/

VESSMAN J; RIETZ G

AB HAESSLE, FACK, S-431 20 MOLNDAL, SWED.

VOX SANG 35 (1-2). 1978 75-80. Coden: VOSAA

Language: ENGLISH

Substantial amounts of MEHP were formed, and in 10 bags from 4-56 .mu.g/ml were found. After 2 wk at room temperature the concentration of MEHP had increased to values between 27 and 79 .mu.g/ml. MEHP was also disappearing as shown in a recovery experiment. Of the fractionated proteins, albumin contained MEHP in amounts from < 3-290 .mu.g/g.

Concept Codes: BIOCHEM STUD-GENERAL(10060); EXTERN EFF-TEMPERATURE(10614); BLOOD/BODY FLDS-GENL STUDS,METHS(+150-01); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(+15002); TOXICOL-GENL/EXP STUDS,METHS(+22501); TEMPERATURE-GENL,METHS(23001)

Biosystematic Codes: HOMINIDAE(86215)

66067902

SOME BIOCHEMICAL AND HISTO PATHOLOGICAL CHANGES INDUCED BY POLY VINYL CHLORIDE DUST IN RAT LUNG

AGARWAL D K; KAW J L; SRIVASTAVA S P; SETH P K

IND. TOXICOL. RES. CENT., MAHATMA GANDHI MARG, POST BOX 80, LUCKNOW 226001, U.P., INDIA.

ENVIRON RES 16 (1-3). 1978 333-341. Coden: ENVRA

Language: ENGLISH

Enzymatic and pathomorphologic alterations in rat lungs were studied at different time intervals up to 180 days after a single intratracheal administration of 25 mg of polyvinyl chloride dust. The activities of 2 energy-linked enzymes, succinic dehydrogenase (SDH) and ATPase, and 3 lysosomal

66067891

PORTAL HYPERTENSION IN VINYL CHLORIDE MONOMER WORKERS A HEMODYNAMIC STUDY

BLENDIS L M; SMITH P M; LAWRIE B W; STEPHENS M R; EVANS W D
TORONTO GEN. HOSP., UNIV. WING, ROOM 112, 585 UNIVERSITY
AVE., TORONTO, ONT. M5G 1L7, CAN.

GASTROENTEROLOGY 75 (2). 1978 206-211. Coden: GASTA

Language: ENGLISH

Hemodynamic studies were performed in 5 vinyl chloride monomer workers in whom splenomegaly or thrombocytopenia was detected during a screening program at a major chemical plant. Three patients had portal hypertension and collateral venous circulations, with intrasplenic pressures between 20 and 29 mm Hg and normal wedged hepatic venous pressures, but the gradient between the wedged and free hepatic vein pressures was also increased. Splenic blood flows were increased in both hypertensive and normotensive patients. There was no correlation between the splenic blood flow and the portal pressure or the presence of portal fibrosis. The portal hypertension associated with vinyl chloride exposure is mainly presinusoidal in type, and may be attributed to an abnormality of the portal vein radicles or hepatic sinusoids. [Possible medico-legal implications were also considered.]

Descriptors: SPLENOMEGALY THROMBOCYTOPENIA MEDICO LEGAL IMPLICATIONS

Concept Codes: GENL BIOL-FORENSIC SCIENCE(00531); CYTOLOGY/CYTOCHEM-HUMAN(02508); SOCIAL BIOL/HUMAN ECOLOGY(055-00); BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); MOVEMENT(12100); DIGESTIVE SYST-PATHOLOGY(*14006); CARDIOVASC SYST-BLD VESS PATHOL(*14508); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(15002); BLOOD/BODY FLDS-BLOOD CELL STUDS(15004); BLOOD/BODY FLDS-BLD,LYM,RES PATH(*15006); BLOOD/BODY FLDS-LYMPHAT TISS,RES(15008); BONE,JNTS,FASC,CONN/-ADIP-PATHOL(18006); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); ENVIRON HEALTH-OCCUPATNL HEALTH(*37013); ENVIRON HEALTH-AIR,WATR,-SL POLLN(*37015)

Biosystematic Codes: HOMINIDAE(86215)

toxicity of DEHP is very low (> 20 g/kg as LD50 in rats), and the ester is rapidly metabolized to products which are excreted in the urine and bile; chronic toxicity from the levels of dosage obtaining is thus very improbable. Carcinogenicity has never been demonstrable in animals, while teratological effects are of a very low order. Serious acute results observed after transfusion of neonates have not been proved to be caused by DEHP, and might be ascribable to accompanying foreign substances. Atheroma in chronic dialysis subjects is still unexplained, but hepatitis probably caused by diethylphthalate from plastic was resolved when apparatus plasticized by DEHP alone was substituted. The benefits of DEHP appear vastly to outweigh any risks. The status of DEHP as environmental contaminant is noted.

Descriptors: RAT HUMAN ENVIRONMENTAL CONTAMINANT MEDICAL EQUIPMENT

Concept Codes: CLIN BIOCHEM-GENL STUDIES(*10006); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-LIPIDS(10066); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(*13002); DIGESTIVE SYST-PHYSIOL,BIOCHEM(1400-4); DIGESTIVE SYST-PATHOLOGY(14006); CARDIOVASC SYST-BLD VESS PATHOL(14508); BLOOD/BODY FLDS-GENL STUDS,METHS(*15001); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(*15002); URIN SYST/EXT SECR-PHYSL,BIOCHEM(15504); TOXICOL-GENL/EXP STUDS,METHS(*2250-1); TOXICOL-ENVIRONMNTL,INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); DEVELOPMNTL BIOL-DESCRIP TERATOL(25-552); ENVIRON HEALTH-AIR,WATR,SL POLLN(*37015)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

66061718

DI ETHYLHEXYL PHTHALATE AS A FACTOR IN BLOOD TRANSFUSION AND HEMO DIALYSIS

BAKER R W R

DEP. CHEM. PATHOL., GUY'S HOSP. MED. SCH., LONDON S.E. 19RT, ENGL., UK.

TOXICOLOGY 9 (4). 1978 319-330. Coden: TXCYA

Language: ENGLISH

Di-2-ethylhexyl phthalate (DEHP), the most frequently occurring plasticizer in medical equipment manufactured from polymers of vinyl chloride, forms about 40% wt/wt of tubes and containers used for storing blood and for hemodialysis. The plasticizer leaches out into liquids with lipid contents, although it is very sparingly soluble in purely aqueous solutions. On infusion of 2-3 l of stored blood, up to 200 mg DEHP may be transferred to the patient, while much higher quantities may be given during dialysis, which is moreover often repeated frequently over long periods. The acute

66061675

COMPARISON OF THE FATE OF VINYL CHLORIDE FOLLOWING SINGLE AND REPEATED EXPOSURE IN RATS

WATANABE P G; ZEMPEL J A; GEHRING P J
TOXICOL. RES. LAB., HEALTH ENVIRON. RES., DOW CHEM. USA,
MIDLAND, MICH. 48640, USA.

TOXICOL APPL PHARMACOL 44 (2). 1978 391-400. Coden:
TXAPA

Language: ENGLISH

Rats were exposed by inhalation to 5000 ppm of nonlabeled vinyl chloride (VC) 6 h/day, 5 days/wk for 7 wk. On the last day of repeated exposure 14C-labeled VC was used. The fate of the [14C]VC was compared in a group of rats exposed repeatedly to a group exposed simultaneously for a single 6 h period to 5000 ppm of [14C]VC. The routes and rates of excretion of 14C activity were the same for the 2 experimental groups. The activity of microsomal enzymes, as reflected by aniline hydroxylase and p-nitroanisole O-demethylase derived from 9000 g liver supernatants, was essentially the same in rats exposed once or repeatedly or in nonexposed control rats. Covalent binding to hepatic macromolecules was greater in rats repeatedly exposed as compared to those subjected to a single exposure. Repeated exposure to VC does not induce its biotransformation. The increase in hepatic macromolecular binding indicates that repeated exposure augments the reaction of electrophilic metabolites with macromolecules, and this may be expected to enhance potential toxicity including carcinogenicity.

Descriptors: LIVER CARCINOGENICITY MICROSOMAL ENZYMES

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MEMBRANE PHENOMENA(10508); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004); RESPIRATORY SYST-GENL STUD,METHS(16001); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: MURIDAE(86375)

66061583

HYGIENIC SAFETY PROBLEMS IN THE DOMESTIC USE OF FLUORINE HYDRO CARBON PROPELLANTS IN AEROSOL CONTAINERS

BULGAKOV V V; SLOBODSKOI D S

A.N. MARZEEV KIEV RES. INST. GEN. PUBLIC HYG., KIEV, USSR.

GIG SANIT (4). 1977 22-25. Coden: GISAA

Language: RUSSIAN

To determine the possibility of using fluorine hydrocarbons as propellants in aerosol packing, use of certain freons and their mixtures is suggested, as well as of mixtures of freons with dimethyl ether, methylene is suggested, vinyl chloride, propane, etc. Hygienic investigations should be carried out with due regard for the presumed field of use of aerosol packing and should include determination of parameters of acute toxicity of samples, the threshold value of their acute

and chronic action on the body and their action on the skin and the mucous membranes of the eyes of animals and man. [Guinea pigs were used.]

Descriptors: GUINEA-PIG ANIMALS HUMAN EYE SKIN MUCOUS MEMBRANES FREON DI METHYL ETHER METHYLENE CHLORIDE VINYL CHLORIDE PROPANE ACUTE TOXICITY CHRONIC TOXICITY

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(13002); INTEGUMENT SYST-PATHIOLOGY(18506); SENSE ORGANS-PATHIOLOGY(20006); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: VERTEBRATA-UNSPECIFIED(85150); HOMINID-AE(86215); CAVIIDAE(86300)

66059639

ENVIRONMENTAL CARCINOGENS MECHANISMS OF ACTION AND OCCURRENCE SOME ASPECTS

PREUSSMANN R

DTSCH. KRESBSFORSCHUNGSZENT., INST. TOXIKOL. CHEMOTHER., IM NEUENHIEIMER FELD 280, D-6900 HEIDELBERG 1, W. GER.

ZENTRALBL BAKTERIOL PARASITENKD INFEKTIONSKR HYG ERSTE ABT ORIG REIHE B HYG BETRIEBSHYG PRAEV MED 166 (2-3). 1978 144-158. Coden: ZHPMA

Language: GERMAN

New aspects on the mechanism of action of known environmental carcinogens are described. These compounds are not active as such, but are bioactivated in mammalian metabolism via chemically reactive intermediates to electrophilic reactants, forming with information-bearing biopolymer covalent bonds. This change in the genetic code is in agreement with the mutation hypothesis of carcinogenesis. Aflatoxin B₁, N-nitroso compounds and benzo(a)pyrene are taken as examples. Threshold levels, e.g., no-effect levels derived from animals experiments with all their inherent limitations, are compared with data from human exposure to benzo(a)pyren, aflatoxin, N-nitroso compounds and vinyl chloride. The difficulties of such risk evaluations are discussed.

Descriptors: HUMAN ANIMAL MAMMALIAN METABOLISM AFLA TOXIN B-1 N NITROSO COMPOUNDS BENZO A PYRENE VINYL CHLORIDE MUTATION

Concept Codes: GENETICS/CYTOGENET-ANIMAL(+03506); GENETICS/CYTOGENET-HUMAN(+03508); SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(+10506); METABOLISM-GENL STUD,METAB PATHW(+13002); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); MED/CLIN MICROBIOL-VIROLOGY(+36006); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); PLANT PHYSIOL-CHEM CONSTITUENTS(51522)

Biosystematic Codes: DEUTEROMYCETES(15500); MAMMALIA-UNSPECIFIED AND EXTINCT(85700); HOMINIDAE(86215)

66055693

HEADSPACE SAMPLING AND GAS SOLID CHROMATOGRAPHIC DETERMINATION AND CONFIRMATION OF GREATER THAN 1 PART-PER-BILLION VINYL CHLORIDE RESIDUES IN POLY VINYL CHLORIDE FOOD PACKAGING

DENNISON J L; BREDER C V; MCNEAL T; SNYDER R C; ROACH J A; SPHON J A

DIV. CHEM. PHYS., FOOD DRUG ADM., WASHINGTON, D.C. 20204, USA.

J ASSOC OFF ANAL CHEM 61 (4). 1978 813-819. Coden: JANCA

Language: ENGLISH

The determination and confirmation of residual vinyl chloride (VC) in polyvinyl chloride (PVC) food packaging materials are described. PVC packaging materials are dissolved in dimethylacetamide (DMAC). VC is sparged from solution with He and collected in sealed vials of ethanol. VC is detected and quantitated by using a headspace sampling technique and standard gas-solid chromatography (GSC) with flame ionization detection. GSC peak heights of about 5% full scale deflection are obtained for samples of PVC containing 1 ppb VC. Polymer samples taken from tubing, blood bags, food packaging films, bottles and unprocessed resin were analyzed. Residual VC levels ranges from 0.3-913 ppb. VC was confirmed by GSC-mass spectrometry, using selected ion recording of m/z 62 and 64 in conjunction with full mass scans to identify components eluting near VC.

Descriptors: FLAME IONIZATION DETECTION MASS SPECTROMETRY

Concept Codes: BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(+10504); MOVEMENT(12100); FOOD TECH-GENL STUDS.METHS(+13502); FOOD TECH-PREP.PROCESSING.STORAGE(+13532); BLOOD/BODY FLDS-GENL STUDS.METHS(15001); TOXICOL-GENL/EXP STUDS.METHS(22501); TOXICOL-FOOD.RESIDS.ADDIT.PRESRV(+22502)

66055671

DETERMINATION OF THIO DI GLYCOLIC-ACID IN URINE SPECIMENS OF VINYL CHLORIDE EXPOSED WORKERS

MUELLER G; NORPOTH K; KUSTERS E; HERWEG K; VERSIN E
INST. STAUBLUNGENFORSCH. ARBEITSMED. WESTFAEL.
WILHELMS-UNIV., D-4400 MUENSTER, W. GER.

INT ARCH OCCUP ENVIRON HEALTH 41 (3). 1978 199-206.
Coden: IAOIH

Language: ENGLISH

A strong correlation was found between vinyl chloride [VC] concentrations at working places and the increased excretion of thiodiglycolic acid of 18 exposed workers. The mean air concentration of VC was calculated referring to personal exposure. The values obtained were in the range of 0.14-7.0 ppm. The excretion of thiodiglycolic acid, measured by GC-MS [gas chromatography-mass spectrometry] analysis, amounted to 0.3-4.0 mg/l. Significant increases in the metabolite excretion may occur even at VC-concentrations below 5 ppm.

Descriptors: HUMAN

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500);

10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); METABOLISM-GENL STUD.METAB PATHW(+13002); TOXICOL-ENVIRONMNTL-INDUSTRI(+22506); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

66053337

ANGIO SARCOMA OF THE LIVER IN VINYL CHLORIDE POLY VINYL CHLORIDE WORKERS 1977 UPDATE OF THE NATIONAL INSTITUTE OF OCCUPATIONAL HEALTH AND SAFETY REGISTER

SPIRTAS R; KAMINSKI R

ILLNESS EFFECTS SECT., SURVEILL. BRANCH/SSHEFS/NATL. INST. OCCUP. SAF. HEALTH, ROBERT A. TAFT LAB., 4676 COLUMBIA PKWY., CINCINNATI, OHIO 45226, USA.

J OCCUP MED 20 (6). 1978 427-429. Coden: JOCMA

Language: ENGLISH

In Dec., 1974 NIOSH [National Institute of Occupational Health and Safety] presented data on 26 cases of liver angiosarcoma among vinyl chloride workers, 21 of whom worked in the polymerization process. The present update provides details on 64 cases of angiosarcoma among vinyl chloride polymerization workers reported as of Oct., 1977. Continued surveillance of these workers is encouraged for the purpose of furthering knowledge of, this disease process in relation to vinyl chloride exposure.

Descriptors: HUMAN USA CARCINOGENS

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BONE,JNTS,FASC,CONN/ADIP-PATHOL(18006); TOXICOL-ENVIRONMNTL-INDUSTRI(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); PUB HEALTH-ADMINISTR.STATISTICS(37010); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215)

66053330

THE HEPATIC ROLE IN CARCINOGENESIS AND ITS EARLY DETECTION
THE VINYL CHLORIDE MODEL

TAMBURRO C H
DIG. DIS. NUTR. DIV., 511 S. FLOYD ST., PO BOX 35260,
LOUISVILLE, KY. 40232, USA.

YALE J BIOL MED 51 (1). 1978 67-80. Coden: YJBMA
Language: ENGLISH

The liver's role in vinyl chloride toxicity and carcinogenicity is providing a better understanding of the chemical carcinogenesis mechanism. A variety of malignant and benign hepatic tumors was demonstrated with prolonged exposure to vinyl chloride. The multisystem involvement of this carcinogen and toxin provided a model for the study of chemical carcinogenesis common to man and animal. Clinical studies showed the usefulness of biochemical, radioisotopic and radiological studies in the detection of toxic and carcinogenic lesions. Animal studies demonstrated the biochemical metabolism by the liver of vinyl chloride-produced intermediates which are mutagenic in bacterial systems and may be the ultimate carcinogens. Hepatic subcellular enzyme studies prove preliminary evidence of cellular adaptation and increased detoxification. Disruption of this oxidation and detoxification balance may be the key to malignant transformation of cells. A working hypothesis is presented which may explain the metabolism of vinyl chloride into mutagenic intermediates by liver cells and the development of malignant transformation by extrahepatic sinusoidal lining cells, lung cells and brain tissue.

Descriptors: ANIMAL HUMAN BACTERIAL MUTAGENESIS CARCINOGEN
LIVER LUNG BRAIN TUMORS METABOLIC CONVERSION SUB CELLULAR
ENZYME ACTIVITY ENVIRONMENTAL EXPOSURE

Concept Codes: PHOTOGRAPHY-METHS.MATLS.APPARAT(01012);
CYTOLOGY/CYTOCHEM-ANIMAL(02506);
GENETICS/CYTOGENET-HUMAN(03508); SOCIAL BIOL/HUMAN ECOLOGY(05-
500); RADIATION BIOL-RADTN.ISOTOP TECH(06504); BIOCHEM
STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO
ACD(10064); MINERALS(10069); ENZYMES-PHYSIOLOGICAL STUDIES(+1-
0808); ANATOMY/HISTOL-RADIOLOGIC(11106); PATHOLOGY-DIAGNOSTIC-
(12504); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE
SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PHYSIOL,BIOCHEM(-
14004); DIGESTIVE SYST-PATHOLOGY(+14006); RESPIRATORY
SYST-GENL STUD,METHS(16001); RESPIRATORY SYST-PATHOLOGY(+1600-
6); NERVOUS SYST-GENL STUDS,METHS(20501); NERVOUS
SYST-PATHOLOGY(+20506); TOXICOL-GENL/EXP STUDS,METHS(+22501);
TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNIS-DIA-
GNS METHS(24001); NEOPLSMS/NEOPL AGNIS-BIOCHEM(+24006);
NEOPLSMS/NEOPL AGNIS-CARCINOGENS(+24007); BACTERIAL AND VIRAL
GENETICS(+31500); MICROBIOLOG APPARAT,METHS.MEDIA(32000);
ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: BACTERIA-UNSPECIFIED(06000); MAMMALIA--
UNSPECIFIED AND EXTINCT(85700); HOMINIDAE(86215)

KLINE J; STEIN Z; STROBINO B; SUSSER M; WARBURTON D
COLUMBIA UNIV. SCH. PUBLIC HEALTH, 600 W. 168TH ST., NEW
YORK, N.Y. 10032, USA.

AM J EPIDEMIOL 106 (5). 1977 345-350. Coden: AJEPA
Language: ENGLISH

The advantages of using human spontaneous abortions to monitor teratogens in the environment were discussed. A specific case of parental vinyl chloride exposure provided a possible example.

Descriptors: HUMAN VINYL CHLORIDE

Concept Codes: BIOCHEM STUD-GENERAL(10060); PATHOLOGY-NECRO-
SIS(12510); REPRODUCT SYST-PATHOLOGY(+16506); TOXICOL-ENVIRON-
MNTL,INDUSTR(+22506); DEVELOPMNTL BIOL-PATHOLOGICAL(+25503);
DEVELOPMNTL BIOL-DESCRIP TERATOL(+25552); ENVIRON HEALTH-AIR,-
WATR,SL POLLN(37015); EPIDEMIOL-MISCELL STUDIES(37056)

Biosystematic Codes: HOMINIDAE(86215); BIOSIS INTERNAL
USE(97000)

66044697

SURVEILLANCE OF SPONTANEOUS ABORTIONS POWER IN ENVIRONMENTAL
MONITORING

66037496

A POLY VINYL CHLORIDE BASED ELECTRODE SENSITIVE TO DI BENZYL DIMETHYL AMMONIUM CATION AS A DEVICE FOR MONITORING THE MEMBRANE POTENTIAL IN BIOLOGICAL SYSTEMS

SHINBO T; KAMO N; KURIHARA K; KOBATAKE Y

NATL. CHEM. LAB. IND., HIRATSUKA, KANAGAWA, JPN.

ARCH BIOCHEM BIOPHYS 187 (2). 1978 414-422. Coden: ABBIA

Language: ENGLISH

A polyvinyl chloride (PVC)-based membrane electrode sensitive to dibenzyl dimethyl ammonium cation (DDA+) was constructed and operational parameters such as the selectivity coefficients, the detection limit and the response time were obtained. In comparison with the selectivity coefficients obtained with the previous liquid-membrane electrode, significant improvement was not obtained, but the response time became pronouncedly shorter. The electrode lifetime was remarkably prolonged. With the electrode developed, the change in the membrane potential of liposomes containing dibutyl ferrocene which separated oxidizing and reducing agent solutions was measured. The DDA+ uptake, U, and the membrane potential estimated from U changed in accordance with the redox potential in the medium when the concentration of internal ferricyanide was kept constant. The membrane potential collapsed when the uncoupler of oxidative phosphorylation was added. The ANS [8-anilino-1-naphthalene-sulfonate] fluorescence measurement indicated that negative charges appeared on energization with oxidizing-reducing agent. The change in membrane potential of mitochondria [rat liver] during energization was also measured. The liposome described above is a good model for the generation of membrane potentials in mitochondria.

Descriptors: RAT LIVER MITOCHONDRIA

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOPHYS-GENERAL BIOPHYS TECH(+10504); BIOPHYS-MEMBRANE PHENOMENA(+10508); BIOPHYS-BIOENERGETICS(+10510); BIOPHYS-BIOENGINEERING(+10511); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+14004)

Biosystematic Codes: MURIDAE(86375)

66032927

STUDY ON THE REPELLENT PROPERTIES OF POLYMERS TOWARDS RODENTS

KHRISTOV L; MATEVA M

INST. ZOOL., BULG. ACAD. SCI., SOFIA, BULG.

EKOLOGIYA (SOFIA) (2). 1976 (RECD 1978) 61-69. Coden: EKOLD

Language: BULGARIAN

In the period 1970-1974, repellent properties of 42 modifications of Bulgarian polymers were examined in relation to 9 spp. of rodents: *Dryomys nitedula* Pall., *Apodemus sylvaticus* L., *A. flavicollis* Melch., *A. agrarius* Pall., *Rattus rattus* L., *Microtus arvalis* Pall., *Clethrionomys glareolus* Schreb., *Mus musculus* and albino rats of the Wistar strain. Experiments with rodents were carried out in laboratory conditions in which polymers were put as a barrier to the food of the animals or the latter had free access to them. In

terrain conditions, polymer samples were put near rodent holes. In laboratory conditions, polyethylene samples were most severely gnawed irrespective of the included repellent additives (thiourea, altax, diphenylmethylcarbinol, nicotinic acid, diphenylguanidine, dioctylphthalate, calcium stearate and phosphorus containing compounds), and least gnawed were the polyvinylchloride compositions incorporating such additives as plumbic acetate, BTS-7, BTS-8, lubricant, dibutylphthalate, plasticizers, asphalt tar and quartz powder. Partial repellent qualities against 3 spp. of rodents (black rat, ordinary wood mouse and house mouse) showed compositions of polyvinylchloride and of polyamide with addition of finely ground quartz glass. In terrain experiments, polymer were not attacked by rodents and were only slightly scratched.

Descriptors: DRYOMYS-NITEDULA APODEMUS-SYLVATICUS APODEMUS--FLAVICOLLIS APODEMUS-AGRARIUS RATTUS-RATTUS MUS-MUSCULUS MICROTUS-ARVALIS CLETHRIONOMYS-GLAREOLUS POLY ETHYLENE POLY VINYL CHLORIDE DERIVATIVES POLY AMIDE POLYMERS ADDITIVES FOOD BARRIER

Concept Codes: BEHAVIOR BIOL-ANIMAL BEHAVIOR(07003); ECOLOGY-ANIMAL(+07508); ECOLOGY-TERRESTRIAL WILDLIFE MGMT(+07518); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); NUTRITION-GENL,NUTR STATUS.METHS(13202); PEST CONTRL GENL/PESTICS/HERBICS(+54600)

Biosystematic Codes: CRICETIDAE(86310); GLIRIDAE(86355); MURIDAE(86375)

66032476

CONGENITAL CENTRAL NERVOUS SYSTEM MALFORMATIONS AND VINYL CHLORIDE MONOMER EXPOSURE A COMMUNITY STUDY

EDMONDS L D; ANDERSON C E; FLYNT J W JR; JAMES L M
BIRTH DEF. BRANCH, CHRONIC DIS. DIV., BUR. EPIDEMIOL., CENT.
DIS. CONTROL, ATLANTA, GA. 30333, USA.

TERATOLOGY 17 (2). 1978 137-142. Coden: TJADA

Language: ENGLISH

Incidence rates for CNS malformations in infants born to residents of Kanawha County, West Virginia [USA], 1970-1974, were significantly higher than comparable USA rates during those years. Since Kanawha County contains a polyvinyl chloride (PVC) polymerization plant a case-control study was conducted on the possible relationship between the occurrence of CNS defects and parental occupational or residential exposure to vinyl chloride monomer emissions from the plant. No relationship with parental occupation was found. While a tendency was noted for residences of case families to be located in an area northeast of the plant, this observation did not entirely correlate with existing data on local patterns of wind direction and air pollution.

Descriptors: KANAWHA COUNTY WEST-VIRGINIA USA HUMAN

Concept Codes: ECOLOGY-BIOCLIMATOL, BIOMETEOROL(+07504);
BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10060); EXTERN
EFF-GENL STUD(10602); NERVOUS SYST-PATHOLOGY(+20506);
TOXICOL-ENVIRONMNTL, INDUSTR(+22506); DEVELOPMNTL BIOL-DESCRIP
TERATOL(+25552); ENVIRON HEALTH-OCCUPATNL HEALTH(37013);
ENVIRON HEALTH-AIR, WATR, SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215); BIOSIS INTERNAL
USE(97000)

66030667

VINYL CHLORIDE MONOMER RESIDUES IN FOODS AND THEIR PACKAGING

ROESLI M; MAREK B
EIDG. GESUNDEITSAMT LEBENSMITTELKONTROLLE SEKT.
PESTIZIDRUECKSTAENDE, KONTAMINATIONEN HASLERSTR. 16, CH-3008
BERN, SWITZ.

MITT GEB LEBENSMITTELUNTERS HYG 68 (4). 1977 (RECD 1978)
550-553. Coden: MGLHA

Language: GERMAN

Vinyl chloride monomer (VCM) was determined in market samples of edible oils, salad dressings, vinegars, mineral waters, margarines, and cheeses and in the corresponding PVC-containers. Of 38 analysed food samples, 3 contained more than 0.010 ppm VCM. The monomer residues in the other samples were below 0.005 ppm. VCM was not detected (< 0.1 ppm) in 66% of the PVC-containers.

Descriptors: EDIBLE OILS SALAD DRESSINGS VINEGARS MINERAL
WATERS MARGARINES CHEESES

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010);
BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(+10060);
BIOCHEM STUD-LIPIDS(10066); FOOD TECH-GENL STUDS, METHS(+13502);
FOOD TECH-MALTS, BREWS, FERMENTATN(+13512); FOOD TECH-FATS, OILS(+13514);
FOOD TECH-DAIRY PRODUCTS(+13518); FOOD TECH-EVALNS
PHYS, CHEM PROPS(+13530); FOOD TECH-PREP, PROCESSNG, STORAGE(+13-
532); TOXICOL-FOOD, RESIDS, ADDIT, PRESRV(+22502)

66030666

THE CONTROL OF MONOMER MIGRATION INTO FOODS PACKAGED IN PLASTIC RECEPTACLES POLY VINYL CHLORIDE POLY STYRENE

MERAT E; VOGEL J
LAB. CANTONAL CHIM., INST. HYG., 22 QUAI ERNEST-ANSERMET,
CH-1211 GENEVE 4, SWITZ.

MITT GEB LEBENSMITTELUNTERS HYG 68 (4). 1977 (RECD 1978)
513-522. Coden: MGLHA

Language: FRENCH

The vinyl chloride and styrene contents of some foodstuffs were measured. The relation between the composition of the foodstuff and the migration of monomers into it was studied. The influence of the contact time on that migration was controlled. The determination methods are described.

Descriptors: FOOD COMPOSITION INFLUENCE CONTACT TIME
DETERMINATION METHODS

Concept Codes: BIOCHEM METH-GENERAL(10050); BIOCHEM
STUD-GENERAL(+10060); MOVEMENT(12100); FOOD TECH-GENL
STUDS, METHS(+13502); FOOD TECH-EVALNS PHYS, CHEM PROPS(+13530);
FOOD TECH-PREP, PROCESSNG, STORAGE(+13532); TOXICOL-FOOD, RESIDS-
ADDIT, PRESRV(+22502)

66025639

METHOD FOR STENOSING VESSELS WITH SUBSEQUENT REMOVAL OF THE STENOSIS

LEITES A L; MADAMINOV S M

DIV. NORM. ANAT., KIRG. STATE MED. INST., FRUNZE, USSR.

ARKH ANAT GISTOL EMBRIOL 73 (12). 1977 (RECD 1978) 83-85.

Coden: AAGEA

Language: RUSSIAN

A method for stenosing major blood vessels in modeling of various pathological states with subsequent easy removal of the stenosis was demonstrated on the rabbit pulmonary trunk. The rubber bulb from a pipette is wrapped around the artery and filled with fluid or emptied by means of a vinyl chloride tube inserted in the open end of the bulb, allowing varying amounts of pressure to be applied to the vessel. For use in dogs with greater vessel elasticity, the bulb is attached to a collar made from adhesive plaster.

Descriptors: RABBIT DOG

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL
STUDIES(10502); PATHOLOGY-COMPARATIVE(12503); CARDIOVASC
SYST-GENL STUDS, METHS(+14501); CARDIOVASC SYST-ANATOMY(14502);
CARDIOVASC SYST-BLD VESS PATHOL(+14508)

Biosystematic Codes: CANIDAE(85765); LEPORIDAE(86040)

66024967

EFFECTS OF POLY VINYL CHLORIDE PIPE UNDER DRAINAGE ON THE GROWTH OF RICE PLANTS

LIM U K; IM H B
 DEP. AGROBIOL., COLL. AGRIC., SEOUL NATL. UNIV., SUWON, S. KOREA.
 KOREAN J BOT 20 (2). 1977 (RECD 1978) 103-108. Coden: KJBOA

Language: KOREAN

Two sample varieties of 'Yushin' and 'Jinheung' were used for the experiment in low-level wetty paddy field which was arranged with PVC pipe underdrainage of 6 m in distance and 60 cm, 90 cm and 120 cm in depth and control, using split plot design with 3 replications. The brown rice yield of 'Yushin' was increased by 24.8% in the 90 cm plot and 'Jinheung' by 16.7% in the 120 cm plot, respectively, over the control. The ratio of matured grains of these 2 varieties was increased significantly by the underdrainage and the number of grains per head of 'Yushin' was also increased in drained plots. Otherwise, the underdrainage enhanced plant height in the early growth of rice plant and further increased the culm height and panicle length. The light-receiving efficiency in the later growth of the rice plant might be enhanced, bringing about increased yields.

Descriptors: YIELD HEIGHT PANICLE LENGTH

Concept Codes: EXTERN EFF-LIGHT,DARKNESS(10604); PLANT MORPHOL,EMBRYOL,ANATOMY(51000); PLANT PHYSIOL-GROWTH,DIFFRENT-IAT(+51510); PLANT PHYSIOL-LIGHT,RADIATN EFFS(51516); AGRONOMY-GRAIN CROPS(+52504); SOIL SCI-FERTILITY,APPLIED STUDES(+52807)

Biosystematic Codes: GRAMINEAE(25305)

Exposure of mice to 50, 250 or 1000 ppm of vinyl chloride (VC) in the air for 6 h/day, 5 days/wk, caused a high incidence of bronchioloalveolar adenoma, mammary gland tumors and hemangiosarcoma. Mammary gland tumors occurred in females and included ductular adenocarcinoma and squamous and anaplastic cell carcinomas with metastases to the lungs. Hemangiosarcoma occurred in the liver and, to a lesser extent, in various other organs. The incidence and severity of these tumors increased with the concentration of VC and length of exposure. Malignant lymphoma involving various organs was observed in several mice. Rats were more resistant to the carcinogenic effects of VC. Exposure of rats to 250 or 1000 ppm of VC caused hemangiosarcoma in the liver. Many rats with hepatic hemangiosarcoma also developed hemangiosarcoma in the lung. Extrahepatic hemangiosarcoma also occasionally occurred in other organs. Exposure to 55 ppm of vinylidene chloride (VDC) caused hepatic hemangiosarcoma and probably bronchioloalveolar adenoma in mice. Hemangiosarcoma also occurred in the mesenteric lymph node or subcutaneous tissue in 2 rats exposed to 55 ppm of VDC.

THE METABOLISM BY RAINBOW JET SALMO-GAIRDNERI OF CARBON-14 P P DDT AND SOME OF ITS POSSIBLE DEGRADATION PRODUCTS LABELED WITH CARBON-14

ADDISON R F; WILLIS D E
 MAR. ECOL. LAB., BEDFORD INST. OCEANOGR., DEP. FISH. ENVIRON., DARTMOUTH, N.S. B2Y 4A2, CAN.
 TOXICOL APPL PHARMACOL 43 (2). 1978 303-316. Coden: TXAPA

Language: ENGLISH

Groups of 5 or 10 rainbow trout fry (*S. gairdnerii*) weighing around 1 g were injected i.m. with ¹⁴C-labeled p,p'-DDT; p,p'-DDE, p,p'-DDD; 2,2-bis(p-chlorophenyl)-1-chloroethane (p,p'-DDMS); 1,1-bis(p-chlorophenyl)ethylene (p,p'-DDNU); 2,2-bis(p-chlorophenyl)-1-chloroethylene (p,p'-DDMU); 2,2-bis(p-chlorophenyl)ethanol (p,p'-DDOH); p-dichlorobenzophenone (p,p'-DBP); p-dichlorobenzhydrol (p,p'-DBH); or bis(p-chlorophenyl) acetic acid (p,p'-DDA). At intervals of 24 h and 3 wk after injection (except in the case of the p,p'-[¹⁴C]DDOH- and p,p'-[¹⁴C]DDA-injected groups, where only 24 h samples were taken), the fish were killed, extracted individually and analyzed for p,p'-DDT metabolites. Their water was also analyzed 24 h after injection. p,p'-[¹⁴C]DDT was converted to p,p'-DDE and, to a lesser extent, p,p'-DDD. p,p'-[¹⁴C]DDD was converted to a limited extent to p,p'-DDMU, and p,p'-[¹⁴C]DDMS was similarly dehydrochlorinated to p,p'-DDNU. p,p'-[¹⁴C]DBH and p,p'-[¹⁴C]DBP were interconverted to some extent, and p,p'-[¹⁴C]DDA was converted to p,p'-DBP. p,p'-[¹⁴C]DDOH was apparently converted to p,p'-DBP in 1 experiment, but a 2nd exposure did not confirm this. None of the dehydrochlorination products (p,p'-[¹⁴C]DDE, p,p'-[¹⁴C]DDMU and p,p'-[¹⁴C]DDNU) was degraded, and p,p'-DDMU therefore appears to be one of the end products of DDT metabolism by trout.

Descriptors: INSECTICIDE

Concept Codes: RADIATION BIOL-RADTN,ISOTOP TECH(06504); ECOLOGY-AQUATIC WILDLIFE MGMT(+07516); ECOLOGY-WATR RESRCH,FISHERY BIOL(07517); BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(+13002); MUSCLE SYST-GENL STUDES,METHS(17501); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDES,METHS(+22501); PEST CONTRL GENL/PESTIC-S/HERBICS(+54600); ECONOM ENTOMOL-CHEM PHYS CONTRL(60016)

Biosystematic Codes: OSTEICHTHYES(85206); ABSTRACTS OF ENTOMOLOGY(96000)

R&S 138536

66014480

THE MUTAGENIC EFFECT OF 1,2-DICHLOROETHANE ON SALMONELLA-TYPHIMURIUM PART 1 ACTIVATION THROUGH CONJUGATION WITH GLUTATHIONE IN-VITRO

RANNUG U; SUNDVALL A; RAMEL C

ENVIRON. TOXICOL. UNIT, WALLENBERG LAB., UNIV. STOCKH., S-106 91 STOCKHOLM, SWED.

CHEM-BIOL INTERACT 20 (1). 1978 1-16. Coden: CBINA

Language: ENGLISH

One of the main components in the waste products from vinyl chloride industries (EDC-tar), is ethylene dichloride (1,2-dichloroethane). This compound was tested for mutagenicity on *S. typhimurium* TA 1535. Apparently, 1,2-dichloroethane gives a weak direct mutagenic effect, which is enhanced by addition of [rat] postmitochondrial liver fraction (S-9). This activation is NADPH-independent and non-microsomal. It is caused by a factor in the soluble fraction (115,000 g supernatant). This activation was further enhanced by the addition of glutathione but not by the addition of L-cysteine, N-acetyl-L-cysteine or 2-mercaptoethanol. No activation was observed when glutathione was added in the presence of a totally denatured S-9 fraction or in the absence of this fraction. Activation of 1,2-dichloroethane was also found in the presence of glutathione and glutathione S-transferase A and C but not with glutathione S-transferase B. A synthetic conjugate S-(2-chloroethyl)-L-cysteine gave a strong direct mutagenic effect at concentrations where no effects were seen with 1,2-dichloroethane. Apparently, 1,2-dichloroethane is activated by conjugation to glutathione. Another main component in EDC-tar, 1,1,2-trichloroethane, was not mutagenic under any experimental conditions. For comparison 1,2-dibromoethane was also tested and gave a stronger direct mutagenic effect than 1,2-dichloroethane. Like the latter 1,2-dibromoethane was also activated by a NADPH-independent process.

Descriptors: RAT LIVER FRACTION 1,2-DIBROMOETHANE 1,1,2-TRICHLOROETHANE MUTAGENS NADPH GLUTATHIONE S TRANSFERASE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); GENETICS/CYT-TOGENET-ANIMAL(+03506); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID,PURINS,PYRIM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); BIOPHYS-GENERAL BIOPHYS TECH(10504); ENZYMES-GEN,COMPAR STUD,COENZYMES(10802); ENZYMES-METHODS(10804); MOVEMENT(12100); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-GENL STUDS,METHS(14001); TOXICOL-GENL/EXP STUDS,METHS(+22501); BACTERIA-PHYSIOLOGY,BIOCHEMISTRY(+31000); BACTERIAL AND VIRAL GENETICS(+31500); MICROBIOLOG APPARAT,METHS,MEDIA(32000)

Biosystematic Codes: EUBACTERIALES(07200); MURIDAE(86375)

GG012073

AN ACCEPTABLE LEVEL OF EXPOSURE

ZAPP J A JR

318 MARSHALL ST., KENNET SQUARE, PA. 19348, USA.

AM IND HYG ASSOC J 38 (9). 1977 425-431. Coden: A111AA

Language: ENGLISH

Some aspects of the problem of an acceptable level of exposure are discussed, for if there is such a thing, threshold limit values [TLV] have scientific meaning. If, on the other hand, there is no such thing as a no-effect but finite level of exposure, then the TLV must be considered in terms of that which is socially and politically acceptable, rather than in terms of what is scientifically correct. Some of the history of the development of [human] industrial toxicology and industrial hygiene is given. The American Conference of Governmental Industrial Hygienists took the lead in publishing and up-dating annually a list of atmospheric exposure levels deemed to be acceptable the TLV list. Today the big topic of discussion about acceptable limits of exposure concerns those chemical substances which might possibly induce cancer. Where there has been a sufficiently long period of human exposure to a substance, it may well be worthwhile to do retrospective epidemiologic studies to see whether any peaks of disease have emerged above the noise level. If such peaks have emerged, as they did with asbestos, vinyl chloride, bis-chloromethyl ether and a few others, exposure levels were too high. If it is possible to estimate exposure levels which would keep toxic effects below that point where they emerge from the background and become identifiable, those levels would represent acceptable levels of exposure for now.

Descriptors: HUMAN INDUSTRIAL TOXICOLOGY INDUSTRIAL HYGIENE ATMOSPHERIC EXPOSURE LEVELS THRESHOLD LIMIT VALUE CARCINOGENS ASBESTOS VINYL CHLORIDE BIS CHLOROMETHYL ETHER

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); MINERALS(10069); TOXICOL-ENVIRONMNTL,IND- USTR(+22506); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007); PUB HEALTH-ADMINISTR,STATISTICS(+37010); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015); EPIDEMIOLOG-ORGANIC DIS,NEOPLASMS(37054)

Biosystematic Codes: HOMINIDAE(86215)

66012064

TESTING OF INDUSTRIAL CHEMICALS

MCLEAN A E M

LAB. TOXICOL., DEP. CLIN. PHARMACOL., UNIV. COLL. HOSP. MED. SCH., LONDON WC1E 6JJ, ENGL., UK.

LANCET 2 (8047), 1977 1070-1071. Coden: LANCA

Language: ENGLISH

Some 500 new chemicals are introduced into [United Kingdom] commerce each year. Until now it has been quite usual for the toxicity of a new chemical to remain undiscovered until the workers fell ill or died, as happened with beryllium, vinyl chloride, asbestos, nitrosamines and .beta.-naphthylamine. This is clearly intolerable. The Health and Safety Commission and its Executive (H.S.E.) have the duty of working towards health and safety at work and have put forward a scheme in which all new chemicals should be tested before use. The scheme is, so far, limited to new chemicals made or imported in amounts of 1 ton a year or more. The suggested procedures comprise the following: observation of the effects on rats of a single dose in the lethal range (acute toxicity test and LD50); irritancy to the skin and eye, and sensitization test; effects of 30 days of exposure; mutagenic potential to bacteria and tissue culture cells (as tests of carcinogenicity); effects on the fetus in pregnant rats, effects on 1 fish species and stability in soil or sewage. The scheme seems sensible but there are underlying drawbacks. First, the scheme takes no account of the consumer or environment. How can it be decided that a new chemical is fit for use in industry, or as a drug, food additive, or pesticide? There are 4 essential steps in the process of decision: toxicity is measured; hazard is assessed; risk is evaluated; and epidemiological follow-up is done.

Descriptors: HUMAN UNITED-KINGDOM WORKER RAT FISH BACTERIA FETUS TERATOGEN CARCINOGEN IRRITANT SENSITIZER MUTAGEN TERATOGEN ENVIRONMENTAL EFFECTS SOIL POLLUTION SEWAGE

Concept Codes: GENETICS/CYTOGENET-GENL STUDIES(03502); ECOLOGY-GENL STUDIES, METHODS(07502); ECOLOGY-WATR RESRCH, FISHERY BIOL(07517); BIOCHEM STUD-GENERAL(10060); PATHOLOGY-NECROSIS(12510); REPRODUCT SYST-PHYSIOL, BIOCHEM(16504); INTEGUMENT SYST-PATHOLOGY(18506); SENSE ORGANS-PATHOLOGY(20006); TOXICOL-GENL/EXP STUDS, METHS(22501); TOXICOL-ENVIRONMNTL, INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); DEVELOPMNTL BIOL-EXPERIMENTAL(25504); DEVELOPMNTL BIOL-DESCRIP TERATOL(25552); DEVELOPMNTL BIOL-EXPER TERATOL(25554); BACTERIAL AND VIRAL GENETICS(31500); TISS CULTURE-APPARAT, METHS, MEDIA(32500); IMMUNOL/IMMUNOCHEM-IMMUNOPATHOL(34508); ALLERGY(35500); PUB HEALTH-ADMINISTR, STATISTICS(37010); ENVIRON HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-SEWG DISP, SANITAR(37014); ENVIRON HEALTH-AIR, WATR, SL POLLN(37015); EPIDEMIOL-MISCELL STUDIES(37056); SOIL SCI-FERTILITY, APPLIED STUDS(52807)

Biosystematic Codes: BACTERIA-UNSPECIFIED(06000); PISCES-UNSPECIFIED(85200); HOMINIDAE(86215); MURIDAE(86375)

LIBESKIND M; LUGAGNE F; MALBRAN J; VILLEMANT J-F; GUYET-ROUSSET P
SERV. GASTROENTEROL., LAB. ANAT.-PATHOL., F 95500 GONESSE, FR.

GASTROENTEROL CLIN BIOL 1 (12), 1977 (RECD 1978) 1027-1034. Coden: GCBID

Language: FRENCH

The case of an adult patient with angiosarcoma of the liver and spleen was reported. From this observation and other reported cases (about 150) in the literature, the clinical features and course of this malignant tumor were delineated. In most cases observed, vinyl chloride intoxication was responsible for the development of this tumor. In the reported case, this cause was absent.

Descriptors: HUMAN

Concept Codes: BIOCHEM STUD-GENERAL(10060); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLOS-BLD,LYM,RES PATH(+15006); BLOOD/BODY FLOS-LYMPHAT TISS,RES(+15008); BONE,JNTS,FASC.CONN/ADIP-PATHOL(18006); TOXICOL-ENVIRONMNTL,INDUSTR(22506); NEOPLSMS/NEOPL AGNTS-PATH,CLINIC(+24004); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); NEOPLSMS/NEOPL AGNTS-BLOOD,RES(24010); ENVIRON HEALTH-OCCUPATNL HEALTH(37013)

Biosystematic Codes: HOMINIDAE(86215)

66008304

A DOMINANT LETHAL STUDY IN MALE RATS AFTER REPEATED EXPOSURES TO VINYL CHLORIDE OR VINYLIDENE CHLORIDE

SHORT R D; MINOR J L; WINSTON J M; LEE C-C

PHARMACOL. TOXICOL., MIDWEST RES. INST., 425 VOLKER BLVD., KANSAS CITY, MO. 64110, USA.

J TOXICOL ENVIRON HEALTH 3 (5-6), 1977 (RECD 1978) 965-968. Coden: JTEHD

Language: ENGLISH

Male CD rats were exposed 6 h/day for 5 days/wk to 0, 50, 250 or 1000 ppm of vinyl chloride or 55 ppm of vinylidene chloride. Starting on wk 11 of exposure, these males were mated with untreated females. There was no evidence of either preimplantation loss or postimplantation loss in pregnant females that resulted from these matings. These exposures did not produce germinal mutation, as manifested by a dominant lethal effect, in male rats.

Descriptors: PRE IMPLANTATION LOSS POST IMPLANTATION LOSS

Concept Codes: GENETICS/CYTOGENET-ANIMAL(+03506); BIOCHEM STUD-GENERAL(10060); REPRODUCT SYST-PHYSIOL, BIOCHEM(+16504); TOXICOL-GENL/EXP STUDS, METHS(+22501); DEVELOPMNTL BIOL-PATHOLOGICAL(+25503)

Biosystematic Codes: MURIDAE(86375)

66010059

HEPATO SPLENIC ANGIO SARCOMA REPORT OF A CASE AND REVIEW OF THE LITERATURE

66006096

ACUTE HEPATO TOXICITY OF ETHYLENE VINYL FLUORIDE VINYL CHLORIDE AND VINYL BROMIDE AFTER AROCLOR 1254 PRE TREATMENT

CONOLLY R B; JAEGER R J; SZABO S
DEP. PHYSIOL., HARV. SCH. PUBLIC HEALTH, BOSTON, MASS.
02115, USA.

EXP MOL PATHOL 28 (1). 1978 25-33. Coden: EXMPA

Language: ENGLISH

Male rats were pretreated by gavage with the polychlorinated biphenyl mixture (PCB) Aroclor 1254 (300 .mu.mol of PCB/kg) for 3 consecutive days. On the 4th day these rats were exposed by inhalation (4 h) to various concentrations of ethane, ethylene, fluoride monomer (VFM), vinyl chloride monomer (VCM) or vinyl bromide monomer (VBM). Animals were sacrificed 24 h after exposure and acute hepatic responses were estimated by measurement of serum alanine-.alpha.-ketoglutarate transaminase (SAKT) and light microscopy. All compounds tested, except ethane, caused significant elevations of SAKT and produced severe degeneration and necrosis of the liver. Typical SAKT values (milligrams of pyruvate per milliliter of serum per hour) were: absolute controls, 0.17 +/- 0.01; PCB pretreated, not exposed, 0.19 +/- 0.02; PCB and 50,000 ppm of ethane, 0.11 +/- 0.02; PCB and 25,000 ppm of ethylene, 1.98 +/- 0.61; PCB and 10,000 ppm of VFM 6.29 +/- 0.99; PCB and 10,000 ppm of VCM 1.11 +/- 0.32; and PCB and 33,000 ppm of VBM, 3.78 +/- 2.28. The relative potencies of these compounds in elevating SAKT were similar, and the spectrum of morphologic changes (e.g., midzonal ballooning of hepatocytes and centrolobular hemorrhagic necrosis) was the same. The acute hepatotoxicity of ethylene plus PCB and lack of effect from ethane plus PCB indicate a role for the double bond in these toxic interactions. With the exception of ethane the compounds tested are similar in acute toxicity after PCB pretreatment. This similarity of acute action, in light of the carcinogenicity of VCM, suggests that ethylene, VFM and VBM should be evaluated for chronic effects.

Descriptors: RAT CARCINOGENICITY LIGHT MICROSCOPY SERUM ALANINE ALPHA KETO GLUTARATE TRANS AMINASE

Concept Codes: MICROSCOPY-GENL,SPECL TECHNIQUES(01052); CYTOLOGY/CYTOCHEM-ANIMAL(+02506); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(1006-4); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); PATHOLOGY-NECROSIS-(12510); DIGESTIVE SYST-GENL STUDS,METHS(14001); DIGESTIVE SYST-PATHOLOGY(+14006); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007)

Biosystematic Codes: MURIDAE(86375)

66003884

CARCINOGENS IN DRINKING WATER

AM ACAD PEDIATR COMM ENVIRON HAZARDS

AM. ACAD. PEDIATR., EVANSTON, ILL. 60204, USA.

PEDIATRICS 57 (4). 1976 462-464. Coden: PEDIA

Language: ENGLISH

Human exposure to asbestos in the water supply and in occupational or environmental exposures, chemical carcinogens

in water and their pediatric implications were discussed. The EPA [Environmental Protection Agency] prepared a list of 221 organic compounds identified in drinking water in the USA as of June 1, 1975. Among them are vinyl chloride, pesticides and polycyclic hydrocarbons, compounds which in occupational exposures have been harmful to man. In addition the EPA has reported on excessive Pb in tap-water. In a study by the EPA of 6 organic chemicals of particular concern, it was found that chlorination contributed to the formation of 4: chloroform, bromoform, bromodichloromethane and dichloromethane. In addition to the effects of individual compounds, there is the possibility of interactions. With regard to the health risk from organics in drinking water, study group of the EPA deemed chloroform to be most suspect as a potential human carcinogen because it induces liver tumors in mice. There is no epidemiologic evidence of its carcinogenicity in man, it was noted. Although certain other contaminants evaluated by the study group were thought to have carcinogenic potential the risk in man, if any, was thought to be minor because of the low concentrations and infrequent occurrence of these chemicals in drinking water. The fetus and child may be more susceptible than the adult to the effects of chemical pollutants, and long life-expectancy may allow accumulation of sufficient doses and survival through extended latent periods. There is at present, however, no basis for recommending a change in water supply because of potential carcinogens.

Descriptors: HUMAN FETUS CHILD MOUSE USA OCCUPATIONAL EXPOSURE ENVIRONMENTAL EXPOSURE VINYL CHLORIDE PESTICIDES POLY CYCLIC HYDRO CARBONS LEAD CHLOROFORM

Concept Codes: ECOLOGY-LIMNOLOGY(+07514); ECOLOGY-WATR RESRCH,FISHERY BIOL(07517); BIOCHEM STUD-GENERAL(+10060); MINERALS(10069); PATHOLOGY-COMPARATIVE(12503); DIGESTIVE SYST-PATHOLOGY(14006); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); PEDIATRICS(25000); DEVELOPMNTL BIOL-PATHOLOGICAL(25503); PUB HEALTH-ADMINISTR,STATISTICS(37010); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015); EPIDEMIOL-ORGANIC DIS,NEOPLASMS(37054); PEST CONTRL GENL/PESTICS/HERBICS(54600)

Biosystematic Codes: HOMINIDAE(86215); MURIDAE(86375)

66003850

FORMATION OF 3 N-4 ETHENO CYTIDINE MOIETIES IN RNA BY VINYL CHLORIDE METABOLITES IN-VITRO AND IN-VIVO

LAIB R J; BOLT H M

INST. TOXIKOL., UNIV. TUEB., WILHELMSTR. 56, D-7400 TUEBINGEN, W. GER.

ARCH TOXICOL 39 (3). 1978 235-240. Coden: ATXKA

Language: ENGLISH

Rats were exposed to [1,2-14C] vinyl chloride. Liver RNA was isolated, hydrolyzed and the nucleosides were separated on Aminex-A-6. Besides the physiological bases and 1,N6-ethenoadenosine, radioactivity was also incorporated into 3,N4-ethenocytidine. Radioactive 3,N4-ethenocytidine moieties were also formed on incubation of polycytidylic acid with rat liver microsomes, NADPH and [14C] vinyl chloride. These alkylation mechanisms are consistent with the mutagenic and cancerogenic properties of vinyl chloride.

Descriptors: RAT LIVER CARCINOGEN MUTAGENICITY AMINEX A-6 SEPARATION

Concept Codes: GENETICS/CYTOGENET-ANIMAL(+03506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM METH-NUCL ACD,PURNS,PY-RM(10052); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(+10062); REPLICATN,TRANSCRIPTN,TRANSLATN(10300); BIOPHYS-MOLECUL PROP,MACROMOLEC(+10506); METABOLISM-NUCL ACD,PURINS,PYRIM(+13014); DIGESTIVE SYST-PHYSIOL,BIOCHEM(+140-04); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+2400-7); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

65074128

SOME OBSERVATIONS ON THE DETERMINATION OF MONOMER RESIDUES IN FOODS

CHUDY J C; CROSBY N T

LAB. GOV. CHEM., DEP. IND., CORNWALL HOUSE, STAMFORD ST., LONDON SE1 9NQ, ENGL., UK.

FOOD COSMET TOXICOL 15 (6). 1977 (RECD 1978) 547-552. Coden: FCTXA

Language: ENGLISH

The effects of various experimental parameters on the determination by headspace gas chromatography of residues of vinyl chloride and of acrylonitrile in foods were examined. Preliminary investigations on the choice of solvent, the effects of varying duration and temperature of storage and the ratio of headspace to solvent volume are reported. Headspace gas chromatography was used to follow the migration of vinyl chloride from PVC [polyvinylchloride] into orange drink, wine, olive oil and water.

Descriptors: ORANGE DRINK WINE OLIVE OIL WATER POLY VINYL CHLORIDE ACRYLONITRILE CHROMATOGRAPHY

Concept Codes: BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); EXTERN EFF-TEMPERATURE(10614); MOVEMENT(12100); FOOD TECH-GENL STUDS,METHS(+13502); FOOD TECH-FRUIT,NUTS,VEGETABLES(+13504); FOOD TECH-MALTS,BREWS,FERMENTATN(+13512); FOOD TECH-FATS,OILS(+13514); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); FOOD

TECH-PREP,PROCESSNG,STORAGE(+13532);

TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502);

TEMPERATURE-GENL,METHS(23001); HORTICULT-TROP FRUIT,NUT,PLANT-AT(53004)

Biosystematic Codes: OLEACEAE(26475); RUTACEAE(26685)

65074110

ETIOLOGY OF THE THROMBOCYTOPENIA IN VINYL CHLORIDE DISEASE

HEUSERMANN U; STUTTE H-J

ABT. ALLG. PATHOL. PATHOL. ANAT., INST. PATHOL., UNIV. KIEL. POSTFACH 4324, D-2300 KIEL 1, W. GER.

BLUT 35 (4). 1977 (RECD 1978) 317-322. Coden: BLUTA

Language: GERMAN

Thrombocytopenia is often 1 of the 1st signs of vinylchloride disease. Morphological investigations showed that it is caused by splenic [human] alterations. Besides splenomegaly, there are significant structural changes in the red pulp cords affecting the microcirculation. These quantitative and qualitative alterations cause increased platelet pooling and increased destruction of platelets, which result in a decrease in thrombocytes in the peripheral blood.

Descriptors: HUMAN SPLENIC ALTERATIONS

Concept Codes: MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); BIOCHEM STUD-GENERAL(10060); ANATOMY/HISTOL-MICRO,ULTRAMICRSC-(11108); BLOOD/BODY FLDS-BLOOD,LYMPH STUD(+15002); BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006); BLOOD/BODY FLDS-LYMPHAT TISS,RES(+15008); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-AIR,WATR,SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

65070228

EVALUATION OF A CALCIUM ALGINATE FILM FOR USE ON BEEF CUTS
 WILLIAMS S K; OBLINGER J L; WEST R L
 FOOD SCI. HUM. NUTR. DEP., INST. FOOD AGRIC. SCI., UNIV.
 FLA., GAINESVILLE, FLA. 32611, USA.
 J FOOD SCI 43 (2). 1978 292-296. Coden: JFDSA
 Language: ENGLISH

Effects of a calcium alginate coating on retail beef pieces and steaks were studied. Microbiological analyses were performed on beef pieces following treatments with a calcium alginate coating; a 200 ppm HOCl solution; a combination of the two; a coliform inoculation and/or no treatment (control). Each sample was wrapped in a polyvinyl chloride (PVC) film and stored at 5 degree C for up to 7 days. Rate of microbial growth for total and coliform counts on the meat was not significantly different with coated and uncoated meat samples. The HOCl treated meat had significantly lower total microbial counts and coliform populations when compared to the calcium alginate or the HOCl-calcium alginate treated meat. Acceptance of the calcium alginate film involved retail display and organoleptic evaluations of 40 2.54-cm thick beef steaks. Steaks that received the calcium alginate coating were significantly lower in shrinkage loss, drip and degree of off-odor detected through 96 h storage when compared to uncoated steaks. Coating significantly prolonged muscle color through 96 h storage. No significant differences were observed between treatments for appearance, surface discoloration, flavor, juiciness, tenderness, overall acceptability or cooking loss.

Descriptors: COLIFORM HYPO CHLOROUS-ACID POLY VINYL CHLORIDE WRAP MICROBIAL GROWTH ORGANOLEPTIC EVALUATION

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-CARBOHYDR.(10068); EXTERN EFF-TEMPERATURE(10614); EXTERN EFF-COLD(10616); EXTERN EFF-HOT(10618); FOOD TECH-MEAT,MEAT BY-PRODUCTS(+13516); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); FOOD TECH-PREP,PROCESSNG,STORAGE(+13532); MUSCLE SYST-PHYSIOL,BIOCHEM(17504); SENSE ORGANS-GENL STUDS,METHS(20001); TEMPERATURE-GENL,METHS(23001); MICROORGANISMS-GENL,MIXED,UNSPEC(29500); MICROBIOLOG APPARAT,-METHS,MEDIA(32000); MED/CLIN MICROBIOL-GEN,METH,TECH(36001); MED/CLIN MICROBIOL-BACTERIOLOGY(36002); PUB HEALTH MICROBIOL(37400); FOOD/INDUS MICRO-FD/BEV SP CNTAM(+39002); DISINFECTION,DISINFECTANTS,STERIL(39500); PLANT PHYSIOL-CHEM CONSTITUENTS(51522)

Biosystematic Codes: MICROORGANISMS-UNSPECIFIED(01000); BACTERIA-UNSPECIFIED(06000); PHAEOPHYTA(14300); BOVIDAE(85715)

65070171

EVALUATION OF THE BOTULISM HAZARD IN FRESH MUSHROOMS WRAPPED IN COMMERCIAL POLY VINYL CHLORIDE FILM
 KAUTER D A; LILLY T JR; LYNT R
 DIV. MICROBIOL., US DEP. HEALTH EDUC. WELFARE, FOOD DRUG
 ADM., WASHINGTON, D.C. 20204, USA.
 J FOOD PROT 41 (2). 1978 120-121. Coden: JFPRD

Language: ENGLISH

The botulism hazard in fresh mushrooms wrapped in commercial

polyvinylchloride (PVC) film appears to be minimal. At the end of their normal shelf-life, 1078 packages of PVC-wrapped mushrooms were all free of botulinum toxin. Since inoculated mushrooms are occasionally toxic (14 in 250 packages) when only one 1/8-in. hole was punched in the wrapper and none became toxic when 2 holes were present, it seems prudent to recommend that PVC-wrapped tills of mushrooms have 2 holes in the wrapper.

Descriptors: SHELF LIFE TOXIN

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); FOOD TECH-FRUIT,S,NUT-S,VEGETABLES(+13504); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); FOOD TECH-PREP,PROCESSNG,STORAGE(+13532); MUSCLE SYST-PATHOLOGY(17506); NERVOUS SYST-PATHOLOGY(20506); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); BACTERIA-PHYSIOLOGY,BIOCHEMISTRY(31000); MED/CLIN MICROBIOL-BACTERIOLOGY(+36002); PUB HEALTH MICROBIOL(+37400); FOOD/INDUS MICRO-FD/BEV SP CNTAM(+39002)

Biosystematic Codes: EUBACTERIALES(07200); BASIDIOMYCETES(15300)

65070140

ACCUMULATION OF SLIME IN DRAINAGE PIPES AND THEIR EFFECT ON FLOW RESISTANCE

BLAND C E G; BAYLEY R W; THOMAS E V

CLAY PIPE DEV. ASSOC. LTD., LONDON, ENGL., UK.

J WATER POLLUT CONTROL FED 50 (1). 1978 134-143. Coden: JWPPA

Language: ENGLISH

Experimental work on the hydraulic roughness of clean new vitrified clay pipes carrying potable water is detailed and the results for the 3 types of interior finishes are given. Experimental work to determine the accumulation of microbiological slime on short lengths of drainage pipes of 6 different materials is discussed and results of the dry weight accumulation are given. Also described are the experimental apparatus used to determine the hydraulic roughness of vitrified clay and unplasticized polyvinyl chloride pipes of 100 mm nominal bore when flowing full. The results of various velocities and duration of test are given. The mean hydraulic roughness as expressed as a k value in the Colebrook-White equation for unplasticized poly-vinyl chloride and vitrified clay are practically the same after the pipes mature.

Descriptors: MICROBIOLOGICAL

Concept Codes: ECOLOGY-WATR RESRCH,FISHERY BIOL(07517); BIOPHYS-BIOENGINEERING(+10511); MOVEMENT(12100); MICROORGANISMS-GENL,MIXED,UNSPEC(29500); FOOD/INDUS MICRO-BIODEGRAD,DETER(+39006)

Biosystematic Codes: MICROORGANISMS-UNSPECIFIED(01000)

65070116

DIFFERENTIAL TITRATION OF POTASSIUM BINDING TO MEMBRANE PROTEINS USING ION SELECTIVE ELECTRODES

HASTINGS D F

DEP. BIOCHEM., DUKE UNIV. MED. CENT., DURHAM, N.C. 27710, USA.

ANAL BIOCHEM 83 (2). 1977 (RECD 1978) 416-432. Coden: ANBCA

Language: ENGLISH

A differential titration technique was developed using 2 K⁺ selective valinomycin polyvinylchloride matrix electrodes. By using an inactive membrane preparation in the reference half-cell during titration, the differential technique avoided the previously difficult problem of nonspecific binding of K⁺ to phosphate charges on the membrane phospholipids. The nonspecific binding of K⁺ to the membrane fragments was the same in the reference half-cell and the sample half-cell: it did not contribute to the observed titration potential. This technique was used to measure high affinity K⁺ binding to membrane-bound (Na⁺, K⁺)-ATPase [from *Squalus acanthias* rectal gland], which could be described by the following constants: K⁺ site concentration, 17.8 $\pm$ 0.4 nmol of K⁺ sites/ml of solution; K_d = 42 $\pm$ 2 μ M at ionic strength 0.1, in 97 mM choline at pH 7.4, on a preparation containing 2.52 mg of protein/ml at (Na⁺, K⁺)-ATPase specific activity of 1480 μ mol mg⁻¹ cntdot. h⁻¹.

Descriptors: SQUALUS-ACANTHIAS RECTAL GLAND SODIUM POTASSIUM ATPASE POTASSIUM SELECTIVE VALINOMYCIN POLY VINYL CHLORIDE ELECTRODE

Concept Codes: ECOLOGY-WATR RESRCH, FISHERY BIOL(07517); BIOCHEM METH-MINERALS(10059); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACD(10064); MINERALS(10069); BIOPHYS-GENERAL BIOPHYS TECH(+10504); BIOPHYS-MEMBRANE PHENOMENA(+10508); ENZYMES-METHODS(+10804); DIGESTIVE SYST-PHYSIOL, BIOCHEM(14004); PHARMACOL-GENERAL STUDIES(22002); CHEMOTHERAPY-GEN STUD, METH, METAB(38502)

Biosystematic Codes: CHONDRICHTHYES(85202)

65069176

TOTAL SYNTHESIS OF BETA LACTAMASE INHIBITORS RELATED TO CLAVULANIC-ACID

HUNT E; BENTLEY P H; BROOKS G; GILPIN M L

BEECHAM PHARM. RES. DIV., BROCKHAM PARK, BETCHWORTH RH3 7AJ, SURREY, ENGL., UK.

J CHEM SOC CHEM COMMUN (24). 1977 (RECD 1978) 906-907. Coden: JCCCA

Language: ENGLISH

(E)-3-Methoxycarbonylmethylene-7-oxo-4-oxa-1-azabicyclo[3.2.0]heptane, its geometric isomer and a related vinyl chloride were obtained by a 3-step synthesis from 4-methylthioazetidin-2-one.

Descriptors: METAB-DRUGS

Concept Codes: COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(+10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACD(10064); BIOPHYS-MOLECUL PROP, MACROMOLEC(+10506); ENZYMES-METHODS(10804); ENZYMES--

PHYSIOLOGICAL STUDIES(+10808); PATHOLOGY-THERAPY(12512); METABOLISM-GENL STUD, METAB PATHW(13002); PHARMACOL-GENERAL STUDIES(+22002); PHARMACOL-DRUG METAB, METAB STIMU(22003); BACTERIA-PHYSIOLOGY, BIOCHEMISTRY(+31000); MED/CLIN MICROBIOL--BACTERIOLOGY(36002); CHEMOTHERAPY-ANTIBACTERIAL AGENTS(+38504)
Biosystematic Codes: BACTERIA-UNSPECIFIED(06000)

65068071

OCCUPATIONAL ACRO OSTEOLYSIS

GAMA C; MEIRA J B B

RUA INHAMBU 156, INDIANOPOLIS, SAO PAULO 04520, BRAZ.

J BONE JT SURG AM VOL 60 (1). 1978 86-90. Coden: JBUSA

Language: ENGLISH

Occupational acro-osteolysis is a serious disease definitely related to the inhalation of agents involved in the polymerization of vinyl chloride. After variable periods of latency, the more or less characteristic clinical picture appears. A Raynaud's phenomenon is usually a premonitory sign indicating that alterations in bone will probably ensue. Scleroderma-like skin lesions and systemic involvement of variable degree occur frequently. The pathophysiology of the disease is unknown, but obstructive lesions of small peripheral arteries are thought to cause osteolysis of the distal phalanges of the fingers.

Descriptors: HUMAN VINYL CHLORIDE INHALATION RAYNAUDS PHENOMENON SKIN LESIONS SYSTEMIC INVOLVEMENT ARTERIAL LESIONS

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10060); CHORDATE BODY REGNS-EXTREMITIES(+11318); PATHOLOGY-GENERAL STUDIES(12502); CARDIOVASC SYST-BLD VESS PATHOL(+14508); RESPIRATORY SYST-GENL STUD, METHS(16001); BONE, JNTS, FASC, CONN/ADIP-PATHOL(+18006); INTEGUMENT SYST-PATHOLOGY(18506); ROUTES OF IMMUNIZ, INFECT, THERAP(22100); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR, WATR, SL POLLN(+37015)
Biosystematic Codes: HOMINIDAE(86215)

65065815

MUTAGENICITY OF WASTE PRODUCTS FROM VINYL CHLORIDE INDUSTRIES

RANNUG U; RAMEL C

WALLENBERG LAB., LILLA FRESCATI, S-104 05 STOCKHOLM 50, SWED.

J TOXICOL ENVIRON HEALTH 2 (5), 1977 1019-1029. Coden: JTEHD

Language: ENGLISH

The by-product from vinyl chloride production, EDC[ethylene dichloride]-tar, is a complex mixture of short-chained chlorinated aliphatic hydrocarbons. This mixture was tested for mutagenicity by the Ames Salmonella/mammalian microsome method. Since most of the components in the tar are poorly soluble in water, 3 agents were used as solvents or emulsifier: ethanol, DMSO [dimethylsulfoxide], and Tween 80. The results with all these agents showed that EDC-tar contains direct as well as indirect mutagenic constituents. The mutagenic effect observed in the test could not be due to 1 of the main components, EDC (1,2-dichloroethane). This substance showed a weak mutagenic effect, but only at higher concentrations than could be available in the highest concentration tested of the tar. Although the microsomal system enhanced the mutagenicity of EDC-tar and 1,2-dichloroethane, this enhancement was dependent on NADPH in the case of EDC-tar but independent of NADPH with 1,2-dichloroethane. The Salmonella mammalian microsome method seems to be a suitable tool for mutagenicity screening of complex chemical mixtures and identification of mutagenic constituents in such mixtures.

Descriptors: SALMONELLA MAMMALIAN MICROSOME METHOD ETHYLENE DI CHLORIDE TAR 1 2 DI CHLORO ETHANE CARCINOGENS NADPH

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID,PURNS,PYRM(10062); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); ENZYMES-GEN,COMPAR STUD,COENZYS(+10802); METABOLISM-GENL STUD,METAB PATHW(+13002); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-BIOCHEM(+24006); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); BACTERIAL AND VIRAL GENETICS(+31500); MICROBIOLOG APPARAT,METHS,MEDIA(32000); IN VITRO STUDS-CELLULR,SUBCELL(32600); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: EUBACTERIALES(07200); MAMMALIA-UNSPECIFIED AND EXTINCT(85700)

65065809

CYTO GENETIC INVESTIGATIONS ON LYMPHOCYTES FROM WORKERS EXPOSED TO VINYL CHLORIDE

LEONARD A; DECAT G; LEONARD E D; LEFEVRE M J; DECUYPER L J; NICAJSE C

DEP. RADIOBIOL., CENT. ETUD. ENERG. NUCL.-STUDIECENT. KERNENERG., B 2400 MOL, BELG.

J TOXICOL ENVIRON HEALTH 2 (5), 1977 1135-1141. Coden: JTEHD

Language: ENGLISH

Eleven male workers from the polymerization department of a

vinyl chloride factory, people employed in the laboratory of another vinyl chloride plant and 10 controls from outside the factory environment were examined for the presence of chromosome aberrations in blood lymphocytes. Chromosome anomalies such as fragments, rings, translocations and dicentric chromosomes were observed in most of the workers from the polymerization department. The medical history of these workers shows that they received frequent radiographs of the hands, feet, vertebral column and digestive tract. It is impossible to determine whether these chromosome anomalies resulted from vinyl chloride exposure.

Descriptors: HUMAN CARCINOGEN FRAGMENTS RINGS TRANSLOCATIONS DICENTRICS

Concept Codes: PHOTOGRAPHY-METHS,MATLS,APPARAT(01012); CYTOLOGY/CYTOCHEM-HUMAN(02508); GENETICS/CYTOGENET-HUMAN(+03508); SOCIAL BIOL/HUMAN ECOLOGY(0-5500); RADIATION BIOL-RADTN,ISOTOP TECH(06504); RADIATION BIOL-RADTN EFF,PROTECT(06506); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(+10506); ANATOMY/HISTOL-RADIOLOGIC(11106); CHORDATE BODY REGNS-BACK/BUTTOCK(11310); CHORDATE BODY REGNS-EXTREMITIES(11-318); PATHOLOGY-DIAGNOSTIC(12504); DIGESTIVE SYST-GENL STUDS,METHS(14001); BLOOD/BODY FLDS-BLOOD CELL STUDS(+15004); BLOOD/BODY FLDS-LYMPHAT TISS,RES(+15008); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); TISS CULTURE-APPARAT,METHS,MEDIA(32500); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215)

65061919

METABOLISM OF VINYL CHLORIDE DESTRUCTION OF THE HEME OF HIGHLY PURIFIED LIVER MICROSOMAL CYTOCHROME P-450 BY A METABOLITE

GUENGERICH F P; STRICKLAND T W

DEP. BIOCHEM., VANDERBILT UNIV. SCH. MED., NASHVILLE, TENN. 37232, USA.

MOL PHARMACOL 13 (6). 1977 993-1004. Coden: MOPMA

Language: ENGLISH

The NADPH-dependent, vinyl chloride-mediated destruction of cytochrome P-450 was demonstrated in rat liver microsomes and in highly purified reconstituted enzyme systems containing NADPH-cytochrome P-450 reductase (NADPH:ferricytochrome oxidoreductase, EC 1.6.2.4) and cytochrome P-450. This loss of cytochrome P-450 could be attributed to heme destruction, but not to lipid peroxidation or binding of electrophiles to free sulfhydryl groups. The system required all components necessary for mixed-function oxidation, including O₂, and was inhibited by CO, suggesting strongly that oxidative metabolism of vinyl chloride by cytochrome P-450 is necessary for the observed destruction. The NADPH-cytochrome P-450 reductase-catalyzed destruction of free and cytochrome P-450-bound heme was also observed in reconstituted systems in the absence of vinyl chloride. Inhibition experiments with CO and catalase suggest that the vinyl chloride-mediated destruction of cytochrome P-450 heme differs from these processes. Two proposed metabolites of vinyl chloride, vinyl chloride epoxide and 2-chloroacetaldehyde, do not appear to be responsible for the heme destruction. Evidence for the involvement of free radicals could not be demonstrated when the reaction was examined by EPR spectroscopy or when attempts were made to inhibit cytochrome P-450 destruction with radical-trapping agents.

Descriptors: RAT NADPH CYTOCHROME P-450 REDUCTASE EC-1.6.2.4

Concept Codes: BIOCHEM-GASES(10012); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-PORPHYRNS,BILE PIGM(10065); BIOCHEM STUD-LIPIDS(10066); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MEMBRANE PHENOMENA(10508); ENZYMES-PHYSIOLOGICAL STUDIES(10808); METABOLISM-GENL STUD,METAB PATHW(13002); METABOLISM-LIPIDS(13006); METABOLISM-PORPHYRINS,BILE PIGMN(13013); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); TOXICOL-GENL/EXP STUDS,METHS(22501); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

65061915

THE GAS. LIQUID CHROMATOGRAPHIC SEPARATION OF SOME COMPLEX ESTERS OF DI CARBOXYLIC ACIDS

GORTSEVA L V; KOFANOV V I; RAPAPORT L I

ALL-UNION RES. INST. HYG. TOXICOL. PEST. POLYM. PLAST., KIEV, USSR.

GIG SANIT (10). 1976 (RECD 1977) 64-65. Coden: GISAA

Language: RUSSIAN

Conditions for the GLC separation of complex esters of adipic, sebacic and o-phthalic acids, used as plasticizers of

polyvinyl chloride materials, were determined. The separation occurred in an isothermic regime of 160-240.degree. C. Nonsymmetrical dialkyl esters contained a significant quantity of corresponding symmetrical esters. The use of butyldodecylphthalate entails the problem of the migration of significant quantities of dibutylphthalate into the contacting medium. The data may facilitate the identification of complex esters of dicarbonic acids, and their determination during migration.

Descriptors: POLY VINYL CHLORIDE PLASTICIZER MIGRATION

Concept Codes: BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); EXTERN EFF-HOT(10618); MOVEMENT(12100); TOXICOL-GENL/EXP STUDS,METHS(22501); TEMPERATURE-GENL,METHS(23001)

65061904

A GAS LIQUID CHROMATOGRAPHY METHOD FOR MONITORING VINYL CHLORIDE IN DRUGS AND IN POLY VINYL CHLORIDE DRUG CONTAINERS/ WATSON J R; LAWRENCE R C; LOVERING E G

PHARM. CHEM DIV., DRUG RES. LAB., HEALTH PROT. BRANCH, OTTAWA, ONT. K1A 0L2, CAN.

CAN J PHARM SCI 12 (4). 1977 (RECD 1978) 94-97. Coden: CNJPA

Language: ENGLISH

A gas chromatographic method is described for monitoring vinyl chloride levels in drugs and polyvinyl chloride drug containers. After suspension of the powdered drug material or dissolution of the polymer in 1,2-dichloroethane, an aliquot of the supernate or homogeneous solution is injected (absolute injection technique) into a gas chromatograph equipped with a flame ionization detector and a methylsilicone column. The vinyl chloride, if present, is quantitated by simple computation of its peak area relative to a response factor, accurately predetermined using solutions of pure vinyl chloride gas and commercial vinyl chloride-air mixtures in 1,2-dichloroethane. The limit of vinyl chloride detectability is about 0.2 ppm for polyvinyl chloride containers and about 10-30 ppb in the case of drug dosage forms.

Concept Codes: BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); PHARMACOL-GENERAL STUDIES(22002); TOXICOL-GENL/EXP STUDS,METHS(22501); TOXICOL-PHARMACOLOGICAL(22504)

65060000

URINARY GLYCOSAMINO GLYCAN PATTERNS IN ANGIO SARCOMA OF THE LIVER

CURRAN K L; KUPCHELLA C E; TAMBURRO C H

CANCER CENT., UNIV. LOUISVILLE, LOUISVILLE, KY. 40201, USA.

CANCER (PHILA) 40 (6). 1977 (RECD 1978) 3050-3053.

Codon: CANCA

Language: ENGLISH

Glycosaminoglycans extracted from 24 h urine specimens, from patients with hepatic angiosarcoma and from normal/controls were separated as cetylpyridinium complexes into hyaluronic acid, chondroitin sulfate and heparin fractions, then further separated and characterized by anion-exchange chromatography and hyaluronidase susceptibility. The chromatographic pattern of the urinary chondroitin sulfate fraction in patients with angiosarcoma of the liver differed from those of controls in that there was a relative increase in the total amount of uronic acid in a hyaluronidase-resistant fraction and a decrease in a fraction susceptible to hyaluronidase digestion. These changes appeared to become more pronounced with advancing disease. Chromatographic patterns and determinations of hyaluronidase susceptibility indicated that the resistant fraction was heparan sulfate and that the susceptible fraction was chondroitin-4-sulfate and/or chondroitin-6-sulfate. [These observations constitute a promising lead in early detection of vinyl chloride induced liver disease.]

Descriptors: HUMAN VINYL CHLORIDE CARCINOGEN HYALURONIDASE CHROMATOGRAPHY HEPARAN SULFATE CHONDROITIN SULFATE URONIC-ACID HYALURONIC-ACID

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); CLIN BIOCHEM-GENL STUDIES(+10006); BIOCHEM METH-CARBOHYDRATES(1005-8); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-GENERAL BIOPHYS TECH(10504); ENZYMES-METHODS(10804); MOVEMENT(12100); PATHOLOGY-DIAGNOSTIC-(+12504); METABOLISM-CARBOHYDRATES(+13004); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(+1450-8); URIN SYST/EXT SECR-PHYSL, BIOCHEM(15504); TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ENVIRONMENTAL, INDUSTR(22506); NEOPLSMS/NEOPL AGENTS-DIAGNS METH(+24001); NEOPLSMS/NEOPL AGENTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(37-013); ENVIRON HEALTH-AIR, WATR, SL POLLN(37015)

Biosystematic Codes: HOMINIDAE(86215)

65058305

EFFECTS OF SUBSTRATE BIO DEGRADABILITY ON THE MASS AND ACTIVITY OF THE ASSOCIATED ESTUARINE MICRO BIOTA

BOBBIE R J; MORRISON S J; WHITE D C

DEP. BIOL. SCI., FLA. STATE UNIV., TALLAHASSEE, FLA. 32306, USA.

APPL ENVIRON MICROBIOL 35 (1). 1978 179-184. Codon: AIMID

Language: ENGLISH

Multiple biochemical assays of microbial mass and activities were applied to the estuarine detrital microbiota colonizing morphologically similar polyvinyl chloride needles and needles from slash pine (*Pinus elliotii*). Biodegradable pine needles

consistently showed 2- to 10-fold higher values of extractable ATP, rates of O₂ utilization, activities of alkaline phosphatase and phosphodiesterase and the mucopolysaccharide cell wall component muramic acid than did the polyvinyl chloride needles, during a 14 wk incubation in a semitropical estuary. The higher activities by the microbiota of the biodegradable substrate correlated with estimates of the microbial density from scanning electron microscopy. The microbial community associated with the nondegradable substrate showed minimal activity of .beta.-D-galactosidase, .beta.-D-glucosidase and .alpha.-D-mannosidase in contrast to the biota of the degradable substrate, which showed 10- to 100-fold higher activities of these glycoesterases. These enzymes logically could be involved in catabolism of the carbohydrate polymers of the detritus. Assuming equivalent rates of predation, a surface that is also a utilizable substrate supports a 3- to 5-fold more active microbial population.

Descriptors: PINUS-ELLIOTTII POLY VINYL CHLORIDE MURAMIC-ACID ALKALINE PHOSPHATASE PHOSPHO DI ESTERASE BETA-D GALACTOSIDASE BETA-D GLUCOSIDASE ALPHA-D MANNOSIDASE SEMI TROPICAL ESTUARY

Concept Codes: ELECTRON MICROSCOPY(01058); ECOLOGY-OCEANOGRAPHY, LIMNOLOGY(+07510); ECOLOGY-WATR RESRCH, FISHERY BIOL(0751-7); COMPARATIVE BIOCHEM-GENL STUDIES(10010); BIOCHEM-GASES(10-012); BIOCHEM METH-PROTNS, PEPTDS, AM AC(10054); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); BIOCHEM STUD-CARBOHYDR.(10068); ENZYMES-GEN, COMPAR STUD, COENZYM(+10802); ENZYMES-METHODS(10804); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); METABOLISM-GENL STUD, METAB PATHW(+13002); METABOLISM-CARBOHYDRATES(+13004); MICROORGANISMS-GENL, MIXED, UNSPEC(+29500); MICROBIOLOG APPARAT, METHS, MEDIA-(32000); FOOD/INDUS MICRO-BIODEGRAD, DETER(+39006)

Biosystematic Codes: MICROORGANISMS-UNSPECIFIED(01000); CONIFEROPSIDA (CONIFERAE)(25102)

65055803

EFFECTS OF POLY VINYL CHLORIDE INGESTION BY DOGS

JOHNSON W S; SCHMIDT R E

VET. SCI. DIV., COMP. PATHOL. BRANCH, US AIR FORCE SCH.
AEROSP. MED., BROOKS AIR FORCE BASE, TEX. USA.

AM J VET RES 38 (11). 1977 1891-1892. Coden: AJVRA

Language: ENGLISH

Polyvinyl chloride (PVC) acrylic thermoplastic sheeting was fed to 6 dogs to determine if ingestion during periods of normal transit of military working dogs would be toxic and affect the safety of this material for construction of shipping containers. The test dogs were fed PVC acrylic (0.125 g/kg of body wt; by gelatin capsule) twice each day for 5 days: for 2 dogs, the test material was in a shredded form; for 2 dogs, the material was diced; and for 2 dogs, it was powdered. Two other dogs were used as controls. Dogs were observed for clinical signs, and feed consumption and body weights were recorded. Blood and urine samples were recorded. Blood and urine samples were examined. All animals were necropsied approx. 10 days after the feeding was stopped. Clinical or pathologic indication of a toxic effect of PVC was not seen within the time limits of the study.

Descriptors: FEED CONSUMPTION WEIGHT BLOOD URINE SHIPPING
CONTAINER SAFETY

Concept Codes: BEHAVIOR BIOL-ANIMAL BEHAVIOR(07003); BIOCHEM
STUD-GENERAL(10060); PHYSIOLOGY-GENERAL STUDIES(12002);
MOVEMENT(12100); NUTRITION-GENL,NUTR STATUS,METHS(13202);
BLOOD/BODY FLDS-BLOOD,LYMPH STUD(15002); URIN SYST/EXT
SECR-PHYSL,BIOCHEM(15504); DENTAL/ORAL BIOL-GENL STUD,METHS(1-
9001); ROUTES OF IMMUNIZ.INFECT,THERAP(22100); TOXICOL-ENVIRO-
NMNTL,INDUSTR(22506); TOXICOL-VETERINARY(*22508); VETERINARY
SCI-GENL STUDS,METHS(*38002)

Biosystematic Codes: CANIDAE(85765)

65055737

POLY VINYL CHLORIDE PLASTICS THE ENEMY WITHIN

BELL F P

DEP. PATHOL., MCMASTER UNIV., HAMILTON, ONT., CAN.

ARTERY 2 (5). 1976 (RECD 1977) 384-389. Coden: ARTED

Language: ENGLISH

This editorial illustrated the inherent danger in using polyvinylchloride (PVC) plastics in medicine and research. PVC plastics contain agents called plasticizers such as di-2-ethylhexyl phthalate (DEHP). DEHP is toxic to chick embryo heart cells, cultured mouse fibroblast L-cells and neonatal rat cerebellar fibroblasts. DEHP also apparently modifies erythrocyte metabolism and alters platelet adhesiveness as well as the survival of platelets stored frozen in PVC bags. Intake and accumulation of phthalates from plastic medical devices occurs in patients undergoing a variety of medical treatments such as blood transfusion, hemodialysis, extracorporeal circulation and umbilical catheterization. The use of PVC plastics should be curtailed until its chemical constituents are identified and their biochemical and pharmacological effects are evaluated.

Descriptors: HUMAN CHICK RAT MOUSE BLOOD TRANSFUSION HEMO

DIALYSIS EXTRACORPOREAL CIRCULATION UMBILICAL CATHETERIZATION
ERYTHROCYTE METABOLISM

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOPHYS-MOL-
ECUL PROP,MACROMOLEC(10506); MOVEMENT(12100); METABOLISM-GENL
STUD,METAB PATHW(*13002); CARDIOVASC SYST-PHYSIOL,BIOCHEM(145-
04); BLOOD/BODY FLDS-GENL STUDS,METHS(15001); BLOOD/BODY
FLDS-BLOOD CELL STUDS(*15004); URIN SYST/EXT SECR-GEN
STUD,METH(15501); REPRODUCT SYST-PATHOLOGY(16506); BONE,JNTS,-
FASC,CONN/ADIP-PHY,BCH(18004); NERVOUS SYST-PHYSIOL,BIOCHEM(2-
0504); TOXICOL-GENL/EXP STUDS,METHS(*22501); TOXICOL-ENVIRONM-
NTL,INDUSTR(22506); PEDIATRICS(25000); DEVELOPMNTL BIOL-GENL,-
DESCRIPTIVE(25502); DEVELOPMNTL BIOL-EXPERIMENTAL(25504); TISS
CULTURE-APPARAT,METHS,MEDIA(32500); IN VITRO STUDS-CELLULR,SU-
BCELL(32600)

Biosystematic Codes: GALLIFORMES(85536); HOMINIDAE(86215);
MURIDAE(86375)

65055732

A HYGIENIC ASPECT OF THERMOPLASTIC RESINS AS FOOD PACKAGING MATERIALS

KWON S P; CHUNG Y; KIM S-A; SHIM K S

COLL. MED., YONSEI UNIV., SEOUL, KOREA.

KOREAN CENT J MED 31 (4). 1976 (RECD 1977) 335-343.
Coden: CHUIA

Language: KOREAN

The leaching of polyvinyl chloride (PVC), polyethylene (PE), polypropylene (PP), polyvinylidene chloride (PVDC) from food packaging materials and PVC from blood storage bags was studied. PE and PP and PVC of blood storage bags were not detected in Pb and Cd compounds. The PVC level of food packaging materials was detected. This level was below the permissible level of 100 ppm. Phthalates plasticizer from PVC food containers and blood storage bags were measured in the range of 0.00-0.44 .mu.g/g and 0.032-0.073 .mu.g/g, respectively, when the container held a saline solute at 30.degree. C for 1 day and 3.30 .mu.g/g and 0.0-9.23 .mu.g/g, respectively, when the container held 4% acetic acid solute at 60.degree. C for 1 day. The ability of these packaging materials to protect food contents from degradation by light was examined. The casted propylene transmitted all UV light, the oriented propylene transmitted 50% and PVC banned under 270 m.mu. UV.

Descriptors: POLY VINYL CHLORIDE POLY ETHYLENE POLY PROPYLENE POLY VINYLIDENE CHLORIDE BLOOD STORAGE BAGS LEAD CADMIUM UV

Concept Codes: RADIATION BIOL-RADTN EFF.PROTECT(06506); MINERALS(10069); BIOPHYS-MOLECUL PROP.MACROMOLEC(+10506); BIOPHYS-BIOENGINEERING(10511); EXTERN EFF-LIGHT,DARKNESS(1060-4); MOVEMENT(12100); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); FOOD TECH-PREP.PROCESSNG.STORAGE(+13532); BLOOD/BODY FLDS-GENL STUDS,METHS(+15001); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-FOOD,RESIDS.ADDIT,PRESRV(+22502)

65050039

MEDICAL APPLICATION OF SYNTHETIC MEMBRANES

NAKABAYASHI N

INST. MED. DENT. ENG., TOKYO MED. DENT. UNIV., CHIYODA-KU, TOKYO, JPN.

MEMBRANE 2 (5). 1977 29-37. Coden: MAKUD

Language: JAPANESE

Artificial membranes used as artificial skin and artificial kidneys are discussed with special reference to their abilities of passing substances. H2O vapor passing rate of normal skin and diseased skin and various polymer membranes such as vinylidene chloride, polyethylene, vinyl chloride, cellophane, polyester, polycarbonate, polyamide, polyvinyl alcohol, polypropylene, properties of collagenic membranes and hemodialyzing membranes including cuprophane and polyacrylonitrile are discussed.

Descriptors: VINYLIDENE CHLORIDE POLY ETHYLENE VINYL CHLORIDE CELLOPHANE POLY ESTER POLY CARBONATE POLY AMIDE POLY VINYL ALCOHOL POLY PROPYLENE HEMO DIALYSIS COLLAGENIC MEMBRANE CUPROPHAN POLY ACRYLONITRILE

Concept Codes: BIOCHEM-PHYSIOLOGL WATER STUD(10011); BIOCHEM METH-GENERAL(10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); BIOPHYS-MOLECUL PROP.MACROMOLEC(+10506); BIOPHYS-BIOENGINEERING(+10511); MOVEMENT(12100); CARDIOVASC SYST-PHYSIOL,BIOCHEM(14504); CARDIOVASC SYST-HEART PATHOLOGY(14506); BLOOD/BODY FLDS-GENL STUDS,METHS(15001); URIN SYST/EXT SECR-GEN STUD,METH(+15501); INTEGUMENT SYST-GENL STUDS,METHS(+18501)

65049404

PARTICLES OF DI-2 ETHYLHEXYL PHTHALATE IN INTRA VENOUS INFUSION FLUIDS MIGRATING FROM POLY VINYL CHLORIDE BAGS

HORIOKA M; AOYAMA T; KARASAWA H

FAC. MED., HOSP. PHARM., KYUSHU UNIV., MAIDASHI 3-1-1, HIGASHI, FUKUOKA 812, JPN.

CHEM PHARM BULL (TOKYO) 25 (7). 1977 1791-1796. Coden: CPBTA

Language: ENGLISH

Mechanical measurement of particles in the infusion fluid contained in a polyvinyl chloride (PVC) bag revealed the presence of a large number of particles and principle of these particles was examined. It was thereby confirmed that the majority of particles in the solution contained in a PVC bag are liquid particles of di(2-ethylhexyl) phthalate (DEHP) used as a plasticizer for PVC, and these particles adhere to the inner wall of the bag or float in the solution. When the PVC bag is shaken before sampling the fluid, the liquid particles of DEHP are liberated and dispersed as microparticles which are counted as particles by HIAC automatic counter, but not observed on membrane filter under a microscope. Detecting of such a liquid particle, a considerable difference between the results from a mechanical method and that from a microscopic observation was pointed out. [With the progress in modern medicine, a large quantity of i.v. infusion fluids is used for treatment, and the effect of such an infusion on patients, especially the hazardous effect of foreign particulate matter present in infusion fluids, has become a great problem.]

Descriptors: HUMAN MICROSCOPIC OBSERVATION

Concept Codes: MICROSCOPY-GENL,SPECL TECHNIQUES(01052); CLIN BIOCHEM-GENL STUDIES(+10006); BIOCHEM STUD-LIPIDS(10066); BIOPHYS-GENERAL BIOPHYS TECH(10504); CARDIOVASC SYST-GENL STUDS,METHS(14501); BLOOD/BODY FLDS-GENL STUDS,METHS(+15001); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501)

Biosystematic Codes: HOMINIDAE(86215)

65049265

VINYL CHLORIDE ITS IMPACT ON OCCUPATIONAL MEDICINE PRACTICE
IN IRAN

ARYANPUR J

PUBLIC HEALTH OCCUP. MED. SERV., NATL. IRANIAN OIL CO., P.O.
BOX 1863, TEHRAN, IRAN.

J OCCUP MED 19 (10). 1977 689-692. Coden: JOCMA

Language: ENGLISH

Awareness that VCM [vinyl chloride medicine] has been demonstrated to be a carcinogen producing a rare tumor, angiosarcoma, has led the company to tighten its medical monitoring and industrial hygiene controls. A temporary TLV [threshold limiting value] was established for VCM at 25 ppm consistent with the operating procedures of the company and local geographical conditions. The potential harm from industrial chemicals has stimulated the government and the company to support further control of inplant and outplant environmental hazards from industrial operations.

Descriptors: HUMAN CARCINOGENESIS ANGIO SARCOMA

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); CARDIOVASC SYST-BLD VESS PATHOL(14508); TOXICOL-ANTIDOTES, PREVENTIVE(22505); TOXICOL-ENVIRONMNTL, INDUSTR(*22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24007); ENVIRON HEALTH-OCCUPATNL HEALTH(*37013); ENVIRON HEALTH-AIR, WATR, SL POLLN(*37015)

Biosystematic Codes: HOMINIDAE(86215)

65047285

A METHOD FOR DETECTING CARCINOGENIC ORGANIC CHEMICALS USING
MAMMALIAN CELLS IN CULTURE

STYLES J A

CENT. TOXICOL. LAB., IMP. CHEM. IND. LTD., ALDERLEY PARK,
MACCLESFIELD, CHESHIRE, ENGL., UK.BR J CANCER 36 (5). 1977 (RECD 1978) 558-563. Coden:
BJCAA

Language: ENGLISH

A method for testing organic chemicals for their carcinogenic potential is described. Baby hamster kidney cells (BHK-21/C1 13) were exposed to different doses of test compound in liquid tissue culture medium containing rat liver postmitochondrial supernatant and cofactors (S-9 mix) to aid metabolism, but without serum. Survival of cells following exposure to the compound was assessed by cloning in liquid growth medium. Transformation was assessed by colony growth in semi-solid agar. The dose-response curve for survival was used to determine the LC50 [median lethal concentration] of the compound. A dose-response curve for transformation was constructed and a 5 fold increase in transformation frequency at the LC50 was regarded as a positive test result. The method may also be used for testing gaseous compounds. Cells grown in monolayers and overlaid with serum-free medium and S-9 mix were exposed to vinyl chloride gas mixed with air. After exposure, the treated cells were trypsinized, resuspended in growth medium and survival and transformation assays were performed. The methods described are illustrated by examples taken from an evaluation study using 120 compounds and were

a than 90% accurate in distinguishing between carcinogens and noncarcinogens.

Descriptors: HAMSTER RAT LIVER S-9 MIX BHK-21-C-13 KIDNEY CELLS VINYL CHLORIDE GAS CARCINOGEN

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(*02506); MATHEMATIC BIOL/STATISTIC METH(04500); BIOCHEM-GASES(10012); BIOCHEM METH-PROTNS, PEPTDS, AM AC(10054); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACD(10064); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS-MEMBRANE PHENOMENA(10508); ENZYMES-METHODS(10804); PATHOLOGY-NECROSIS(12510); METABOLISM-GENL STUD, METAB PATHW(13002); METABOLISM-ENERGY, RESPIRATION(-13003); DIGESTIVE SYST-PHYSIOL, BIOCHEM(14004); URIN SYST/EXT SECR-GEN STUD, METH(15501); ROUTES OF IMMUNIZ, INFECT, THERAP(22-100); TOXICOL-GENL/EXP STUDS, METHS(*22501); NEOPLSMS/NEOPL AGNTS-CELL LINE(*24005); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(*24-007); PEDIATRICS(25000); TISS CULTURE-APPARAT, METHS, MEDIA(325-00)

Biosystematic Codes: MAMMALIA-UNSPECIFIED AND EXTINCT(85700); CRICETIDAE(86310); MURIDAE(86375)

R&S 138548

65045540

PHYSIOLOGICAL CHARACTERISTICS OF CLADOSPORIUM-RESINAE

LEVKINA L M; REBRIKOVA N L

DEP. LOWER PLANTS, M.V. LOMONOSOV MOSC. STATE UNIV., MOSCOW, USSR.

MIKOL FITOPATOL 10 (5). 1976 (RECD 1977) 374-380.

Coden: MIFIB

Language: RUSSIAN

Tests were conducted on different strains of *C. resinae*, which grows on petroleum products, fuel oils, lubricants, varnishes, paints and polyvinyl chloride plastics, causing spoilage. The fungus utilized n-alkanes with more than 13 C atoms (especially C10-C25) better than hydrocarbons with a shorter chain. The number of fatty acids formed during the growth of the fungus correlated with its biomass, and may serve as an index of the degree of utilization of a given hydrocarbon. During growth on hydrocarbons with C14-C16, the *C. resinae* strains released tartaric and oxalic acids into the medium. Two morphological forms of this fungus, *C. resinae* f. *resinae* and *C. resinae* f. *avellaneum*, showed differences in the utilization of different hydrocarbons, the acidification of the medium and the formation of organic acids.

Descriptors: CLADOSPORIUM-RESINAE-F-RESINAE CLADOSPORIUM-RESINAE-F-AVELLANEUM FATTY-ACID POLY VINYL CHLORIDE PETROLEUM FUEL OIL LUBRICANT VARNISH PAINT HYDRO CARBON

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-LIPIDS(10066); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM-LIPIDS(+13006); MICROBIOLOG APPARAT,METHS,MEDIA(32-000); FOOD/INDUS MICRO-BIODEGRAD,DETER(+39006); PLANT MORPHOL,EMBRYOL,ANATOMY(51000); PLANT PHYSIOL-METABOLISM(+515-19)

Biosystematic Codes: DEUTEROMYCETES(15500)

65043053

ENZYME HISTOCHEMICAL HISTOMETRICAL AND ULTRASTRUCTURAL STUDIES OF SPLEENS IN VINYL CHLORIDE DISEASE

HEUSERMANN U; STUTTE H J

ABT. ALLG. PATHOL. PATHOL. ANAT., KLIN., CHRIST.-ALBRECHTS-UNIV. KIEL, HOSPITALSTR. 42, D-2300 KIEL, W. GER.

VIRCHOWS ARCH A PATHOL ANAT HISTOL 375 (4). 1977 303-318.

Coden: VAAPB

Language: GERMAN

By histometric, enzyme histochemical and EM investigations it was demonstrated that the pathological changes in the spleen [human] in vinylchloride-disease are primary. Fibroblastic cells are the only specific splenic cells involved. Fiber-associated reticulum cells of the red pulp and fibroblastic reticulum cells in white pulp are stimulated to produce excessive amounts of the extracellular elements of connective tissue, especially collagen fibrils. The newly formed connective tissue caused obliteration of extracellular blood channels in the red pulp, and thus a reduction in the number of pulp-cord macrophages and scarring of the perivascular lymphatic sheaths. The results of this fibrosing process are characteristic quantitative changes in the splenic

histologic structures. These changes are different from those structural alterations occurring in spleens following extrasplenic hemodynamic changes, such as thrombosis of the splenic veins or cirrhosis of the liver.

Descriptors: HUMAN ELECTRON MICROSCOPY MACROPHAGES FIBROBLASTIC CELLS

Concept Codes: MICROSCOPY-HISTOL,HISTOCHEM TECH(01056); ELECTRON MICROSCOPY(01058); CYTOLOGY/CYTOCHEM-ANIMAL(02506); BIOCHEM METH-PROTNS,PEPTDS,AM AC(10054); BIOCHEM STUD-GENERAL-(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); ENZYMES-METHODS(10804); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); ANATOMY/HISTOL-MICRO,ULTRAMICRSC(+11108); CARDIOVASC SYST-BLD VESS PATHOL(14508); BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006); BLOOD/BODY FLDS-LYMPHAT TISS,RES(+15008); BONE,JNTS,FASC,CONN-/ADIP-PHY,BCH(+18004); TOXICOL-GENL/EXP STUDS,METHS(+22501)

Biosystematic Codes: HOMINIDAE(86215)

R&S 138549

65043022

PERMISSIBLE LEVELS OF MIGRATION OF STABILIZERS FROM POLY VINYL CHLORIDE

SHEFTEL V O; TSAM Z S; MARTSON L V; KALINICHENKO L T
ALL-UNION RES. INST. HYG. TOXICOL. PESTIC. POLYM. PLAST.,
KIEV, USSR.

GIG SANIT (3). 1977 109-110. Coden: GISAA

Language: RUSSIAN

A series of experiments were conducted with mice and rats to determine the hygienic effects of migration into the water supply of stabilizers from polyvinylchloride products, largely Pb, organotin and Ba-Cd compounds. Rats in the 10th mo. of Pb intoxication manifest increased coproporphyrin content in the urine, while decapitated animals had deposits of Pb in the liver and bone tissue. Rats administered 0.005 mg/kg of lead acetate for 12 mo. manifest dystrophic changes in the liver and kidneys. Organotin stabilizers (dioctylstannous carboxylate [DOSC], dioctylthiotin [DOTT], diisooctylthioglycolate of dibutyltin [DIOTGDBT]) proposed for shatterproof vinyl plastic water supply components were highly cumulative in rats, with coefficients of accumulation of 1.34 (DOTT), 1.45 (DOSC) and 0.3 (DIOTGDBT). A single dose of DIOTGDBT at 1/5 LD50 on the 9th day of pregnancy impaired the course of pregnancy and the process of embryogenesis in rats. The permissible level of migration into water from Pb materials can be set at 0.05 mg/l for organotin stabilizers.

Descriptors: MICE RATS LEAD CADMIUM BARIUM BASED COMPOUNDS
LIVER KIDNEY BONE PREGNANCY URINE

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PORPHYRINS,BILE PIGM(10065); MINERALS(10069); ANATOMY/HISTOL-EXPERIMENTAL(11104); CHORDATE BODY REGNS-HEAD(11304); MINERALS(13010); METABOLISM-PORPHYRINS,BILE PIGMN(13013); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); DIGESTIVE SYST-PATHOLOGY(14006); URIN SYST/EXT SECR-PHYSL,BIOCHEM(15504); URIN SYST/EXT SECR-PATHOLOGY(15506); REPRODUCT SYST-PATHOLOGY(16506); BONE,JNTS,FASC,CONN/ADIP-PHY,BCH(18004); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); PUB HEALTH-ADMINISTR,STATISTICS(+37010); ENVIRON HEALTH-AIR,WATR.-SL POLLN(+37015)

Biosystematic Codes: MURIDAE(86375)

characteristics may apply to other monomers and such components of polymeric materials as plasticizers, stabilizers, dyes and other additives.

Descriptors: REVIEW ANIMALS FOOD PRODUCTS OCCUPATIONAL EXPOSURE ANGIO SARCOMA MODEL POLYMER COMPOUND

Concept Codes: BIOCHEM STUD-GENERAL(10060); METABOLISM-GENL STUD,METAB PATHW(+13002); DIGESTIVE SYST-PHYSIOL,BIOCHEM(14004); CARDIOVASC SYST-BLD VESS PATHOL(14508); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

Biosystematic Codes: ANIMALIA-UNSPECIFIED(33000); HOMINIDAE-(86215)

65042285

ENGINEERING CONTROL ASSESSMENT OF THE PLASTICS AND RESINS INDUSTRY CASE STUDY MANUFACTURE OF POLY VINYL CHLORIDE BY BULK POLYMERIZATION/

SCHOULTZ K S; BOCHINSKI J H; GIDEON J A

ENVIRO CONTROL INC., ONE CENTRAL PL., 11300 ROCKVILLE PIKE,
ROCKVILLE, MD. 20852, USA.

AM IND HYG ASSOC J 38 (12). 1977 653-661. Coden: AIHAA

Language: ENGLISH

As part of a control technology assessment of the plastics and resins industry, a bulk polymerization process manufacturing polyvinyl chloride (PVC) is surveyed. Effective control techniques for reducing workplace concentrations of vinyl chloride include a computerized process design, an automatic air monitoring system for rapid leak detection, a novel local exhaust system, various equipment modifications to prevent leaks and a PVC stripping operation. Personal and area sampling data are evaluated to determine the effectiveness of the overall control system. The control techniques can be applied to other processes where toxic materials are used.

Concept Codes: GENL BIOL-INFRMTN,DOCU,COMP APPL(00530); ECOLOGY-BIOCLIMATOL,BIOMETEOROL(07504); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-BIOENGINEERING(+10511); BIOPHYS-BIOCYBERNETICS(10515); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

65042877

THE HAZARDS OF ALIMENTARY PENETRATION OF VINYL CHLORIDE INTO THE HUMAN BODY

BYKHIOVSKII A V; DYUBANKOVA E N

F.F. ERISMAN MOSC. INST. HYG., MOSCOW, USSR.

GIG SANIT (3). 1977 70-74. Coden: GISAA

Language: RUSSIAN

Studies of the dangers in utilization of polyvinylchloride products are reviewed. Migration of residual vinyl chloride (VC) from containers into food products, the incidence of occupational angiosarcoma linked to VC exposure, international reductions of permissible concentrations of VC, the mechanisms of occupational VC disease and pathways of VC entrance into the bodies of humans and animals are discussed. VC can be taken as a model for polymeric materials in general, and its

65042242

SANITARY HYGIENIC ASSESSMENT OF PLASTICIZED POLY VINYL CHLORIDE MATERIALS

RUDENKO A A

GIG SANIT (8). 1977 101-102. Coden: GISAA

Language: RUSSIAN

Tests were performed under modeled conditions with the highest possible temperature (40.degree. C) and simultaneous air exchange of emissions from plasticized polyvinylchloride in 1 type of decorative paneling and 2 types of artificial leather. While plasticized polyvinylchloride materials were not sources of air contamination with Cl-containing components, higher alcohols used in plasticizers emitted complex esters in proportion to their content in the materials. In material with 35% plasticizer content, these esters were at the permissible level of 0.05 mg/m3.

Descriptors: AIR CONTAMINATION

Concept Codes: ECOLOGY-BIOCLIMATOL, BIOMETEOROL (07504); BIOCHEM STUD-GENERAL (10060); EXTERN EFF-HOT (10618); TOXICOL-ENVIRONMNTL, INDUSTR (+22506); TEMPERATURE-GENL, METHS (23001); PUB HEALTH-ADMINISTR, STATISTIC-S (+37010); ENVIRON HEALTH-AIR, WATR, SL POLLN (+37015)

65037120

TOXICOLOGY AND DRINKING WATER CONTAMINANTS

STOKINGER H E

CENT. DIS. CONTROL, NATL. INST. OCCUP. SAF. HEALTH, ROBERT A. TAFT LAB., USPHS, CINCINNATI, OHIO, USA.

AM WATER WORKS ASSOC J 69 (7). 1977 399-402. Coden: JAWWA

Language: ENGLISH

The National Cancer Institute (NCI) reported chloroform to be carcinogenic in mice and rats when administered by mouth. The tumors occurred in highly debilitated animals, resulting from the use of a maximal tolerated chloroform dose to which significant numbers of the test animals succumbed and the survivors ended up in an unhealthy condition. Feeding experiments conducted in another laboratory involving chloroform in lower doses (1/6-1/8 of those at the NCI) yielded no malignancies in mice. No dogs developed liver tumors after 7.5 yr of exposure to 30 mg/kg per day of chloroform. Chloroform must be regarded as an animal carcinogen of extremely low potency. Extrapolating animal data to man for the purpose of estimating the incidence of cancer in human populations can prove a fallacy. Biologic response to a toxic agent is not the same at low and high dosages, an assumption made by data extrapolators. The body has built-in antagonists that can counteract the toxicity of foreign substances, including potential carcinogens. Natural and dietary sources of anticarcinogens also exist. Instances are cited where thresholds for cancer production were demonstrated in animals and man. The threshold for tumor formation in rat livers ranges between 10-50 ppm in air of vinyl chloride. The incidence of liver tumors in vinyl chloride workers is extremely low and may be based genetically on inborn errors of metabolism.

Descriptors: MICE RATS HUMANS DOGS CARCINOGENESIS LIVER TUMORS GENETIC ERRORS VINYL CHLORIDE WORKERS

Concept Codes: GENETICS/CYTOGENET-ANIMAL (03506); GENETICS/CYTOGENET-HUMAN (03508); MATHEMATIC BIOL/STATISTIC METH (04500); ECOLOGY-BIOCLIMATOL, BIOMETEOROL (07504); BIOCHEM STUD-GENERAL (-10060); METABOLISM-GENL STUD, METAB PATHW (+13002); NUTRITION-GENL, NUTR STATUS, METHS (13202); DIGESTIVE SYST-PATHOLOGY (14006); TOXICOL-GENL/EXP STUDS, METHS (+22501); TOXICOL-ENVIRONMNTL, INDUSTR (+22506); NEOPLSMS/NEOPL AGNTS-PATH, CLINIC (+24004); ENVIRON HEALTH-OCCUPATNL HEALTH (+37013); ENVIRON HEALTH-SEWG DISP, SANITAR (37014); ENVIRON HEALTH-AIR, WATR, SL POLLN (+37015)

Biosystematic Codes: CANIDAE (85765); HOMINIDAE (86215); MURIDAE (86375)

65037109

ALKYLATION OF RNA BY VINYL CHLORIDE METABOLITES IN-VITRO AND IN-VIVO FORMATION OF 1-N-6 ETHENO ADENOSINE

LAIB R J; BOLT H M
 INST. TOXIKOL., UNIV., WILHELMSTR. 56, D-7400 TUEBINGEN 1,
 W. GER.

TOXICOLOGY 8 (2), 1977 185-196. Coden: TXYA

Language: ENGLISH

Rat liver microsomes were incubated with NADPH, 1,2-[14C]vinyl chloride and poly(A). The latter was reisolated from the incubations and hydrolyzed. The radioactivity, originating from [14C]vinyl chloride, which was irreversibly attached to the poly(A) was confined to 1-N6-etheno-adenosine (3.beta.-ribofuranosyl-imidazo[2,1-l]purine). When rats were exposed to 1,2-[14C]vinyl chloride, part of the radioactivity was incorporated into RNA of liver. This radioactive labeling exhibited a 1st maximum, 14 h, and a 2nd maximum, 72 h after ending the exposure. Analysis of hydrolysate of liver RNA showed that all natural nucleosides of RNA were labeled. Besides, small amounts of radioactivity could be detected which were confined to 1-N6-etheno-adenosine. The experiments support the theory that vinyl chloride metabolites react with adenosine moieties of nucleic acid under formation of 1-N6-etheno-adenosine. Measurement of incorporation of radioactivity into nucleic acids after exposure of animals to radioactive vinyl chloride is not applicable as a means of determining the alkylating potency of vinyl chloride metabolites towards nucleic acids in vivo.

Descriptors: RAT LIVER

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(02506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062); BIOPHYS-MEMBRANE PHENOMENA(10508); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM-NUCL ACD,PURINS,PYRIM(+13014); DIGESTIVE SYST-PHYS-10L,BIOCHEM(+14004); TOXICOL-GENL/EXP STUDS,METHS(+22501); TISS CULTURE-APPARAT,METHS,MEDIA(32500); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

65037044

PARTICLE SIZE EFFECTS IN THE DETERMINATION OF RESPIRABLE ALPHA QUARTZ BY X-RAY DIFFRACTION

EDMONDS J W; HENSLEE W W; GUERRA R E
 DOW CHEM. CO., ANAL. LAB., MIDLAND, MICH. 48640, USA.
 ANAL CHEM 49 (14), 1977 2196-2203. Coden: ANCHA

Language: ENGLISH

Thin layers (1.torsm, 200 .mu.g/cm2) of .alpha.-quartz particles on Ag and poly(vinyl chloride) membranes are shown to exhibit preferred orientation enhancing the (10.hlvn.11) diffraction line (3.34 .ANG.) for particles in the normally accepted size range for X-ray diffraction standards (< 15 .mu.m). Respirable silica (< 5 .mu.m) analyses performed by X-ray diffraction using .alpha.-quartz standards whose particle size distribution does not match the field sample distribution exhibit errors up to 300% of the amount of .alpha.-quartz present. Sample concentration in the personal

samplers is shown to be an effective means of increasing sensitivity and establishing a nondestructive analysis, but particle size determination of field samples is necessary to aid selection of an appropriately sized standard. Observed threshold sensitivity for .alpha.-quartz at the 95% confidence level (2.sigma. above background) is 11 .mu.g/cm2. [Recognition of the health hazard due to prolonged exposure to airborne respirable silica has prompted the development of many analytical methods for silica based on various techniques.]

Descriptors: AIRBORNE PARTICLE EXPOSURE HEALTH HAZARD

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); RADIATION BIOL-RADTN,ISOTOP TECH(+06504); ECOLOGY-BIOCLIMATOL-BIOMETEOROL(07504); BIOCHEM METH-MINERALS(+10059); MINERALS(-10069); BIOPHYS-GENERAL BIOPHYS TECH(+10504); RESPIRATORY SYST-GENL STUD,METHS(16001); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(22506); ENVIRON HEALTH-AIR,-WATR,SL POLLN(37015)

65036553

TRACE DETERMINATION OF VINYL CHLORIDE IN WATER BY DIRECT AQUEOUS INJECTION GAS CHROMATOGRAPHY MASS SPECTROMETRY

FUJII T

DIV. CHEM. PHYS., NATL. INST. ENVIRON. RES., YATABE,
 TSUKUBA, IKARABA 300-21, JPN.

ANAL CHEM 49 (13), 1977 1985-1987. Coden: ANCHA

Language: ENGLISH

Described is a rapid, precise and specific method for the analysis of vinyl chloride (VC) at the sub-ppb level in water samples. The method involves the use of mass fragmentography of the gap chromatography-mass spectrometry by simultaneously recording m/e [mass:charge ratio] 62 and 64 after direct aqueous injection of a large sample (1000 .mu.l) on the precolumn (diglycerol as a liquid phase) with no concentration or extraction required. Several tap waters in Tokyo [Japan] areas were tested, and VC was not found to be present.

Descriptors: TOKYO JAPAN

Concept Codes: ECOLOGY-OCEANOGRAPHY,LIMNOLOGY(+07510); ECOLOGY-WATR RESRCH,FISHERY BIOL(07517); BIOCHEM METH-GENERAL(+10050); BIOCHEM STUD-GENERAL(10060); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); ENVIRON HEALTH-AIR,WATR,SL POLLN(+37015)

65035678

ADSORPTION OF MICROORGANISMS ON POLY VINYL CHLORIDE PLASTIC MATERIALS

GORCHAK G I

A.N. MARZEEV KIEV RES. INST. GEN. COMMUNAL HYG., KIEV, USSR.

GIG SANIT (5). 1977 110-111. Coden: GISAA

Language: RUSSIAN

A series of tests of the adsorption of *Bacillus anthracis* on polyvinylchloride (PVC) plates indicated that the interaction of the microorganisms and polymers is varied and determined by the surface properties of the material and the bacterial membranes. Bacilli adsorption on polymer materials is fairly strong, but may be reversed by the action of enzymes such as hyaluronidase, resulting in spontaneous desorption. Interruption of the molecular surface link between the bacterial membranes and the material, destructive processes in the polymer and chemical and structural changes in the bacterial cells.

Descriptors: BACILLUS-ANTHRACIS HYALURONIDASE

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACID(10064); BIOPHYS-GENERAL STUDIES(+10502); BIOPHYS-MOLECUL PROP,MACROMOLEC(+10506); BIOPHYS-MEMBRANE PHENOMENA(+10508); ENZYMES-METHODS(10804); BACTERIA-MORPHOLOGY,CYTOLOGY(+30500); BACTERIA-PHYSIOLOGY,BIOCHEMISTRY(+31000); MICROBIOLOG APPARAT-METHS.MEDIA(32000); FOOD/INDUS MICRO-BIODEGRAD,ETER(+39006)

Biosystematic Codes: EUBACTERIALES(07200)

APPARATUS(01010); ECOLOGY-ANIMAL(+07508); ECOLOGY-LIMNOLOGY(0-7514); ECOLOGY-WATR RESRCH,FISHERY BIOL(07517); ECOLOGY-TERRESTRIAL WILDLIFE MGMT(+07518); BIOCHEM STUD-GENERAL(10060); CHORDATE BODY REGNS-EXTREMITIES(11318); REPRODUCT SYST-GENL STUDS,METHS(+16501); CHORDATE TAXONOMY-AVES(+62518)

Biosystematic Codes: ANSERIFORMES(85504)

65032801

COLOR MARKING OF GOOSANDERS MERGUS-MERGANSE AT THE DANISH BREEDING GROUNDS

HANSEN S G

ZOOL. MUS., UNIVERSITETSPARKEN 15, 2100 KOBENHAVN, DEN.

DAN ORNITHOL FOREN TIDSSKR 71 (1-2). 1977 65-69. Coden:

DOFTA

Language: DANISH

Marking of 3 breeding female goosanders by placing color rings on the legs was made for the 1st time in Denmark in the summer of 1976. Previously used marking methods are discussed. By marking the birds with colored leg rings made of colored slips of semi-rigid Darvic plastic it was possible to recognize the ring in daylight and identify the perching bird at a distance up to 400 m using a telescope (25.times.). The minimum distance one is able to approach the bird at Danish breeding grounds is 300-400 m. The colors used were yellow, blue, light green and red. The 1st 3 are more appropriate since red is difficult to recognize on the bird's red leg. The rings did not bother the bird. After ringing the females returned to the nest and completed breeding. The method may be applicable only in areas with a low population density, because the number of combinations of color and right/left leg is limited. Where the population density is higher, wing tags have been used.

Descriptors: DARVIC PLASTIC POLY VINYL CHLORIDE WING LEG RINGS TELESCOPE

Concept Codes: GENERAL FIELD METHODS(+01000); GENERAL FIELD

65030684

CHEMICAL MODIFICATION OF ACUTE HEPATO TOXICITY OF VINYL CHLORIDE MONOMER IN RATS

JAEGER R J; MURPHY S D; REYNOLDS E S; SZABO S; MOSLEN M T
TOXICOL. UNIT, DEP. PHYSIOL., KRESGE CENT. ENVIRON. HEALTH
HARV. SCH. PUBLIC HEALTH, BOSTON, MASS. 02115, USA.

TOXICOL APPL PHARMACOL 41 (3). 1977 597-608. Coden:
TXAPA

Language: ENGLISH

Six hour inhalation exposure of male rats to vinyl chloride monomer (VCM) was hepatotoxic as measured by elevated serum alanine-.alpha.-ketoglutarate transaminase (AKT) when the rats were pretreated with either sodium phenobarbital (0.1% in the drinking water, 7 days) or Aroclor 1254 (pretreatment doses given by gavage; 100, 200 or 300 .mu.mol/kg per day for 3 days). Following Aroclor 1254 pretreatment and VCM exposure, serum AKT elevation was proportional to Aroclor 1254 dose as well as VCM concentration (range 12,500-50,000 ppm). In phenobarbital-pretreated rats, fasting, but not diethyl maleate, significantly potentiated VCM injury; SKF-525A [2-diethylaminoethyl-2,2-diphenylvalerate hydrochloride] (75 mg/kg, i.p.) given 30 min prior to exposure prevented liver injury produced by VCM. Both Aroclor 1254 and phenobarbital pretreatment increased in vitro liver hexobarbital oxidase activity in unexposed animals. Exposure to VCM caused hexobarbital oxidase activity to decrease in livers from both nonpretreated and pretreated rats. The decreases in activity did not correlate with injury as measured by serum AKT. Ethyl alcohol (3.33 ml/kg) given by gavage 30 min prior to VCM exposure in phenobarbital-pretreated rats was associated with a nonsignificant serum AKT increase when compared to controls not given ethanol. A larger dose of ethanol (5 ml/kg, orally) given to Aroclor 1254-pretreated rats prior to VCM did not increase the serum AKT elevation compared to controls. Four doses of ethanol (5 ml/kg, orally) given to phenobarbital-pretreated rats at 48, 42, 24 and 16 h before VCM exposure did not potentiate the increase in serum AKT caused by VCM. Disulfiram (200 mg/kg, i.p., or 1000 mg/kg, orally) given prior to VCM exposure in Aroclor-pretreated rats produced a significant potentiation of VCM toxicity. The data suggest that VCM is activated to a toxic intermediate and this activation is inducible and, while ethyl alcohol per se does not appear to play a primary or modifying role in acute VCM hepatotoxicity, inhibitors of ethanol metabolism modify the toxicity of VCM.

Descriptors: SERUM ALANINE ALPHA KETO GLUTARATE TRANS AMINASE AROCLOR 1254 SODIUM PHENO BARBITAL SKF-525-A DISULFIRAM METAB-DRUGS

Concept Codes: CLIN BIOCHEM-GENL STUDIES(10006); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACID, PURNS, PYRM(10062); BIOCHEM STUD-PROTEINS, PEPTIDES, AMINO ACID(10064); ENZYMES-PHYSIOLOGICAL STUDIES(+10808); CHORDATE BODY REGNS-ABDOMEN(11314); METABOLISM-GENL STUD, METAB PATHW(+13002); DIGESTIVE SYST-GENL STUDS, METHS(14001); DIGESTIVE SYST-PHYSIOL, BIOCHEM(+14004); BLOOD/BODY FLDS-BLOOD, LYMPH STUD(15002); DENTAL/ORAL BIOL-GENL STUD, METHS(19001); PHARMACOL-DRUG METAB, METAB STIMU(22003); ROUTES OF IMMUNIZ, INFECT, THERAP(22100); TOXICOL-GENL/EXP STUDS, METHS(+22501); TOXICOL-ANTIDOTES, PREVENTIVE(22505); IISS

CULTURE-APPARAT, METHS, MEDIA(32500); IN VITRO STUDS-CELLULR, SU-BCELL(32600)

Biosystematic Codes: MURIDAE(86375)

65030645

SCINTIGRAPHY OF LIVER AND SPLEEN IN VINYL CHLORIDE WORKERS
BIERSACK H J; LUIS T S JR; LANGE C E; THELEN M; VELTMAN G;
WINKLER C

INST. KLIN. EXP. NUKLEARMED., UNIVERSITAETSKLIN., 5300
BONN-VENUSBERG, W. GER.

ACTA HEPATO-GASTROENTEROL 24 (5). 1977 357-361. Coden:
AHGSB

Language: ENGLISH

Liver fibrosis and angiosarcoma of the liver were established as occupation diseases in workers of PVC [polyvinylchloride] producing and processing plants. For this reason careful medical supervision of this group of workers is necessary. The fact that usual laboratory tests of liver function are not suitable for an early detection of VC-induced lesions, a sensitive screening test method seemed highly desirable. Because fibrosis and angiosarcoma of the liver originate from the RES, respective changes could possibly be detected in an early stage with the help of radioactive colloids. In 152 VC-exposed workers of whom 124 were employed in the PVC-production and 28 in VC-processing plants, liver and spleen imaging was performed using ^{99m}Tc -sulfur colloid and ^{197}Hg -BMHP. In 101 (= 81%) of the 124 workers of the PVC-production plant and in 18 (= 64%) workers of PVC-processing factories, pathological liver and spleen scintigrams were found. The most frequent pathological change in the scintigraphic image was an increase in splenic colloid accumulation, when compared with the liver uptake. Three angiosarcomas of the liver were detected through circumscribed defects of colloid accumulation. Sequential liver scintigraphy was done in 15 cases. In 7 patients with esophageal varices, considerable decrease in portal venous blood flow was demonstrated. Scintigraphically detectable changes are sensitive indicators of VC-induced lesions of the liver including liver fibrosis, portal hypertension and angiosarcoma.

Descriptors: FIBROSIS ANGIO SARCOMA PORTAL HYPERTENSION

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); PATHOLOGY-DIAGNOSTIC(12504); PATHOLOGY-INFLAMMATN,INFLAM DIS(-12508); DIGESTIVE SYST-GENL STUOS,METHS(14001); DIGESTIVE SYST-PATHOLOGY(+14006); CARDIOVASC SYST-BLD VESS PATHOL(14508); BLOOD/BODY FLDS-GENL STUOS,METHS(15001); BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006); BLOOD/BODY FLDS-LYMPHAT TISS,RES(+15008); BONE,JNTS,FASC,CONN/ADIP-PATHOL(18006); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-PATH,C-LINIC(24004); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR,W-ATR,SL POLLN(+37015)

Biosystematic Codes: HOMINIDAE(86215)

J FOOD SCI 42 (6). 1977 1517-1521. Coden: JFDSA

Language: ENGLISH

Wholesale legs and loins were vacuum packaged, chilled with CO₂ pellets, or wrapped with polyvinyl chloride (PVC) film and transported-stored (0.degree. C) for 7 or 14 days; intact carcasses were unprotected or wrapped in PVC film and transported-stored for 7 or 14 days. Product was evaluated following transport-storage, during retail display and as cooked cuts. Vacuum packaged loins sustained less (P < 0.05) surface discoloration and had higher scores for muscle color and overall appearance than did loins chilled with CO₂ or loins wrapped in PVC film. Vacuum packaged legs had higher (P < 0.05) scores for appearance of subcutaneous fat and overall appearance than did legs chilled with CO₂ or legs wrapped in PVC film. Carcasses wrapped in PVC film had higher (P < 0.05) scores for appearance of subcutaneous fat and sustained less (P < 0.05) shrinkage during storage than did unprotected carcasses. Unprotected carcasses had a lower incidence of off-odor. Carcasses or primal cuts which were transported-stored and placed in the retail case within 7 days were effectively protected from shrinkage and deterioration by wrapping with PVC film. Vacuum packaging was the only suitable means for protecting lamb primal cuts during transport-storage intervals of 14 days.

Descriptors: LEG LOIN VACUUM CARBON DI OXIDE CHILLING POLY VINYL CHLORIDE FILM MUSCLE COLOR SHRINKAGE DETERIORATION

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(10060); EXTERN EFF-TEMPERATURE(10614); EXTERN EFF-COLD(10616); CHORDATE BODY REGNS-LUMBAR(11311); CHORDATE BODY REGNS-EXTREMITIES(11318); FOOD TECH-MEAT,MEAT BY-PRODUCTS(+13516); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); FOOD TECH-PREP,PROCESSNG,STORAGE(+13532); MUSCLE SYST-PHYSIOL,BIOCHEM(+17504); BONE,JNTS,FASC,CONN/ADIP-GENL(18001); TEMPERATURE-GENL,METHS(23001); TEMPERATURE-CRYOBIOLOGY(23004)

Biosystematic Codes: BOVIDAE(85715)

65026678

PACKAGING SYSTEMS FOR TRANSPORT AND STORAGE OF LAMB

TATUM J D; SMITH G C; CARPENTER Z L
MEATS AND MEAT CHEM. SECT., DEP. ANIM. SCI., TEX. AGRIC.
EXP. STN., TEX. A & M UNIV., COLLEGE STATION, TEX. 77843, USA.

65026607

MICROBIAL CORROSION OF PLASTICIZED POLY VINYL CHLORIDE USED FOR METAL PROTECTION

ONIN M A; MANDZHIGALADZE S N; DASHNIANI T S; KEMKHADZE V S
 INST. METALL., ACAD. SCI. GEORGIAN SSR, TBILISI, USSR.
 SOOBShCH AKAD NAUK GRUZ SSR 86 (3). 1977 665-668.

Codon: SAKNA

Language: RUSSIAN

The influence of several fungicides on the resistance of plasticized polyvinylchloride to microbial [fungal] corrosion is considered. The proposed combination of salicyl anilide and sodium tetraborate was effective, evidently due to the phenomenon of synergism. In contrast to widely applied toxic Sn-organic compounds and those of As and of Hg.

Descriptors: FUNGI ARSENIC MERCURY TIN ORGANIC COMPOUNDS
 SALICYL ANILIDE SODIUM TETRA BORATE FUNGICIDES

Concept Codes: BIOCHEM STUD-GENERAL(10060); MINERALS(10069);
 METABOLISM-GENL STUD,METAB PATHW(13002); MINERALS(13010);
 PHARMACOL-DRUG METAB,METAB STIMU(22003); MICROBIOLOG
 APPARAT,METHS,MEDIA(32000); FOOD/INDUS MICRO-BIODEGRAD,DETER(-
 +39006); PLANT PHYSIOL-GROWTH SUBSTANCES(+51514); PLANT
 PHYSIOL-METABOLISM(51519); PEST CONTRL GENL/PESTICS/HERBICS(+
 54600)

Biosystematic Codes: FUNGI-UNSPECIFIED(15000); ABSTRACTS OF
 MYCOLOGY(95000)

65025148

AUTOMATED ANALYZER FOR THE DETERMINATION OF POTASSIUM AND SODIUM IN WHOLE BLOOD

DURST R A

ANAL. CHEM. DIV., NATL. BUR. STAND., WASHINGTON, D.C. 20234,
 USA.

CLIN CHIM ACTA 80 (1). 1977 225-234. Codon: CCATA

Language: ENGLISH

An automated analyzer for the measurement of K and Na in whole blood was developed and evaluated. The sensors used in this instrument are the Na glass and K (valinomycin in polyvinyl chloride) membrane electrodes. The features of this system include automatic 2 point calibration at fixed intervals or on command, automatic rinsing between measurements, digital display and printout of the emf [electromotive force] data, and a sample volume requirement of 0.5 ml. In addition to the evaluation of the response of the system to aqueous and whole blood samples, a study was made of the correlation of data obtained on plasma samples with a flame photometer and the electrometric K/Na analyzer. For both electrodes the correlation was very good ($r = 0.998$ for K and $r = 0.991$ for Na). No anomalous effects were observed with blood samples from normal volunteers, however, no studies were performed with samples taken from patients which might show disease-induced changes in ion-binding properties or interferences from medications. From this study, it appears that the Na and K electrodes are able to meet sensory requirements for a clinical blood-electrolyte instrument. Since an analyzer based on ion-selective electrode technology can determine Na and K in whole blood, such an automatic

instrument could be used outside of the central clinical laboratory for stat analyses. While the feasibility of this type of instrument has been demonstrated, much more work is required to establish its performance characteristics for clinical analysis.

Descriptors: HUMAN VALINOMYCIN POLY VINYL CHLORIDE MEMBRANE
 ELECTRODE SODIUM GLASS

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); CLIN
 BIOCHEM-GENL STUDIES(+10006); BIOCHEM METH-MINERALS(+10059);
 BIOCHEM STUD-PROTEINS,PEPTIDES,AMINO ACD(10064); BIOPHYS-GENE-
 RAL BIOPHYS TECH(+10504); BIOPHYS-BIOENGINEERING(+10511);
 BLOOD/BODY FLDS-BLOOD,LYMPH STUD(+15002); PHARMACOL-GENERAL
 STUDIES(22002); CHEMOTHERAPY-GEN STUD,METH,METAB(38502)

Biosystematic Codes: HOMINIDAE(86215)

65024003

ANGIO SARCOMA OF THE LIVER AN EPIDEMIOLOGIC SURVEY

BRADY J; LIBERATORE F; HARPER P; GREENWALD P; BURNETT W;
 DAVIES J N P; BISHOP M; POLAN A; VIANNA N

BUR. OCCUP. HEALTH CHRON. DIS. RES., N.Y. STATE DEP. HEALTH,
 TOWER BUILD., EMPIRE STATE PL., ALBANY, N.Y. 12237, USA.

J NATL CANCER INST 59 (5). 1977 1383-1386. Codon: JNCIA

Language: ENGLISH

Diagnosed from 1970-1975, the annual incidence rate for angiosarcoma of the liver among residents of New York State [USA] (excluding New York City) was 0.25/million. A case-control study indicated that direct exposure to As vinyl chloride (VC) and thorium dioxide was a significantly important factor in the etiology of this disorder ($P < 0.02$). Direct exposure to these chemicals could not be demonstrated for 19 (73%) of the 26 study patients. The fact that 5 of these patients lived nearer to VC fabrication or polymerization plants than did their matched controls lent some support to the hypothesis that indirect modes of exposure, not specifically related to occupation, might be important in the etiology of this disorder.

Descriptors: NEW-YORK STATE USA HUMAN ARSENIC VINYL CHLORIDE
 THORIUM DIOXIDE INDIRECT EXPOSURE

Concept Codes: MATHEMATIC BIOL/STATISTIC METH(04500); SOCIAL
 BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060);
 MINERALS(10069); DIGESTIVE SYST-PATHOLOGY(+14006); TOXICOL-EN-
 VIRONMNTL,INDUSTR(+22506); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+
 24007); PUB HEALTH-ADMINISTR,STATISTICS(+37010); ENVIRON
 HEALTH-OCCUPATNL HEALTH(37013); ENVIRON HEALTH-AIR,WATR,SL
 POLLNT(37015); EPIDEMIOLOG-ORGANIC DIS,NEOPLASMS(+37054)

Biosystematic Codes: HOMINIDAE(86215)

65018115

MORTALITY AMONG EMPLOYEES OF POLY VINYL CHLORIDE FABRICATORS
CHIAZZE L JR; NICHOLS W E; WONG O
DIV. BIOSTATIST. EPIDEMIOLOG., DEP. COMMUNITY MED. INT.
HEALTH, GEORGETOWN UNIV. SCH. MED., WASHINGTON, D.C. 20007,
USA.

J OCCUP MED 19 (9). 1977 623-628. Coden: JOCMA
Language: ENGLISH

A cross-sectional mortality study of 4341 deaths occurring among current and former employees of 17 PVC [polyvinyl chloride] fabricators during 1964-1973 is presented. The objectives were to identify any angiosarcoma deaths among the employees of these fabricators and to examine distribution of deaths by cause. No angiosarcoma deaths were found among the study group. Sex-race-cause-specific Proportionate Mortality Ratios (PMR) were computed, using the corresponding USA mortality as the standard. Among white employees, there appeared to be an excess in total cancer mortality, particularly that of the digestive system. Observed deaths apparently exceeded those expected in cancers of the breast and urinary organs among white females. Deficit mortality was observed in cirrhosis of liver among male and female white employees.

Descriptors: DIGESTIVE BREAST URINARY ORGANS ANGIO SARCOMA
RACE SEX DIFFERENCES

Concept Codes: GENETICS/CYTOGENET-SEX DIFFERENC(03510);
PHYSICAL ANTHROPOLOGY/ETHNOBIOLOG(05000); SOCIAL BIOL/HUMAN
ECOLOG(05500); PATHOLOGY-DIAGNOSTIC(+12504); PATHOLOGY-NECRO-
SIS(12510); DIGESTIVE SYST-PATHOLOGY(14006); CARDIOVASC
SYST-HEART PATHOLOGY(14506); URIN SYST/EXT SECR-PATHOLOGY(155-
06); REPRODUCT SYST-PATHOLOGY(16506); BONE, JNTS, FASC, CONN/ADI-
P-PATHOL(18006); TOXICOL-ENVIRONMNTL, INDUSTR(+22506); NEOPLSM-
S/NEOPL AGNTS-PATH, CLINIC(+24004); NEOPLSMS/NEOPL AGNTS-CARCI-
NOGENS(+24007); PUB HEALTH-ADMINISTR, STATISTICS(+37010);
ENVIRON HEALTH-OCCUPATNL HEALTH(+37013); ENVIRON HEALTH-AIR, W-
ATR, SL POLLN(+37015)

65016498

CONTROLLED RELEASE PESTICIDES PART 4 SYNTHESIS AND
DECOMPOSITION OF POLY-S VINYLALKYL DI THIO CARBAMATE

NARUSE H; MAEKAWA K
LAB. PESTIC. CHEM., FAC. AGRIC., KYUSHU UNIV. 46-02, FUKUOKA
812, JPN.

J FAC AGRIC KYUSHU UNIV 21 (4). 1977 173-180. Coden:
JFAKA

Language: ENGLISH

Poly(S-vinyl-alkyldithiocarbamate)s were prepared from poly(vinyl chloride) and sodium alkyldithiocarbamates in dimethylformamide. These derivatives were decomposed by exposure to light or by acid or base treatment to give S, S-containing compounds and others. The polymers showed herbicidal and fungicidal activities.

Descriptors: HERBICIDE FUNGICIDE

Concept Codes: BIOCHEM METH-GENERAL(+10050); BIOCHEM
STUD-GENERAL(+10060); BIOPHYS-MOLECUL PROP, MACROMOLEC(+10506);
TOXICOL-GENL/EXP STUDS, METHS(22501); AGRONOMY-WEEDS AND WEED

CONTROL(+52518); PHYTOPATHOL-DISEASE CONTROL(+54516); PEST
CONTRL GENL/PESTICS/HERBICS(+54600)

Biosystematic Codes: ABSTRACTS OF MYCOLOGY(95000)

65016497

CONTROLLED RELEASE PESTICIDES PART 3 HERBICIDAL SYNTHETIC
POLYMER

NARUSE H; MAEKAWA K

LAB. PESTIC. CHEM., FAC. AGRIC., KYUSHU UNIV., 46-02 FUKUOKA
812, JPN.

J FAC AGRIC KYUSHU UNIV 21 (4). 1977 167-172. Coden:
JFAKA

Language: ENGLISH

Copoly(S-vinylisothiourea-vinylene-vinyl thiocyanate) was prepared from poly(vinyl chloride) with thiourea as an attempt to develop controlled-release herbicides. The copolymer was decomposed in an aqueous alkaline solution to give thiocyanate and other compounds. The copolymer was also decomposed by acid releasing low molecular compounds. The copolymer was not effective for germination but inhibited the growth of seedlings of barnyard grass [Panicum crus-galli L.] on the treated soil for 28 days. The copolymer treated with acid or base was more effective on the germination and the growth of the plant.

Descriptors: PANICUM-CRUS-GALLI BARNYARD GRASS CO POLY-S
VINYL ISO THIO UREA VINYLENE VINYL THIO CYANATE

Concept Codes: BIOCHEM METH-GENERAL(+10050); BIOCHEM
STUD-GENERAL(+10060); BIOPHYS-MOLECUL PROP, MACROMOLEC(+10506);
TOXICOL-GENL/EXP STUDS, METHS(22501); AGRONOMY-WEEDS AND WEED
CONTROL(+52518); SOIL SCI-GENL STUDS, METHS(52801); PEST CONTRL
GENL/PESTICS/HERBICS(+54600)

Biosystematic Codes: GRAMINEAE(25305)

65012207

PRESENT DAY SITUATION OF THE MIGRATION OF COMPONENTS OF PACKAGING MATERIALS INTO FOODS AND THE CONTROL OF THIS PROBLEM BY ANALYTICAL MEASURES

ROBINSON L

INST. LEBENSMITTELTECHNOL. VERPACK., TECH. UNIV. MUENCH., MUENCHEN, W. GER.

LEBENSM-WISS TECHNOL 10 (1). 1977 51-56. Coden: LBWTA

Language: GERMAN

Protection of the public against packaging components that may migrate into packaged foodstuffs depends on analytical controls which present difficulties that have not been completely solved. An American standard, ADI (acceptable daily intake) or PADI (packaging ADI) with an immutable global migration limit of 60 ppm is not considered sufficiently flexible as there could be higher limits for inoffensive migration products, while for highly toxic chemicals the limit should be lower. Also the available methods, such as gas chromatography, are costly. Chemicals that might migrate from packaging materials could include vinyl chloride or acetonitrile, polystyrol and ABS polymers. Absorption of such contaminants is especially likely to occur in fatty foods, and suggestions are given for testing packaging materials with substitute fats such as coconut, sunflower or olive oil, or a synthetic fat HB 307, which contains triglycerides of fatty acids with medium chain length.

Descriptors: COCONUT SUNFLOWER OLIVE OIL SYNTHETIC FAT HB-307 VINYL CHLORIDE ACETONITRILE POLY STYROL ABS POLYMERS

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-LIPIDS(10066); BIOPHYS-GENERAL BIOPHYS TECH(10504); MOVEMENT(12100); FOOD TECH-FATS,OILS(+13514); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); FOOD TECH-SYNTH,SUPPL,ENRICH FDS(+13534); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); PLANT PHYSIOL-CHEM CONSTITUENTS(51522); AGRONOMY-OIL CROPS(52514); HORTICULT-TROP FRUIT,NUT,PLANTAT(53004)

Biosystematic Codes: PALMAE(25380); COMPOSITAE(25840); OLEACEAE(26475)

65012206

THE CONTENT OF VINYL CHLORIDE MONOMER IN FOODS PACKED IN POLY VINYL CHLORIDE

EHTESHAM-UD DIN A F M; NOROBO E; UNDERDAL B

DEP. FOOD HYG., VET. COLL. NORW., OSLO, NORW.

LEBENSM-WISS TECHNOL 10 (1). 1977 33-35. Coden: LBWTA

Language: ENGLISH

The content of vinylchloride monomer (VCM) in different foods on the Norwegian market was investigated. Samples of butter, margarine, vinegar, [fruit] juices, salad and mustard were analyzed using the head space gas chromatographic technique. The VCM content varied considerably and was highest in imported vinegar. In all samples of Norwegian origin, the VCM concentrations were well below the Swedish recommended maximum tolerance of 0.05 mg/kg. It was shown, in a model experiment, that the migration of VCM into the sample increased with increasing acid concentration in the sample.

Descriptors: NORWAY BUTTER MARGARINE VINEGAR FRUIT JUICES

SALAD MUSTARD

Concept Codes: BIOCHEM STUD-GENERAL(10060); FOOD TECH-GENL STUDS,METHS(+13502); FOOD TECH-FRUITS,NUTS,VEGETABLES(+13504); FOOD TECH-MALTS,BREWS,FERMENTAIN(+13512); FOOD TECH-DAIRY PRODUCTS(+13518); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); TOXICOL-FOOD,RESIDS,ADDIT,PRESRV(+22502); HORTICULT-VEGETABLES(53008)

Biosystematic Codes: ANGIOSPERMAE-UNSPECIFIED(25200); CRUCIFERAE(25880)

65007129

A NEW ANTI THROMBOGENIC HEPARINIZED POLYMER

MIYAMA H; HARUMIYA N; MORI Y; TANZAWA H

BASIC RES. LAB., TORAY IND. INC., 1111 TEBIRO, KAMAKURA, JPN.

J BIOMED MATER RES 11 (2). 1977 251-265. Coden: JBMRB

Language: ENGLISH

A new antithrombogenic polymer was synthesized by photoinduced graft copolymerization of both a hydrophilic polymer and a cationic polymer to hydrophobic poly(vinyl chloride) copolymer, and by quaternizing and heparinizing the obtained graft copolymer. For polymers of various compositions obtained by the method described above, chemical composition, water absorption, membrane potential and quantity of adsorbed heparin were determined and antithrombogenicity evaluated in vivo [in dogs]. The polymer of excellent antithrombogenicity had a negative membrane potential, a moderate elution rate of heparin, adsorbs heparin in a quantity of approximately 15 wt-%, and has a degree of water adsorption of about 30 wt-%. Measurement of membrane potential was very useful for the estimation of the quantity of the adsorbed heparin and its change with time.

Descriptors: HEMATOL-DRUG CHEMICAL COMPOSITION WATER ABSORPTION MEMBRANE POTENTIAL GRAFT

Concept Codes: BIOCHEM-PHYSIOLOGI WATER STUD(10011); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-CARBOHYDR.(10068); BIOPHYS--MEMBRANE PHENOMENA(10508); BIOPHYS-BIOENGINEERING(+10511); ANATOMY/HISTOL-REGEN,TRANSPLANT(+11107); CARDIOVASC SYST-GENL STUDS,METHS(+14501); CARDIOVASC SYST-BLD VESS PATHOL(+14508); BLOOD/BODY FLDS-GENL STUDS,METHS(+15001); PHARMACOL-BLOOD,HEM-ATO AGENTS(+22008)

65005896

INCUBATION OF CARBON-14 TRI CHLORO ETHYLENE VAPOR WITH RAT LIVER MICROSOMES UPTAKE OF RADIOACTIVITY AND COVALENT PROTEIN BINDING OF METABOLITES

BOLT H M; BUCHTER A; WOLOWSKI L; GIL D L; BOLT W
INST. TOXIKOL., UNIV., WILHELMSTR. 56, D-7400 TUEBINGEN, W. GER.

INT ARCH OCCUP ENVIRON HEALTH 39 (2). 1977 103-112.
Codon: IAOHD

Language: ENGLISH

Microsomal uptake irreversible protein binding of labeled trichloroethylene was measured following incubation with rat liver microsomes in an all-glass vacuum system. If the cofactor for oxidative metabolism, NADPH, is not added, the gaseous trichloroethylene rapidly equilibrates with the microsomal suspension. Addition of NADPH results in a further uptake of ¹⁴C-trichloroethylene from the gas phase, linearly with time, which is due to enzymic metabolism. This part of uptake is inhibited by some arylimidazoles and 1,2,3-benzothiadiazoles. The compounds of greatest inhibitory potency were 6-chloro-1,2,3-benzothiadiazole and 5,6-dimethyl-1,2,3-benzothiadiazole. Part of the metabolites of ¹⁴C-trichloroethylene formed by rat liver microsomes were irreversibly bound to microsomal protein, amounting up to 1 nmol/mg microsomal protein per hour. Model experiments on uptake of ¹⁴C-trichloroethylene from the gas phase by albumin solutions and liposomal suspensions (from lecithin) showed a rapid equilibration of trichloroethylene also with these systems. Comparison with previous analogous data on vinyl chloride revealed an about 10 times higher affinity of trichloroethylene to albumin and lipid, consistent with the behavior of both compounds in the rat liver microsomal system.

Descriptors: COFACTOR EFFECT LIPOSOMAL SUSPENSION UPTAKE

Concept Codes: CYTOLOGY/CYTOCHEM-ANIMAL(+02506); RADIATION BIOL-RADTN,ISOTOP TECH(06504); BIOCHEM STUD-GENERAL(10060); BIOCHEM STUD-NUCL ACD,PURNS,PYRM(10062); BIOCHEM STUD-PROTEIN-S,PEPTIDES,AMINO ACD(10064); BIOCHEM STUD-LIPIDS(10066); BIOPHYS-MEMBRANE PHENOMENA(10508); BIOPHYS-BIOENERGETICS(10510); ENZYMES-GEN,COMPAR STUD,COENZYMES(10802); ENZYMES-PHYSIOLOGICAL STUDIES(10808); METABOLISM-GENL STUD,METAB PATHW(+13002); METABOLISM-ENERGY,RESPIRATION(13003); DIGESTIVE SYST-PHYSIO-L,BIOCHEM(+14004); TOXICOL-GENL/EXP STUDS,METHS(+22501); IN VITRO STUDS-CELLULR,SUBCELL(32600)

Biosystematic Codes: MURIDAE(86375)

65003245

DELAYED FOREIGN BODY TUMORIGENESIS IN MICE INFECTED WITH LACTATE DEHYDROGENASE ELEVATING VIRUS

BRINTON-DARNELL M; BRAND I
WISLAR INST., 36TH AND SPRUCE ST., PHILADELPHIA, PA. 19104, USA.

J NATL CANCER INST 59 (3). 1977 1027-1030. Codon: JNCIA
Language: ENGLISH

Female and male CBA/H mice were infected with lactate dehydrogenase virus (LDV). Two weeks later, these mice and noninfected controls received double s.c. implants of

unplasticized vinyl chloride-vinyl acetate copolymer films (0.2 .times. 15 .times. 22 mm). Foreign body (FB) tumorigenesis was delayed in LDV infected females and males by 2 mo. This result could not be explained by an effect of LDV on cellular immunity, inasmuch as cellular immunity does not influence the course of FB tumorigenesis.

Descriptors: TOGAVIRUS UNPLASTICIZED VINYL CHLORIDE VINYL ACETATE CO POLYMER FILM CARCINOGEN SUB CUTANEOUS TUMOR

Concept Codes: BIOCHEM STUD-GENERAL(10060); BIOPHYS-MOLECUL PROP,MACROMOLEC(10506); ANATOMY/HISTOL-REGEN,TRANSPLANT(11107); PATHOLOGY-THERAPY(12512); BONE,JNTS,FASC,CONN/ADIP-PATHOL(+18006); INTEGUMENT SYST-GENL STUDS,METHS(18501); ROUTES OF IMMUNIZ,INFECT,THERAP(22100); TOXICOL-GENL/EXP STUDS,METHS(+22501); NEOPLSMS/NEOPL AGNTS-IMMUNOLOGY(24003); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); NEOPLSMS/NEOPL AGNTS-THERAP,AGNT(+24008); VIROLOGY-ANIMAL HOST VIRUSES(33506); IMMUNOL/IMMUNOCH-EM-BACT,VIR,FUNG(34504); IMMUNOL/IMMUNOCH-EM-IMMUNOPATHOL(34508); MED/CLIN MICROBIOL-VI-ROLOGY(+36006)

Biosystematic Codes: ANIMAL VIRUSES(03200); MURIDAE(86375)

65001694

SYSTEMS FOR PROLONGED STORAGE OF BEEF QUARTERS

SMITH G C; SIMMONS R D; CARPENTER Z L
 MEATS AND MEAT CHEM. SECT., DEP. ANIM. SCI., TEX. AGRIC.
 EXP. STN., TEX. A & M UNIV., COLLEGE STATION, TEX. 77843, USA.
 J FOOD PROT 40 (8). 1977 527-532. Coden: JFPRD
 Language: ENGLISH

Beef quarters were used in a study which had all combinations of the following treatments: 14 of 21 days storage, with or without PVC [polyvinyl chloride] film wrapping, with or without NaOCl spraying and with N2 atmosphere or ambient air environments. Best results for storing beef quarters for 14 days were obtained by using PVC film (with or without NaOCl spraying); best results for storing beef quarters for 21 days were obtained from PVC film wrapped (with or without NaOCl spraying) or unprotected quarters (with or without NaOCl spraying). Use of a N2 atmosphere did not consistently decrease bacterial counts and did not improve the physical appearance of quarters. Even the best system for protecting beef quarters during 21 days of storage did not result in beef that was desirable in appearance or condition at the conclusion of the storage trial.

Descriptors: BACTERIAL COUNT POLY VINYL CHLORIDE FILM WRAPPING SODIUM HYPO CHLORITE SPRAYING NITROGEN ATMOSPHERE PHYSICAL APPEARANCE

Concept Codes: BIOCHEM-GASES(10012); BIOCHEM STUD-GENERAL(1-0060); FOOD TECH-MEAT,MEAT BY-PRODUCTS(+13516); FOOD TECH-EVALNS PHYS,CHEM PROPS(+13530); FOOD TECH-PREP,PROCESSNG,STORAGE(+13532); MICROBIOLOG APPARAT,METHS,MEDIA(32000); MED/CLIN MICROBIOL-BACTERIOLOGY(36002); PUB HEALTH-INANIMATE DIS VECTORS(37060); PUB HEALTH MICROBIOL(37400); FOOD/INDUS MICRO-FD/BEV SP CNIAM(+39002); DISINFECTION,DISINFECTANTS,STERIL(39500)

Biosystematic Codes: BACTERIA-UNSPECIFIED(06000); BOVIDAE(8-5715)

15056491

VINYL CHLORIDE A CASE FOR THE USE OF LABORATORY BIOASSAY IN THE REGULATORY CONTROL PROCEDURE

WAGONER J K; INFANTE P F

HIATT, H. H., J. D. WATSON AND J. A. WINSTEN (ED.). COLD SPRING HARBOR CONFERENCES ON CELL PROLIFERATION, VOL. 4. ORIGINS OF HUMAN CANCER. BOOK A. INCIDENCE OF CANCER IN HUMANS. COLD SPRING HARBOR, N.Y., USA, SEPT., 1976. XXVI+602P. (BOOK A); XIV+699P. (BOOK B); XIV+583P. (BOOK C). ILLUS. MAPS. COLD SPRING HARBOR LABORATORY: COLD SPRING HARBOR, N.Y., ISBN 0-87969-119-0. 1977 1797-1805 Coden: O6398

Descriptors: HUMAN CHINESE HAMSTER CARCINOGEN OCCUPATIONAL EXPOSURE BRAIN RESPIRATORY LIVER BILIARY HEMATOPOIETIC CANCERS

Concept Codes: SOCIAL BIOL/HUMAN ECOLOGY(05500); BIOCHEM STUD-GENERAL(10060); DIGESTIVE SYST-PATHOLOGY(+14006); BLOOD/BODY FLDS-BLD,LYM,RES PATH(+15006); BLOOD/BODY FLDS-LYMPHAT TISS,RES(+15008); RESPIRATORY SYST-PATHOLOGY(+16-006); NERVOUS SYST-PATHOLOGY(+20506); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-ENVIRONMNTL,INDUSTR(+22506); NEO-

PLSMS/NEOPL AGNTS-CARCINOGENS(+24007); NEOPLSMS/NEOPL AGNTS-BLOOD,RES(+24010); PUB HEALTH-ADMINISTR,STATISTICS(37010); ENVIRON HEALTH-OCCUPATNL HEALTH(+37013)

Biosystematic Codes: HOMINIDAE(86215); CRICETIDAE(86310)

15056469

IDENTIFICATION OF CARCINOGENS BY MUTAGEN TESTING IN DROSOPHILA THE RELATIVE RELIABILITY FOR THE KINDS OF GENETIC DAMAGE MEASURED

VOGEL E

HIATT, H. H., J. D. WATSON AND J. A. WINSTEN (ED.). COLD SPRING HARBOR CONFERENCES ON CELL PROLIFERATION, VOL. 4. ORIGINS OF HUMAN CANCER. BOOK A. INCIDENCE OF CANCER IN HUMANS. COLD SPRING HARBOR, N.Y., USA, SEPT., 1976. XXVI+602P. (BOOK A); XIV+699P. (BOOK B); XIV+583P. (BOOK C). ILLUS. MAPS. COLD SPRING HARBOR LABORATORY: COLD SPRING HARBOR, N.Y., ISBN 0-87969-119-0. 1977 1483-1497 Coden: O6398

Descriptors: NATULAN DI ETHYL NITROSAMINE METHYL METHANESULFONATE AZOXY METHANE N NITROSO MORPHOLINE VINYL CHLORIDE CYCLO PHOSPHAMIDE TROFOSFAMIDE IFOSFAMIDE

Concept Codes: GENETICS/CYTOGENET-ANIMAL(+03506); BIOCHEM STUD-GENERAL(10060); PATHOLOGY-THERAPY(12512); PHARMACOL-GENERAL STUDIES(+22002); TOXICOL-GENL/EXP STUDS,METHS(+22501); TOXICOL-PHARMACOLOGICAL(+22504); NEOPLSMS/NEOPL AGNTS-CARCINOGENS(+24007); NEOPLSMS/NEOPL AGNTS-THERAP,AGNT(+24008); CHEMOTHERAPY-GEN STUD,METH,METAB(+38502); INVERTB PHYSIOL-INSECTA-PATHOL(+64078)

Biosystematic Codes: DIPTERA(75314)