

LITERATURE SEARCH

REQUESTOR: Ralph Albee

DATE: 10/23/89

SUBJECT:

Neurotoxicology of Vinyl Chloride

DATABASES SEARCHED:

BIOSIS (1969-present)

BIOSIS PREVIEWS contains citations from Biological Abstracts (BA), Biological Abstracts/Reports, Reviews, Meetings (BA/RRM), and Bioresearch Index (Biol), the major publications of BioSciences Information Service (BIOSIS). Biological Abstracts includes approximately 165,000 accounts of original research yearly from over 9,000 primary journal and monograph titles. Biological Abstracts/RRM includes an additional 125,000 citations a year from meetings, reviews, books, preliminary reports, notes, letters, selected institutional and government reports, and research communications

MEDLINE

MEDLINE, produced by the U. S. National Library of Medicine (NLM), is one of the major sources for biomedical literature materials. MEDLINE corresponds to the three printed indexes, Index Medicus, Index to Dental Literature, and International Nursing Index. Additional materials not published in Index Medicus are included in the MEDLINE database in the areas of communication disorders, and population and reproductive biology. The most current MEDLINE file includes 1.554 million references from 1983 - present as of January, 1988, and MEDLINE has backfiles to 1966 which all together contained over 5.459 million records as of January, 1988.

TOXLINE

TOXLINE with its associated pre-1981 publication year references (TOXLINE65) is the National Library of Medicine's extensive collection of computerized toxicology information. The database contains references to published human and animal toxicity studies, effects of environmental chemicals and pollutants, adverse drug reactions and analytical methodology. TOXLINE, including its back files, encompasses the years 1965-present.

TOXLINE is derived from the following sources:

- American Society of Hospital Pharmacists: International Pharmaceutical Abstracts (IPA)
- Aneuploidy (ANEUPL)
- BioSciences Information Service (BIOSIS formerly HEEP)
- Environmental Mutagen Information Center (EMIC)
- Environmental Protection Agency: Pesticide Abstracts (PESTAB)
- Environmental Protection Agency: TSCA test submissions (TSCATS)
- Environmental Teratogen Information Center (ETIC)
- Epidemiology Information System (EPIDEM)
- Hazardous Materials Technical Center (HMTc)
- International Labor Office (CIS)
- National Institute for Occupational and Environmental Health (NIOSH)
- National Library of Medicine Toxicity Bibliography (TOXBIB)
- National Technical Information Service (NTIS)
- Poisonous Plants Bibliography (PPBIB)
- Toxicology Research Projects (CRISP)

If you have any questions or if the result of this search does not entirely meet your needs, please call Linda Frauson, 6-9024

File 5:BIOSIS PREVIEWS 69-89/SEP BA8809:RRM3709
(C.BIOSIS 1989)

4/5/1

0019616550 BIOSIS Number: 37059591

LATE SEQUELAE OF OCCUPATIONAL VINYL CHLORIDE POISONING

ANTONYUZHENKO V A

INST. IND. HYG. OCCUP. DIS., GORKI, USSR.

GIG TR PROF ZABOL 0 (2). 1989. 39-41. CODEN: GTPZA

Language: RUSSIAN

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN NERVOUS SYSTEM PATHOLOGY DISTAL HYPALGESIA
ACROHYPERHYDROSIS ACROHYPOTHERMIA ACROSPASTIC REACTION OSTEOLYSIS
OSTEOSCLEROSIS OCCUPATIONAL HEALTH OCCUPATIONAL TOXICOLOGY

Concept Codes:

*18006 Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology

*20506 Nervous System-Pathology

*22506 Toxicology-Environmental and Industrial Toxicology

*23006 Temperature: Its Measurement, Effects and Regulation-Hypothermia,
Hyperthermia*23012 Temperature: Its Measurement, Effects and
Regulation-Thermoregulation

*37013 Public Health: Environmental Health-Occupational Health

10060 Biochemical Studies-General

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/2

0019587495 BIOSIS Number: 88043527

COHORT AND CASE-CONTROL ANALYSES OF WORKERS EXPOSED TO VINYL CHLORIDE AN
UPDATE

WU W; STEENLAND K; BROWN D; WELLS V; JONES J; SCHULTE P; HALPERIN W

NIOSH, INDUSTRYWIDE STUDIES BRANCH, ROBERT A. TAFT LAB., CINCINNATI, OHIO
45226-1998.

J OCCUP MED 31 (6). 1989. 518-523. CODEN: JOCMA

Language: ENGLISH

Subfile: BA (Biological Abstracts)

The mortality in a cohort of workers at a vinyl chloride polymerization plant has been updated, extending the period of observation in the original study from 1974 to 1986. Workers at this plant may have been exposed to vinyl chloride monomer and/or polyvinyl chloride dust, or may have had no exposure to either substance. Seventy-six percent of the work force worked in jobs with potential exposure to vinyl chloride monomer. Among the total cohort, statistically significant excess risks were observed for liver, lung, and brain cancer. For the subcohort of workers exposed to vinyl chloride monomer, the standardized mortality ratio (SMR) for liver cancer was 333 (90% confidence interval (CI) 202 to 521). However, there were no significant excesses of either brain (SMR = 145, 90% CI 78 to 249) or lung cancer (SMR = 115, 90% CI 96 to 141). The investigate dose response, nested case-control studies for liver, brain, and lung cancer were conducted among the total cohort (including the nonexposed). For these studies there were two exposure variables, cumulative dose of vinyl chloride monomer and cumulative dose of polyvinyl chloride dust. Cumulative dose was defined as the product of level and duration of exposure. The only significant association between disease risk and cumulative dose was for liver cancer

R&S 002090

and cumulative dose of vinyl chloride monomer. Further division of the liver cancers into angiosarcoma (n = 12) and other liver cancers (n = 7), based on review of death certificates and medical records, showed that the dose response existed only for angiosarcomas.

Descriptors/Keywords: HUMAN LIVER CANCER ANGIOSARCOMA CARCINOGEN
OCCUPATIONAL HEALTH AND SAFETY OCCUPATIONAL TOXICOLOGY

Concept Codes:

- *14006 Digestive System-Pathology
- *14508 Cardiovascular System-Blood Vessel Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24004 Neoplasms and Neoplastic Agents-Pathology; Clinical Aspects;
Systemic Effects
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37013 Public Health: Environmental Health-Occupational Health
- *37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
- 10060 Biochemical Studies-General

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/3

0017521687 BIOSIS Number: 84009754

AN EXPLORATORY CASE-CONTROL STUDY OF BRAIN TUMORS IN ADULTS

BURCH J D; CRAIB K J P; CHOI B C K; MILLER A B; RISCH H A; HOWE G R

NATIONAL CANCER INST. OF CANADA EPIDEMIOLOGY UNIT, FAC. MED., MCMURRICH
BUILDING, UNIV. TORONTO, 12 QUEEN'S PARK CRESENT WEST, TORONTO, ON, M5S
1A8, CANADA.

JNCI (J NATL CANCER INST) 78 (4). 1987. 601-610. CODEN: JJIND

Language: ENGLISH

Subfile: BA (Biological Abstracts)

An exploratory study of brain tumors in adults was carried out using 215 cases diagnosed in Southern Ontario between 1979 and 1982, with an individually matched, hospital control series. Significantly elevated risks were observed for reported use of spring water, drinking of wine, and consumption of pickled fish, together with a significant protective effect for the regular consumption of any of several types of fruit. While these factors are consistent with a role for N-nitroso compounds in the etiology of these tumors, for several other factors related to this hypothesis, no association was observed. Occupation in the rubber industry was associated with a significant relative risk of 9.0, though no other occupational associations were seen. Two previously unreported associations were with smoking nonfilter cigarettes with a significant trend and with the use of hair dyes or sprays. The data do not support an association between physical head trauma requiring medical attention and risk of brain tumors and indicate that exposure to ionizing radiation and vinyl chloride monomer does not contribute any appreciable fraction of attributable risk in the population studied. The findings warrant further detailed investigation in future epidemiologic studies.

Descriptors/Keywords: HUMAN SPRING WATER WINE PICKLED FISH FRUIT N NITROSO
COMPOUND RUBBER INDUSTRY WORKER NONFILTER CIGARETTES HAIR PRODUCTS

Concept Codes:

- *07004 Behavioral Biology-Human Behavior
- *13522 Food Technology-Fish and Other Marine and Freshwater Products
- *20506 Nervous System-Pathology
- *22501 Toxicology-General; Methods and Experimental
- *22506 Toxicology-Environmental and Industrial Toxicology

R&S 002091

*24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
*37010 Public Health-Public Health Administration and Statistics
*37013 Public Health: Environmental Health-Occupational Health
*37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
10060 Biochemical Studies-General

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/4

0016704047 BIOSIS Number: 31105355

BIOLOGICAL MONITORING OF CHLORINATED HYDROCARBON SOLVENTS

MONSTER A C

CORONEL LAB., FAC. MED., UNIV. AMSTERDAM, MEIBERGDRFEEF 15, 1105 AZ
AMSTERDAM, THE NETHERLANDS.CONFERENCE ON MEDICAL SCREENING AND BIOLOGICAL MONITORING FOR THE EFFECTS
OF EXPOSURE IN THE WORKPLACE, PART I, CINCINNATI, OHIO, USA, JULY 10-13,
1984. J OCCUP MED 28 (8). 1986. 583-588. CODEN: JOCMA

Language: ENGLISH

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN WORKERS MONOCHLOROMETHANE DICHLOROMETHANE
TRICHLOROMETHANE TETRACHLOROMETHANE 1 2 DICHLOROETHANE MONOCHLOROETHENE
TRICHLOROETHENE TETRACHLOROETHENE 1 1 1 TRICHLOROETHANE NEUROTOXICITY
HAZARDOUS MATERIALS HAZARDOUS OCCUPATION WORK ENVIRONMENT THRESHOLD LIMIT
VALUE

Concept Codes:

*10006 Clinical Biochemistry; General Methods and Applications
*22506 Toxicology-Environmental and Industrial Toxicology
*37013 Public Health: Environmental Health-Occupational Health
*37015 Public Health: Environmental Health-Air, Water and Soil Pollution
00520 General Biology-Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals
10050 Biochemical Methods-General
10060 Biochemical Studies-General
12502 Pathology, General and Miscellaneous-General

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/5

0016599729 BIOSIS Number: 82049429

ELECTROENCEPHALOGRAM CHANGES IN WORKERS EXPOSED TO LONG-TERM COMBINED
EFFECT OF A MIXTURE OF ORGANIC SOLVENTS AND VINYL CHLORIDE

DINCHEVA E; KOLEV P; D"LBOKOVA D

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

KHIG ZDRAVEOPAZ 29 (1). 1986. 8-15. CODEN: KHZDA

Language: BULGARIAN

Subfile: BA (Biological Abstracts)

EEG studies were carried out to workers, exposed to the long-term
combined effect of a mixture of organic solvents and vinylchloride. Changes
in EEG activity and visual provoked potentials (VPP) were established in
more than half of the subjects examined. The changes most often established
were as follows: dominant alpha rhythm in the front and its inhibition in
the occipital regions of cortex; increased theta activity; appearance of
episodes of hypersynchronous slow activity; occurring of spindles of high
voltage fast (beta) activity in the frontal leads; increase of the latent

R&S 002092

periods of the components of VPP. The changes described are discussed as early indices for neurotoxic effect of the workers exposed.

Descriptors/Keywords: NEUROTOXIC EFFECT

Concept Codes:

- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *37013 Public Health: Environmental Health-Occupational Health
- 12504 Pathology, General and Miscellaneous-Diagnostic
- 20001 Sense Organs, Associated Structures and Functions-General; Methods
- 20501 Nervous System-General; Methods

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/6

0016585946 BIOSIS Number: 31045678

EPIDEMIOLOGY OF BRAIN TUMORS IN MAN AND THEIR RELATIONSHIP WITH CHEMICAL AGENTS

JONES R D

HEALTH SAFETY EXECUTIVE, MAGDALEN HOUSE, STANLEY PRECINCT, BOOTLE L20 3QZ, MERSEYSIDE, ENGLAND.

INTERNATIONAL WORKSHOP ON THE INDUCTION OF MICROSCOPIC BRAIN TUMORS IN THE RAT: THE SIGNIFICANCE FOR MAN, SURREY, ENGLAND, JULY 19-20, 1984. FOOD CHEM TOXICOL 24 (2). 1986. 99-104. CODEN: FCTOD

Language: ENGLISH

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: VINYL CHLORIDE RUBBER ACRYLONITRILE PETROCHEMICALS OCCUPATIONAL EXPOSURE

Concept Codes:

- *20506 Nervous System-Pathology
- *22501 Toxicology-General; Methods and Experimental
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24004 Neoplasms and Neoplastic Agents-Pathology; Clinical Aspects; Systemic Effects
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37013 Public Health: Environmental Health-Occupational Health
- 00520 General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals
- 10060 Biochemical Studies-General

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/7

0016556055 BIOSIS Number: 82025457

AN INVESTIGATION OF MORTALITY FROM CANCER AND OTHER CAUSES OF DEATH AMONG WORKERS EMPLOYED AT AN EAST TEXAS USA CHEMICAL PLANT

SWEENEY M H; BEAUMONT J J; WAXWEILER R J; HALPERIN W E

NIOSH, 4676 COLUMBIA PARKW., ROBERT A. TAFT LAB., CINCINNATI, OHIO 45226, USA.

ARCH ENVIRON HEALTH 41 (1). 1986. 23-28. CODEN: AEHLA

Language: ENGLISH

Subfile: BA (Biological Abstracts)

The cause-specific mortality of 2,510 males employed at an east Texas chemical plant was examined in a historical prospective study to evaluate a

R&S 002093

suspected increase in deaths from multiple myeloma and brain cancer. Potential exposures from chemicals, either used in manufacturing processes or produced during the study period 1952-1977, included the fuel additive tetraethyl lead, ethylene dibromide and dichloride, inorganic lead, and vinyl chloride monomer. Overall mortality for all workers (156 observed vs. 211.14 expected) and for workers first employed between 1952 and 1959 (131 observed vs. 167.33 expected) when tetraethyl lead was the single major product was lower than expected when compared to the [USA] general population. There were no significant increases in mortality from malignancies or other causes of death. The deficits may be due to the small number of total deaths, and the lower power for detecting excess risk of mortality from multiple myeloma ($z1-.beta. = 27, .alpha. = .05$), brain cancer ($z1-.beta. = 31, .alpha. = .05$), or other rare causes of death; lack of complete workplace exposure data for production workers; and the absence of historical measurements on the extent of environmental exposure to tetraethyl lead and other chemicals.

Descriptors/Keywords: TETRAETHYLLEAD MULTIPLE MYELOMA BRAIN CANCER

Concept Codes:

- *13010 Metabolism-Minerals
- *15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- *15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms
- *34508 Immunology and Immunochemistry-Immunopathology, Tissue Immunology
- *37013 Public Health: Environmental Health-Occupational Health
- *37015 Public Health: Environmental Health-Air, Water and Soil Pollution
- 10069 Biochemical Studies-Minerals
- 12510 Pathology, General and Miscellaneous-Necrosis (1971-)

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/8

0016521168 BIOSIS Number: 31011376

BRAIN TUMORS AND OCCUPATIONAL RISK FACTORS A REVIEW

THOMAS T L; WAXWEILER R J

OCCUPATIONAL STUDIES SECTION, ENVIRONMENTAL EPIDEMIOLOGY BRANCH, NCI, LANDOW BUILDING, ROOM 4C16, BETHESDA, MD. 20892, USA.

SCAND J WORK ENVIRON HEALTH 12 (1). 1986. 1-15. CODEN: SWEHD

Language: ENGLISH

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: REVIEW HUMAN PHENOLIC COMPOUNDS ORGANIC SOLVENTS LUBRICATING OIL ACRYLONITRILE CHLORIDE VINYL CHLORIDE FORMALDEHYDE HYDROCARBONS CARCINOGENS ARTISTS LABORATORY PROFESSIONALS VETERINARIANS EMBALMERS OIL REFINERY WORKERS RUBBER WORKERS CHEMICAL PLANT WORKERS

Concept Codes:

- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24004 Neoplasms and Neoplastic Agents-Pathology; Clinical Aspects; Systemic Effects
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis

*37013 Public Health: Environmental Health-Occupational Health
*37015 Public Health: Environmental Health-Air, Water and Soil Pollution
10060 Biochemical Studies-General
12504 Pathology, General and Miscellaneous-Diagnostic
37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
Biosystematic Codes:
86215 Hominidae
Super Taxa:
Animals; Vertebrates; Mammals; Primates; Human

4/5/9

0016215934 BIOSIS Number: 81107234

ELECTROENCEPHALOGRAPHIC FINDINGS IN WORKERS EXPOSED TO BENZENE
KELLEROVA V

MEDICAL FACULTY OF HYGIENE, CHARLES UNIVERSITY, SROBAROVA 50, 100 34
PRAHA 10, CZECHOSLOVAKIA.

J HYG EPIDEMIOL MICROBIOL IMMUNOL (PRAGUE) 29 (4). 1985 (RECD. 1986).
337-346. CODEN: JHEMA

Language: ENGLISH

Subfile: BA (Biological Abstracts)

Preventive EEG examination was carried out in 40 workers significantly exposed to benzene. The EEG findings were compared with those of a control group of 48 healthy persons, a group of 110 workers significantly exposed to toluene and xylene and a group of 236 workers exposed to vinyl chloride. The individuals exposed to benzene exhibited 22.5% of abnormal and 45% threshold findings, the abnormalities being episodic, diffuse or a combination of the two. The effect of benzene entailed a frequent (32.5%) occurrence of a characteristic frequency lability. Sleep phenomena were found in a total of 60% cases (37.5% cases reached stage 1 B3 while 15% reached stage 2 according to Roth [14]). The rapid onset of deeper sleep stages (in 30% cases) is considered typical for benzene exposure. The photic driving response often had an extended frequency range (a total of 61.1%, to beta frequencies only in 30.55%, to both beta and theta frequencies also in 30.55% of cases). The different EEG features characteristic of the neurotoxic action of various types of organic solvents make possible a more efficient diagnostics of the effects of these chemicals on the CNS.

Descriptors/Keywords: TOLUENE XYLENE VINYL CHLORIDE NEUROTOXICITY DIAGNOSIS
Concept Codes:

*12504 Pathology, General and Miscellaneous-Diagnostic
*20506 Nervous System-Pathology
*22506 Toxicology-Environmental and Industrial Toxicology
*37013 Public Health: Environmental Health-Occupational Health
10504 Biophysics-General Biophysical Techniques
20501 Nervous System-General; Methods
21003 Psychiatry-Psychophysiology

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/10

0015576213 BIOSIS Number: 29039545

EARLY DIAGNOSIS OF CHRONIC POISONING WITH VINYL CHLORIDE
LYANGAUER-LEVOVITSKA G; KHABER-GARLINSKA YA; KALEMBA K
INST. MED. IND. CARBON METAL. IND., SOSNOWIEC, POL.

GIG TR PROF ZABOL 0 (1). 1985. 53-54. CODEN: GTPZA

Language: RUSSIAN

R&S 002095

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: NOTE HUMAN WORKER NEUROTOXICITY DERMAL TOXICITY
HEPATOTOXICITY

Concept Codes:

- *12504 Pathology, General and Miscellaneous-Diagnostic
- *14006 Digestive System-Pathology
- *18506 Integumentary System-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *37013 Public Health: Environmental Health-Occupational Health
- *37015 Public Health: Environmental Health-Air, Water and Soil Pollution
- 10060 Biochemical Studies-General
- 12503 Pathology, General and Miscellaneous-Comparative (1970-)

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/11

0015197731 BIOSIS Number: 79096894

INDUCTION OF SINGLE-STRAND BREAKS IN DNA OF MICE AFTER INHALATION OF
VINYL CHLORIDE

WALLES S A S; HOLMBERG B

UNIT OCCUPATIONAL TOXICOLOGY, RES. DEP., NATL. BOARD OCCUPATIONAL SAFETY
HEALTH, S-171 84 SOLNA, SWED.

CANCER LETT 25 (1). 1984 (RECD. 1985). 13-18. CODEN: CALED

Language: ENGLISH

Subfile: BA (Biological Abstracts)

Female mice were exposed to 500 ppm vinyl chloride (VC) for 6 h/day 5 days/wk for 1-8 wk. Groups of mice were killed at different times during this period. DNA damage, expressed as single-strand breaks (SSB), was studied in liver, kidneys, lungs, spleen and brain. The level of SSB increased in liver, kidneys, spleen and lungs with time of exposure and reached a plateau for kidneys and lungs after 80 and 120 h of exposure. In spleen there was only a slight increase in the SSB, and in brain no detectable increase was found.

Descriptors/Keywords: CARCINOGEN LIVER KIDNEY LUNG SPLEEN BRAIN

Concept Codes:

- *14006 Digestive System-Pathology
- *15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- *15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- *15506 Urinary System and External Secretions-Pathology
- *20506 Nervous System-Pathology
- *22501 Toxicology-General; Methods and Experimental
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- 10060 Biochemical Studies-General
- 10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines

Biosystematic Codes:

86275 Anomaluridae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Rodents

4/5/12

0015131509 BIOSIS Number: 28067340

R&S 002096

ARCHIVES OF RESEARCH ON INDUSTRIAL CARCINOGENESIS VOL. 2. EXPERIMENTAL
RESEARCH ON VINYL CHLORIDE CARCINOGENESIS

MALTONI C; ET AL

BOLOGNA INST. ONCOL., BOLOGNA, ITALY.

MALTONI, C. ET AL. (ED.). ARCHIVES OF RESEARCH ON INDUSTRIAL
CARCINOGENESIS, VOL. 2. EXPERIMENTAL RESEARCH ON VINYL CHLORIDE
CARCINOGENESIS. V+533P. PRINCETON SCIENTIFIC PUBLISHERS, INC.: PRINCETON,
N.J., USA. ILLUS. ISBN 0-911131-36-1. 0 (0). 1984. V+533P. CODEN:
ARCAE

Language: ENGLISH

Document Type: BOOK

Subfile: BARRM (Biological Abstracts/RRM)

This text provides the results of studies which were performed on vinyl chloride (VC) and its connection with carcinogenesis at the Bentivoglio Laboratories of the Bologna Institute of Oncology from 1971 to 1983. The text consists of 4 parts. Part 1 reviews the available data on general pathology and carcinogenicity. Included in this part are chemical and physical data on vinyl chloride, exposed population and regulatory measures, general pathology, and carcinogenicity. The second part on the experimental carcinogenicity studies performed at the Bentivoglio Laboratories of the Bologna Institute of Oncology includes the plan of the studies, data on the historical control animal groups, results and conclusions. The last 2 parts of the text discuss the history of VC carcinogenicity and conclusive remarks. The text is mainly comprised of tables, graphs and micrographs. An appendix is included which contains tables and graphs on the results of the single experiments of the project.

Descriptors/Keywords: BOOK HUMAN WORKER ANIMAL LIVER CANCER PULMONARY
ADENOMA LEUKEMIA BRAIN TUMOR EMBRYOTOXICITY MUTAGEN

Concept Codes:

- *03508 Genetics and Cytogenetics-Human
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms
- *25503 Developmental Biology-Embryology-Pathological
- *37013 Public Health: Environmental Health-Occupational Health
- *37015 Public Health: Environmental Health-Air, Water and Soil Pollution
- 02508 Cytology and Cytochemistry-Human
- 10060 Biochemical Studies-General
- 12503 Pathology, General and Miscellaneous-Comparative (1970-)
- 14006 Digestive System-Pathology
- 15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- 15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- 16006 Respiratory System-Pathology
- 20506 Nervous System-Pathology
- 25508 Developmental Biology-Embryology-Morphogenesis, General

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/13

0015002938 BIOSIS Number: 28002938

SEXUAL DISORDERS IN WOMEN CHRONICALLY EXPOSED TO METHYL METHACRYLATE AND VINYL CHLORIDE

MAKAROV I A; SOLOV'EVA M S; GNELITSKII G I

R&S 002097

INST. IND. HYG. OCCUP. DIS., GORKI, USSR.
GIG TR PROF ZABOL 0 (3). 1984. 22-27. CODEN: GTPZA
Language: RUSSIAN
Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: ANORGASMY GONADOTOXICITY NEUROTOXICITY

Concept Codes:

- *16506 Reproductive System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *37013 Public Health: Environmental Health-Occupational Health
- *37015 Public Health: Environmental Health-Air, Water and Soil Pollution
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 12503 Pathology, General and Miscellaneous-Comparative (1970-)
- 17006 Endocrine System-Gonads and Placenta
- 20506 Nervous System-Pathology

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/14

0014286675 BIOSIS Number: 78023155

OCCUPATIONAL INFLUENCES ON MALE FERTILITY AND SEXUALITY

STEENO O P; PANGKAHILA A

DEP. INTERNAL MED., DIV. ENDOCRINOL., NUTRITION ANDROL., ACADEMIC HOSP.

ST. RAPHAEL, LEUVEN/BELGIUM.

ANDROLOGIA 16 (1). 1984. 5-22. CODEN: ANDRD

Language: ENGLISH

Subfile: BA (Biological Abstracts)

Occupational influences on male fertility and sexuality are reviewed. The potential risks of physical factors (trauma, temperature, radiation, microwaves), of chemical factors (metals, mineral oils, hormones [oral contraceptives and estrogen] pesticides and herbicides, neurotoxins, vinylchloride and analogs, carbon disulfide), of physiopathological factors (infectious diseases occupationally acquired, low-back syndrome) and of psychological factors (stress, alcoholism) are discussed. The methodological aspects in monitoring the fertility and sexuality of male workers are considered. Physicians, practicing occupational medicine, are cautioned to be aware of these potential risks regarding gonadal function. Occupational hygienic measures are the 1st step in preventing environmental pollution hazards.

Descriptors/Keywords: HUMAN TRAUMA METAL MINERAL OIL TEMPERATURE HORMONE
PESTICIDE RADIATION HERBICIDE NEURO TOXIN VINYL CHLORIDE CARBON DI
SULFIDE ORAL CONTRACEPTIVE ESTROGEN LOW BACK PAIN STRESS ALCOHOLISM
INFECTIOUS DISEASE ENVIRONMENTAL POLLUTION HAZARD PREVENTION

Concept Codes:

- *06506 Radiation-Radiation Effects and Protective Measures
- *10612 External Effects-Physical and Mechanical Effects (1970-)
- *11310 Chordate Body Regions-Back and Buttocks (1970-)
- *12008 Physiology, General and Miscellaneous-Stress (1970-)
- *16506 Reproductive System-Pathology
- *17006 Endocrine System-Gonads and Placenta
- *20506 Nervous System-Pathology
- *21002 Psychiatry-Psychopathology; Psychodynamics and Therapy
- *21004 Psychiatry-Addiction-Alcohol, Drugs, Smoking, etc
- *22016 Pharmacology-Endocrine System
- *22028 Pharmacology-Reproductive System; Implantation Studies

R&S 002098

*22501 Toxicology-General; Methods and Experimental
*22504 Toxicology-Pharmacological Toxicology (1972-)
*22506 Toxicology-Environmental and Industrial Toxicology
*23007 Temperature: Its Measurement, Effects and
Regulation-Thermopathology (1971-)
*36001 Medical and Clinical Microbiology-General; Methods and Techniques
*37013 Public Health: Environmental Health-Occupational Health
*37017 Public Health: Environmental Health-Radiation Health
05500 Social Biology; Human Ecology
06504 Radiation-Radiation and Isotope Techniques
07004 Behavioral Biology-Human Behavior
10060 Biochemical Studies-General
10066 Biochemical Studies-Lipids
10069 Biochemical Studies-Minerals
10614 External Effects-Temperature as a Primary Variable (1971-)
22003 Pharmacology-Drug Metabolism; Metabolic Stimulators
22005 Pharmacology-Clinical Pharmacology (1972-)
37012 Public Health-Health Services and Medical Care
54600 Pest Control, General; Pesticides; Herbicides
Biosystematic Codes:
01000 Microorganisms-Unspecified
86215 Hominidae
Super Taxa:
Microorganisms; Animals; Vertebrates; Mammals; Primates; Human

4/5/15

0014224870 BIOSIS Number: 77057854

DI METHYL TIN DI CHLORIDE INVESTIGATIONS INTO ITS GASTRO INTESTINAL
ABSORPTION AND TRANS PLACENTAL TRANSFER

NOLAND E A; MCCAULEY P T; BULL R J

TARGET ORGAN TOXICITY BRANCH, TOXICOLOGY AND MICROBIOLOGY DIVISION,
HEALTH EFFECTS RESEARCH LABORATORY, U.S. ENVIRONMENTAL PROTECTION AGENCY,
CINCINNATI, OHIO 45268.

J TOXICOL ENVIRON HEALTH 12 (1). 1983. 89-98. CODEN: JTEHD

Language: ENGLISH

Subfile: BA (Biological Abstracts)

Dimethyltin dichloride (DMDC) is commonly used as a stabilizer in PVC [polyvinyl chloride] pipe used for transport of potable water. Learning deficiencies have been observed postnatally in pups from DMDC-treated dams. Studies were conducted with female Sprague-Dawley rats to determine whether DMDC was absorbed by the dam and transferred across the placenta to fetal blood and brain tissue. This was accomplished in 3 phases: a comparison of absorption of organic and inorganic tin from drinking water, a comparison of prenatal and postnatal levels of Sn in the pups in cross-fostering studies and a [14C] dimethyltin dichloride tracer study to determine whether organic Sn passed to the pup intact. DMDC was absorbed in the gastrointestinal tract of the dam much more rapidly than Sn²⁺. The more rapid absorption of DMDC resulted in higher concentration of Sn in fetal blood and brain. In fetuses that received Sn DMDC, Sn and the methyl C were absorbed by the dam and transferred to the blood and brain of the fetuses.

Descriptors/Keywords: RAT PUP LEARNING POLY VINYL CHLORIDE PIPE DRINKING
WATER

Concept Codes:

*07003 Behavioral Biology-Animal Behavior
*13010 Metabolism-Minerals
*14004 Digestive System-Physiology and Biochemistry
*16506 Reproductive System-Pathology
*20506 Nervous System-Pathology

*22506 Toxicology-Environmental and Industrial Toxicology
*25503 Developmental Biology-Embryology-Pathological
*25504 Developmental Biology-Embryology-Experimental
*25508 Developmental Biology-Embryology-Morphogenesis, General
06504 Radiation-Radiation and Isotope Techniques
07514 Ecology; Environmental Biology-Limnology
07517 Ecology; Environmental Biology-Water Research and Fishery Biology
(1969-1984)
10059 Biochemical Methods-Minerals
10069 Biochemical Studies-Minerals
15002 Blood, Blood-Forming Organs and Body Fluids-Blood and Lymph
Studies
25000 Pediatrics
37015 Public Health: Environmental Health-Air, Water and Soil Pollution
Biosystematic Codes:
86375 Muridae
Super Taxa:
Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Rodents

4/5/16

0014190728 BIOSIS Number: 77023712

VINYL CHLORIDE DISEASE NEUROLOGICAL DISTURBANCES

LANGAUER-LEWOWICKA H; KURZBAUER H; BYCZKOWSKA Z; WOCKA-MAREK T

INSTITUTE OF OCCUPATIONAL MEDICINE IN THE MINING AND METALLURGICAL
INDUSTRY, UL. BIERUTA 12, PL-41-200 SOSNOWIEC, POLAND.

INT ARCH OCCUP ENVIRON HEALTH 52 (2). 1983. 151-158. CODEN: IAOHD

Language: ENGLISH

Subfile: BA (Biological Abstracts)

In a plant producing vinyl chloride by the emulsion method 200 workers who were exposed to vinyl chloride for 1-25 yr (mean 14), 58 (i.e., 29%) were free of complaints and nervous disturbances. An asthenoautonomic syndrome was found in 54 (i.e., 27%) and in 88 (i.e., 44%) in combination with positive neurological findings, i.e., pyramidal syndromes (in 52), cerebellar disturbances (in 38), trigeminal neuropathy (in 24) and extrapyramidal symptoms (in 3), and in various combinations: pyramidal + cerebellar in 12, trigeminal + pyramidal in 7, trigeminal + cerebellar in 5. Headaches (48%), nervousness (26%), decrease in physical strength (16%), loss of memory (14%), sleeping disturbances and somnolence were the most frequent complaints. Scleroderma-like skin changes were found in 10 subjects, but only 6 had any neurological disturbances. Occupational exposure to vinyl chloride was lower in workers without neurological findings. Frequency of the arterial hypertension was the same in both groups; acroparesthesias, Raynaud's syndrome and increased .gamma.GTP [.gamma.-glutamyltranspeptidase] serum activity were significantly more frequent in workers with neurological disturbances. Sixty-two percent of the neurologically positive group (62%) and 24% of the negative group reported euphoric or narcotic states after exposure. This probably indicated episodic exposures to high concentrations of vinyl chloride. This difference pointed to a possibility that neurological disturbances may have been related to short exposures to peak concentrations. The neurological injury may have been a direct neurotoxic effect of vinyl chloride and secondary to vascular disorders.

Descriptors/Keywords: HUMAN MEMORY SLEEP DISORDER HYPERTENSION RAYNAUDS
DISEASE SCLERODERMA

Concept Codes:

*07004 Behavioral Biology-Human Behavior

*14508 Cardiovascular System-Blood Vessel Pathology

R&S 002100

*18506 Integumentary System-Pathology
*20506 Nervous System-Pathology
*21002 Psychiatry-Psychopathology; Psychodynamics and Therapy
*22506 Toxicology-Environmental and Industrial Toxicology
*37013 Public Health: Environmental Health-Occupational Health
*37015 Public Health: Environmental Health-Air, Water and Soil Pollution
05500 Social Biology; Human Ecology
10060 Biochemical Studies-General
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10808 Enzymes-Physiological Studies
11304 Chordate Body Regions-Head (1970-)
11318 Chordate Body Regions-Extremities (1970-)
12503 Pathology, General and Miscellaneous-Comparative (1970-)
13012 Metabolism-Proteins, Peptides and Amino Acids
Biosystematic Codes:
86215 Hominidae
Super Taxa:
Animals; Vertebrates; Mammals; Primates; Human

4/5/17

0013308688 BIOSIS Number: 76066180

A CASE CONTROL STUDY OF CHEMICAL EXPOSURES AND BRAIN TUMORS IN
PETROCHEMICAL WORKERS

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DEP. EPIDEMIOLOG., UNION CARBIDE CORP., OLD RIDGEBURY ROAD, DANBURY, CONN.
06817.

J OCCUP MED 25 (4). 1983. 313-320. CODEN: JOCMA

Language: ENGLISH

Subfile: BA (Biological Abstracts)

The relationship between chemical exposures and deaths attributable to primary brain tumors among employees of a Texas, [USA] petrochemical plant was investigated. Cases consisted of 21 deaths in which the underlying cause was confirmed as a primary brain tumor. Two control groups of 80 employees each were randomly selected from 450 decedents known to the company in June, 1979. Potential exposures while employed were compared between cases and controls for 5 known or suspect carcinogens [benzene, ethylene dichloride, ethylene oxide, diethyl sulfate, vinyl chloride]. Exposure potentials were also compared for an additional 37 chemicals to which at least 4 cases were potentially exposed. Overall and 15 yr latency analyses were performed. The proportion of cases exposed to the 5 potentially carcinogenic chemicals (including vinyl chloride) were lower than or consistent with the proportion of exposed controls. No statistically significant differences between the proportions of cases and controls exposed to the 37 other chemicals were found.

Descriptors/Keywords: HUMAN BENZENE ETHYLENE DI CHLORIDE ETHYLENE OXIDE DI
ETHYL SULFATE VINYL CHLORIDE CARCINOGEN MORTALITY TEXAS USA

Concept Codes:

*20506 Nervous System-Pathology
*22506 Toxicology-Environmental and Industrial Toxicology
*24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
*37013 Public Health: Environmental Health-Occupational Health
*37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
05500 Social Biology; Human Ecology
10060 Biochemical Studies-General
12510 Pathology, General and Miscellaneous-Necrosis (1971-)

Biosystematic Codes:

86215 Hominidae

Super Taxa:

R&S 002101

Animals; Vertebrates; Mammals; Primates; Human

4/5/18

0012275353 BIOSIS Number: 74047833

REACTIONS OF VINYL CHLORIDE WITH RNA AND DNA OF VARIOUS MOUSE TISSUES
IN-VIVO

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SWEDEN.

ARCH TOXICOL 49 (2). 1982. 117-130. CODEN: ARTOD

Language: ENGLISH

Subfile: BA (Biological Abstracts)

The irreversible binding of ¹⁴C-vinyl chloride metabolites to RNA and DNA of mouse brain, lung, liver, kidney, spleen, pancreas and testes after a single i.p. injection was studied. Hydrolysates of nucleic acids from selected organs were separated on Aminex A6 for quantitation of alkylation products. Radioactivity in nucleic acids was registered in all organs with the exception of brain. RNA from spleen, pancreas and liver and DNA from spleen and liver contained the highest amounts of radioactivity. In nucleic acids from spleen and pancreas, organs of high metabolic activity, the entire radioactivity was metabolically incorporated as Cl-fragments. In RNA of kidney and liver a large part of the radioactivity was present as incorporated Cl-fragments but 3,N4-ethenocytidine (in kidney), and 1,N6-ethenoadenosine and 1,N6-ethenoadenine (in kidney and liver) were identified as alkylation products. In liver DNA incorporation of Cl-fragments was insignificant, indicating different interactions of vinyl chloride metabolites (Cl-fragments and alkylating products) with RNA and DNA. The elution profiles of radioactivity in hydrolysates of liver DNA were dominated by an alkylation product of unknown structure (probably a derivative of deoxyguanosine). Possibly 1,N6-ethenodeoxyadenosine and 1,N6-ethenoadenine were also present in liver DNA. Results were consistent with the ability of vinyl chloride to act as a multipotent carcinogen by alkylation of DNA in several tissues.

Descriptors/Keywords: BRAIN LUNG LIVER KIDNEY SPLEEN PANCREAS TESTES

CARCINOGEN CARBON-14 LABEL INTRA PERITONEAL INJECTION

Concept Codes:

- *13002 Metabolism-General Metabolism; Metabolic Pathways
- *13014 Metabolism-Nucleic Acids, Purines and Pyrimidines
- *14006 Digestive System-Pathology
- *15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- *15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- *15506 Urinary System and External Secretions-Pathology
- *16006 Respiratory System-Pathology
- *16506 Reproductive System-Pathology
- *17008 Endocrine System-Pancreas
- *20506 Nervous System-Pathology
- *22501 Toxicology-General; Methods and Experimental
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- 06504 Radiation-Radiation and Isotope Techniques
- 10060 Biochemical Studies-General
- 10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
- 10504 Biophysics-General Biophysical Techniques
- 11314 Chordate Body Regions-Abdomen (1970-)
- 12100 Movement (1971-)
- 17006 Endocrine System-Gonads and Placenta
- 22100 Routes of Immunization, Infection and Therapy

R&S 002102

10/23/89

Neurotoxicology of Vinyl Chloride

Page 15

Biosystematic Codes:

86375 Muridae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Rodents

4/5/19

0012216965 BIOSIS Number: 73076949

MALIGNANT TUMORS AFTER CHRONIC EXPOSURE TO VINYL CHLORIDE

EMMERICH K H; NORPOTH K

INST. PATHOL., UNIV. MUENSTER, DOMAGKSTR. 17, D-4400 MUENSTER, W. GER.

J CANCER RES CLIN ONCOL 102 (1). 1981 (RECD. 1982). 1-12. CODEN:

JCROD

Language: ENGLISH

Subfile: BA (Biological Abstracts)

Correlations between exposure to vinyl chloride and the development of malignant tumors in the liver have been known since 1974 and have been confirmed by many experimental investigations. Based on the evaluation of [human] mortality statistics from 9 different countries an increased incidence of malignant tumors of the lung, the gastrointestinal tract and the central nervous system (CNS) and of malignant lymphomas is documented in connection with exposure to vinyl chloride. Statistically significant increases were only found in the incidence of malignant liver tumors. Metabolism and toxicology of vinyl chloride are discussed in detail.

Descriptors/Keywords: HUMAN LUNG GASTRO INTESTINAL TRACT CENTRAL NERVOUS
SYSTEM CARCINOGEN MORTALITY STATISTICS

Concept Codes:

- *13002 Metabolism-General Metabolism; Metabolic Pathways
- *14006 Digestive System-Pathology
- *16006 Respiratory System-Pathology
- *20506 Nervous System-Pathology
- *22501 Toxicology-General; Methods and Experimental
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms
- *37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
- 04500 Mathematical Biology and Statistical Methods
- 10060 Biochemical Studies-General
- 12510 Pathology, General and Miscellaneous-Necrosis (1971-)
- 15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- 15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- 37010 Public Health-Public Health Administration and Statistics

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/20

0012209661 BIOSIS Number: 73069645

IN-VITRO METABOLISM OF ACRYLONITRILE TO 2 CYANO ETHYLENE OXIDE REACTION
WITH GLUTATHIONE AND IRREVERSIBLE BINDING TO PROTEINS AND NUCLEIC-ACIDS

GUENGERICH F P; GEIGER L E; HOGY L L; WRIGHT P L

DEP. BIOCHEM., VANDERBILT UNIV. SCH. MED., NASHVILLE, TENN. 37232.

CANCER RES 41 (12 PART 1). 1981. 4925-4933. CODEN: CNREA

Language: ENGLISH

Subfile: BA (Biological Abstracts)

The metabolism of the suspected carcinogen acrylonitrile was studied using subcellular fractions isolated from rats and humans. Irreversible binding of radioactive label from [1-¹⁴C]- or [2,3-¹⁴C]acrylonitrile to protein and DNA was enhanced by reduced NADP in the presence of rat liver microsomes or a reconstituted cytochrome P-450 system. During the reduced NADP-dependent reaction, HCN was produced and the heme of cytochrome P-450 was destroyed. Rat brain microsomes did not produce detectable levels of metabolites. Conclusive evidence of metabolically mediated binding of acrylonitrile to protein and DNA in human systems was not found. Metabolism was induced in rats by pretreatment of animals with either phenobarbital or 5,6-benzoflavone. Labeled 2-cyanoethylene oxide was found to bind irreversibly to calf thymus DNA and microsomal protein. The extent of binding was greater in the case of 2,3-¹⁴C-labeled than 1-¹⁴C-labeled material. The relative 1st-order rate of acrylonitrile binding to calf thymus DNA in rat liver microsomal systems was 1-2 orders of magnitude less than that for 1,1,2-trichloroethylene and 3 orders of magnitude less than that for vinyl chloride or vinyl bromide. Rat liver microsomes or a reconstituted cytochrome P-450 system catalyzed the mixed-function oxidation of acrylonitrile to 2-cyanoethylene oxide. 2-Cyanoethylene oxide has a half-life of about 2 h in neutral buffer at 37.degree.. This epoxide was found to serve as a substrate for microsomal epoxide hydrolase. HCN was released during hydrolysis of 2-cyanoethylene oxide or reaction of the epoxide with reduced glutathione; HCN release in either case was not stoichiometric with epoxide disappearance. 2-Cyanoethylene oxide reacted less rapidly with reduced glutathione than did acrylonitrile. Rat liver cytosol preparations contained glutathione S-transferase activity towards acrylonitrile and greater activity with 2-cyanoethylene oxide as a substrate. Cytosol preparations from rat brain and human liver had no detectable glutathione S-transferase activity towards acrylonitrile but did exhibit some activity towards 2-cyanoethylene oxide. These studies establish the basic pathways involved in the metabolism of acrylonitrile and should provide a basis for examination of the relevance of these individual steps and their roles in bioactivation and detoxication under more physiological situations.

Descriptors/Keywords: HUMAN RAT CALF THYMUS BRAIN LIVER 1 1 2 TRI CHLORO
ETHYLENE VINYL BROMIDE VINYL CHLORIDE CARCINOGEN PHENO BARBITAL 5 6 BENZO
FLAVONE GLUTATHIONE S TRANSFERASE EPOXIDE HYDROLASE CYTOCHROME P-450 NADP
RADIO LABEL

Concept Codes:

- *10808 Enzymes-Physiological Studies
- *13002 Metabolism-General Metabolism; Metabolic Pathways
- *13012 Metabolism-Proteins, Peptides and Amino Acids
- *13014 Metabolism-Nucleic Acids, Purines and Pyrimidines
- *14004 Digestive System-Physiology and Biochemistry
- *20504 Nervous System-Physiology and Biochemistry
- *22501 Toxicology-General; Methods and Experimental
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- 06504 Radiation-Radiation and Isotope Techniques
- 10060 Biochemical Studies-General
- 10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
- 10064 Biochemical Studies-Proteins, Peptides and Amino Acids
- 10065 Biochemical Studies-Porphyrins and Bile Pigments
- 17016 Endocrine System-Thymus
- 22002 Pharmacology-General
- 32500 Tissue Culture, Apparatus, Methods and Media
- 32600 In Vitro Studies, Cellular and Subcellular

Biosystematic Codes:

85715 Bovidae
86215 Hominidae
86375 Muridae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Primates; Human; Rodents

4/5/21

0012204728 BIOSIS Number: 73064712

POWER CONSIDERATIONS IN EPIDEMIOLOGIC STUDIES OF VINYL CHLORIDE WORKERS
BEAUMONT J J; BRESLOW N E
INDUSTRYWIDE STUDIES BRANCH F-8, NATIONAL INSTITUTE FOR OCCUPATIONAL
SAFETY AND HEALTH, 4676 COLUMBIA PARKWAY, CINCINNATI, OH 45226.

AM J EPIDEMIOL 114 (5). 1981. 725-734. CODEN: AJEPA

Language: ENGLISH

Subfile: BA (Biological Abstracts)

Nine retrospective mortality studies of workers exposed to vinyl chloride were reviewed to determine whether differences in their hypothesis testing results might be due to differences in statistical power. Where possible, the power of each study was calculated for cancer of the lung, brain and liver. When power was taken into consideration, the results for liver and brain cancer were consistent with an etiologic role for vinyl chloride. For lung cancer, the data were not consistent with an etiologic role, in that 2 studies with very high power yielded negative results.

Descriptors/Keywords: HUMAN LUNG CANCER BRAIN CANCER LIVER CANCER MORTALITY
Concept Codes:

- *14006 Digestive System-Pathology
- *16006 Respiratory System-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37010 Public Health-Public Health Administration and Statistics
- *37013 Public Health: Environmental Health-Occupational Health
- *37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
- 04500 Mathematical Biology and Statistical Methods
- 10060 Biochemical Studies-General
- 12503 Pathology, General and Miscellaneous-Comparative (1970-)
- 12510 Pathology, General and Miscellaneous-Necrosis (1971-)

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/22

0012104252 BIOSIS Number: 23034244

EPIDEMIOLOGIC STUDY OF VINYL CHLORIDE WORKERS MORTALITY THROUGH DEC. 31
1972

COOPER W C

2150 SHATTUCK AVE., SUITE 401, BERKELEY, CALIF. 94704.

CONFERENCE TO REEVALUATE THE TOXICITY OF VINYL CHLORIDE MONOMER,
POLY(VINYL CHLORIDE) AND STRUCTURAL ANALOGS, BETHESDA, MD., USA, MAR.
20-21, 1980. ENVIRON HEALTH PERSPECT 41 (0). 1981 (RECD. 1982). 101-106.
CODEN: EVHPA

Language: ENGLISH

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN RESPIRATORY TRACT MALIGNANCY DIGESTIVE TRACT
MALIGNANCY BRAIN NEOPLASM USA

R&S 002105

Concept Codes:

- *14006 Digestive System-Pathology
- *16006 Respiratory System-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37013 Public Health: Environmental Health-Occupational Health
- *37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
- 00520 General Biology-Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 12510 Pathology, General and Miscellaneous-Necrosis (1971-)
- 37010 Public Health-Public Health Administration and Statistics

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/23

0012102436 BIOSIS Number: 23032428

OBSERVATIONS OF THE SITE SPECIFIC CARCINOGENICITY OF VINYL CHLORIDE TO
HUMANS

INFANTE P F

HEALTH STANDARDS PROGRAMS, OCCUP. SAF. HEALTH ADM., WASHINGTON, D.C.
20210, USA.CONFERENCE TO REEVALUATE THE TOXICITY OF VINYL CHLORIDE MONOMER,
POLY(VINYL CHLORIDE) AND STRUCTURAL ANALOGS, BETHESDA, MD., USA, MAR.
20-21, 1980. ENVIRON HEALTH PERSPECT 41 (0). 1981 (RECD. 1982). 89-94.
CODEN: EVHPA

Language: ENGLISH

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: LIVER CANCER LUNG CANCER CENTRAL NERVOUS SYSTEM
CANCER LYMPHATIC CANCER LEUKEMIA OCCUPATIONAL HAZARD

Concept Codes:

- *14006 Digestive System-Pathology
- *16006 Respiratory System-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial
Neoplasms
- *37013 Public Health: Environmental Health-Occupational Health
- *37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
- 00520 General Biology-Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals
- 10060 Biochemical Studies-General
- 15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and
Reticuloendothelial Pathologies
- 15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and
Reticuloendothelial System
- 37015 Public Health: Environmental Health-Air, Water and Soil Pollution

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/24

R&S 002106

0012051618 BIOSIS Number: 22051618

POWER CONSIDERATIONS IN EPIDEMIOLOGIC STUDIES OF VINYL CHLORIDE WORKERS

BEAUMONT J J; BRESLOW N E

NIOSH, CINCINNATI, OH 45226.

14TH ANNUAL MEETING OF THE SOCIETY FOR EPIDEMIOLOGIC RESEARCH, SNOWBIRD, UTAH, USA, JUNE 17-19, 1981. AM J EPIDEMIOL 114 (3). 1981. 438.

CODEN: AJEPA

Language: ENGLISH

Document Type: CONFERENCE PAPER

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: ABSTRACT HUMAN LUNG BRAIN LIVER CANCER MORTALITY

Concept Codes:

*14006 Digestive System-Pathology

*16006 Respiratory System-Pathology

*20506 Nervous System-Pathology

*22506 Toxicology-Environmental and Industrial Toxicology

*24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis

*37013 Public Health: Environmental Health-Occupational Health

*37015 Public Health: Environmental Health-Air, Water and Soil Pollution

*37054 Public Health: Epidemiology-Organic Diseases and Neoplasms

00520 General Biology-Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals

05500 Social Biology; Human Ecology

10060 Biochemical Studies-General

12503 Pathology, General and Miscellaneous-Comparative (1970-)

12510 Pathology, General and Miscellaneous-Necrosis (1971-)

13002 Metabolism-General Metabolism; Metabolic Pathways

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/25

0011264311 BIOSIS Number: 72049295

VINYL CHLORIDE TOXICITY AFTER INHALATION

CHYBA A

00-791 WARSZAWA, UL. CHOCIMSKA 24.

ROCZ PANSTW ZAKL HIG 31 (6). 1980 (RECD. 1981). 615-621. CODEN:
RPZHA

Language: POLISH

Subfile: BA (Biological Abstracts)

White rats were exposed continuously to vinyl chloride (inhaled air) in concentrations of 1, 1.8, 2, 3.6, 11.5 and 30. mg/m³ air. The animals were intoxicated in special chambers for 7-8 mo. During that time the rats were weighed and hematological parameters and blood cholinesterase activity were determined. Ca level and alkaline phosphatase activity were determined in plasma. CNS efficiency was also tested. After completion of exposure, weight of the internal organs was determined and histological examinations were performed. Vinyl chloride in all concentrations reduced the efficiency of CNS and prolonged blood clotting time. In plasma, concentrations of 3.6, 11.5 and 30 mg/m³ reduced Ca level.

Descriptors/Keywords: RAT NEURO TOXICITY BLOOD CHOLIN ESTERASE ALKALINE
PHOSPHATASE CALCIUM KINETICS

Concept Codes:

*10808 Enzymes-Physiological Studies

*13002 Metabolism-General Metabolism; Metabolic Pathways

*13010 Metabolism-Minerals

R&S 002107

*13012 Metabolism-Proteins, Peptides and Amino Acids
*15004 Blood, Blood-Forming Organs and Body Fluids-Blood Cell Studies
*15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
*20506 Nervous System-Pathology
*22501 Toxicology-General; Methods and Experimental
01054 Microscopy Techniques-Cytology and Cytochemistry
01056 Microscopy Techniques-Histology and Histochemistry
02506 Cytology and Cytochemistry-Animal
10010 Comparative Biochemistry, General
10054 Biochemical Methods-Proteins, Peptides and Amino Acids
10059 Biochemical Methods-Minerals
10060 Biochemical Studies-General
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10069 Biochemical Studies-Minerals
10802 Enzymes-General and Comparative Studies; Coenzymes
11108 Anatomy and Histology, General and Comparative-Microscopic and Ultramicroscopic Anatomy
12503 Pathology, General and Miscellaneous-Comparative (1970-)
16001 Respiratory System-General; Methods
20501 Nervous System-General; Methods
22100 Routes of Immunization, Infection and Therapy
Biosystematic Codes:
86375 Muridae
Super Taxa:
Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Rodents

4/5/26

0011201517 BIOSIS Number: 71071509
ACRO OSTEOLYSIS REPORT OF 2 CASES AND BRIEF REVIEW OF LITERATURE
KAUR S; KUMAR B; CHOPRA J S; LAMBA G; NARANG A
DEP. DERMATOL., POST-GRAD. INST. MED. EDUC. RES., CHANDIGARH, INDIA.
CLIN NEUROL NEUROSURG 82 (1). 1980. 45-56. CODEN: CNNSB
Language: ENGLISH
Subfile: BA (Biological Abstracts)
Siblings (2) with acro-osteolysis, a rare disorder, are discussed. Although 3 distinct types of acro-osteolysis, i.e., familial, idiopathic and due to vinyl chloride, are clearly defined, these patients did not fit into any category. They had intact nails, preserved tactile and sensory system, plantar ulceration and no sensory deficit. Nerve conduction studies showed prolongation of motor distal latencies in median, ulnar, posterior tibial and lateral popliteal nerves. Nerve biopsies from both patients showed severe loss of myelinated fibers of all sizes, but more so of small ones.

Descriptors/Keywords: HUMAN VINYL CHLORIDE PLANTAR ULCERATION MYELINATED FIBER LOSS

Concept Codes:

*13004 Metabolism-Carbohydrates
*13012 Metabolism-Proteins, Peptides and Amino Acids
*18006 Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology
*20506 Nervous System-Pathology
02508 Cytology and Cytochemistry-Human
03508 Genetics and Cytogenetics-Human
10060 Biochemical Studies-General
10068 Biochemical Studies-Carbohydrates
11318 Chordate Body Regions-Extremities (1970-)
12504 Pathology, General and Miscellaneous-Diagnostic

12508 Pathology, General and Miscellaneous-Inflammation and Inflammatory Disease
13006 Metabolism-Lipids
17506 Muscle-Pathology
18501 Integumentary System-General; Methods
20501 Nervous System-General; Methods
22501 Toxicology-General; Methods and Experimental

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/27

0011053547 BIOSIS Number: 20053547

MAXIMUM PERMISSIBLE CONCENTRATION OF VINYL CHLORIDE IN AIR

MURATOV M M; TAKHIROV M T

UZB. RES. INST. SANIT. HYG. OCCUP. DIS., TASHKENT, USSR.

GIG SANIT 0 (11). 1979 (RECD. 1980). 74-76. CODEN: GISAA

Language: RUSSIAN

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: NOTE HUMAN RAT CARCINOGEN RNA IMMUNITY MUTAGENICITY
TEMPERATURE LIVER KIDNEY BRAIN HEART OCCUPATIONAL HEALTH

Concept Codes:

*02506 Cytology and Cytochemistry-Animal

*14006 Digestive System-Pathology

*14506 Cardiovascular System-Heart Pathology

*15506 Urinary System and External Secretions-Pathology

*20506 Nervous System-Pathology

*22506 Toxicology-Environmental and Industrial Toxicology

*24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis

*37013 Public Health: Environmental Health-Occupational Health

*37015 Public Health: Environmental Health-Air, Water and Soil Pollution

00508 General Biology-Institutions, Administration and Legislation

10060 Biochemical Studies-General

10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines

10300 Replication, Transcription, Translation

10614 External Effects-Temperature as a Primary Variable (1971-)

12503 Pathology, General and Miscellaneous-Comparative (1970-)

13002 Metabolism-General Metabolism; Metabolic Pathways

13014 Metabolism-Nucleic Acids, Purines and Pyrimidines

14001 Digestive System-General; Methods

14501 Cardiovascular System-General; Methods

15501 Urinary System and External Secretions-General; Methods

20501 Nervous System-General; Methods

23001 Temperature: Its Measurement, Effects and Regulation-General
Measurement and Methods

34502 Immunology and Immunochemistry-General; Methods

Biosystematic Codes:

86215 Hominidae

86375 Muridae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human; Nonhuman Vertebrates;
Nonhuman Mammals; Rodents

4/5/28

0010176942 BIOSIS Number: 69051938

1 YEAR TIME SEQUENCE INHALATION TOXICITY STUDY OF VINYL CHLORIDE IN RATS

2. MORPHOLOGICAL CHANGES IN THE RESPIRATORY TRACT CERUMINOUS GLANDS BRAIN

R&S 002109

KIDNEYS HEART AND SPLEEN

FERON V J; KROES R

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

TOXICOLOGY 13 (2). 1979. 131-142. CODEN: TXCYA

Language: ENGLISH

Subfile: BA (Biological Abstracts)

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/Keywords: NASAL CAVITY EPENDYMOA PAPILLARY ADENOMA MESENCHYMAL TYPE TUMOR SQUAMOUS CELL CARCINOMA OLFACTORY EPITHELIAL CARCINOMA CARCINO SARCOMA ESTHESIO NEURO EPITHELIOMA

Concept Codes:

- *14506 Cardiovascular System-Heart Pathology
- *15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- *15506 Urinary System and External Secretions-Pathology
- *16006 Respiratory System-Pathology
- *18006 Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology
- *20006 Sense Organs, Associated Structures and Functions-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37015 Public Health: Environmental Health-Air, Water and Soil Pollution
- 02506 Cytology and Cytochemistry-Animal
- 10060 Biochemical Studies-General
- 11108 Anatomy and Histology, General and Comparative-Microscopic and Ultramicroscopic Anatomy
- 12510 Pathology, General and Miscellaneous-Necrosis (1971-)
- 13002 Metabolism-General Metabolism; Metabolic Pathways
- 15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- 16001 Respiratory System-General; Methods
- 20002 Sense Organs, Associated Structures and Functions-Anatomy
- 22100 Routes of Immunization, Infection and Therapy
- 22501 Toxicology-General; Methods and Experimental

Biosystematic Codes:

86375 Muridae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Rodents

4/5/29

0009240006 BIOSIS Number: 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

R&S 002110

Subfile: BA (Biological Abstracts)

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

Concept Codes:

- *10006 Clinical Biochemistry; General Methods and Applications
- *10050 Biochemical Methods-General
- *13002 Metabolism-General Metabolism; Metabolic Pathways
- *14004 Digestive System-Physiology and Biochemistry
- *15002 Blood, Blood-Forming Organs and Body Fluids-Blood and Lymph Studies
- *15504 Urinary System and External Secretions-Physiology and Biochemistry
- *16004 Respiratory System-Physiology and Biochemistry
- *20504 Nervous System-Physiology and Biochemistry
- *22501 Toxicology-General; Methods and Experimental
- *24006 Neoplasms and Neoplastic Agents-Biochemistry
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- 10010 Comparative Biochemistry, General
- 10060 Biochemical Studies-General
- 10504 Biophysics-General Biophysical Techniques
- 10506 Biophysics-Molecular Properties and Macromolecules
- 12003 Physiology, General and Miscellaneous-Comparative (1970-)
- 12100 Movement (1971-)
- 14501 Cardiovascular System-General; Methods
- 19001 Dental and Oral Biology-General; Methods
- 22100 Routes of Immunization, Infection and Therapy

Biosystematic Codes:

86375 Muridae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Rodents

4/5/30

0009203613 BIOSIS Number: 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. CODEN: KHZDA

Language: BULGARIAN

Subfile: BA (Biological Abstracts)

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

R&S 002111

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/Keywords: HUMAN NEUROPATHY ACRO OSTEOLYSIS THROMBOCYTOPENIA
GAMMA GLUTAMYL TRANS PEPTIDASE

Concept Codes:

- *10808 Enzymes-Physiological Studies
- *15004 Blood, Blood-Forming Organs and Body Fluids-Blood Cell Studies
- *15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- *18006 Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology
- *20506 Nervous System-Pathology
- *22505 Toxicology-Antidotes and Preventative Toxicology (1972-)
- *22506 Toxicology-Environmental and Industrial Toxicology
- *37013 Public Health: Environmental Health-Occupational Health
- 02508 Cytology and Cytochemistry-Human
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 10064 Biochemical Studies-Proteins, Peptides and Amino Acids
- 12504 Pathology, General and Miscellaneous-Diagnostic
- 13202 Nutrition-General Studies, Nutritional Status and Methods
- 14004 Digestive System-Physiology and Biochemistry
- 37015 Public Health: Environmental Health-Air, Water and Soil Pollution

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/31

0009159995 BIOSIS Number: 67039995

EFFECTS OF VINYL CHLORIDE EXPOSURE ALONE AND IN COMBINATION WITH TRYPAN 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: TXCYA

Language: ENGLISH

Subfile: BA (Biological Abstracts)

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/Keywords: TERATOGEN CENTRAL NERVOUS SYSTEM MALFORMATION
MORTALITY

Concept Codes:

- *22501 Toxicology-General; Methods and Experimental
- *25554 Developmental Biology-Embryology-Experimental Teratology and Teratogenesis
 - 10060 Biochemical Studies-General
 - 10508 Biophysics-Membrane Phenomena
 - 12100 Movement (1971-)
 - 12510 Pathology, General and Miscellaneous-Necrosis (1971-)
 - 15002 Blood, Blood-Forming Organs and Body Fluids-Blood and Lymph Studies
 - 15010 Blood, Blood-Forming Organs and Body Fluids-Other Body Fluids
 - 16001 Respiratory System-General; Methods
 - 16504 Reproductive System-Physiology and Biochemistry
 - 20506 Nervous System-Pathology
 - 22100 Routes of Immunization, Infection and Therapy
 - 22506 Toxicology-Environmental and Industrial Toxicology
 - 25503 Developmental Biology-Embryology-Pathological

Biosystematic Codes:

86375 Muridae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Rodents

4/5/32

0009087801 BIOSIS Number: 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
Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN RAT MOUSE NERVOUS SYSTEM VINYL CHLORIDE
CARCINOGEN OCCUPATIONAL EXPOSURE MIXED FUNCTION OXIDASE NERVOUS SYSTEM
EFFECTS LUNG CANCER SKIN CANCER DENTAL EFFECTS

Concept Codes:

- *10808 Enzymes-Physiological Studies
- *13002 Metabolism-General Metabolism; Metabolic Pathways
- *16006 Respiratory System-Pathology
- *18506 Integumentary System-Pathology
- *19006 Dental and Oral Biology-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37013 Public Health: Environmental Health-Occupational Health
 - 10010 Comparative Biochemistry, General
 - 10060 Biochemical Studies-General
 - 10064 Biochemical Studies-Proteins, Peptides and Amino Acids
 - 10506 Biophysics-Molecular Properties and Macromolecules
 - 16001 Respiratory System-General; Methods
 - 18501 Integumentary System-General; Methods
 - 19001 Dental and Oral Biology-General; Methods
 - 20501 Nervous System-General; Methods
 - 22100 Routes of Immunization, Infection and Therapy
 - 37054 Public Health: Epidemiology-Organic Diseases and Neoplasms

Biosystematic Codes:

R&S 002113

86215 Hominidae

86375 Muridae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human; Nonhuman Vertebrates;
Nonhuman Mammals; Rodents

4/5/33

0009087402 BIOSIS Number: 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

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN RAT GUINEA-PIG SENSATION LOSS PSYCHO PHYSIOLOGY
NEUROPATHY INDUSTRIAL SOLVENT

Concept Codes:

*20506 Nervous System-Pathology

*21002 Psychiatry-Psychopathology; Psychodynamics and Therapy

*22506 Toxicology-Environmental and Industrial Toxicology

07004 Behavioral Biology-Human Behavior

10060 Biochemical Studies-General

12503 Pathology, General and Miscellaneous-Comparative (1970-)

13002 Metabolism-General Metabolism; Metabolic Pathways

21003 Psychiatry-Psychophysiology

Biosystematic Codes:

86215 Hominidae

86300 Caviidae

86375 Muridae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human; Nonhuman Vertebrates;
Nonhuman Mammals; Rodents

4/5/34

0009055149 BIOSIS Number: 16055149

NEURO HUMORAL INTERRELATIONSHIPS IN PATIENTS WITH CHRONIC VINYL CHLORIDE
POISONING

GORYACHEVA L A; STULOVA E A

GIG TR PROF ZABOL (1). 1978 23-27 CODEN: GTPZA

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: NERVOUS PROBLEM HISTAMINE CATECHOLAMINE CALCIUM
POTASSIUM ION ACETYL CHOLINE CHOLIN ESTERASE SEROTONIN BLOOD

Concept Codes:

*20506 Nervous System-Pathology

*22501 Toxicology-General; Methods and Experimental

10006 Clinical Biochemistry; General Methods and Applications

10060 Biochemical Studies-General

10064 Biochemical Studies-Proteins, Peptides and Amino Acids

10069 Biochemical Studies-Minerals

10506 Biophysics-Molecular Properties and Macromolecules

10808 Enzymes-Physiological Studies

13002 Metabolism-General Metabolism; Metabolic Pathways

13010 Metabolism-Minerals

13012 Metabolism-Proteins, Peptides and Amino Acids

15002 Blood, Blood-Forming Organs and Body Fluids-Blood and Lymph

R&S 002114

Studies

22506 Toxicology-Environmental and Industrial Toxicology

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/35

0008240833 BIOSIS Number: 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

Subfile: BA (Biological Abstracts)

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 oxidization 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/Keywords: ANIMAL HUMAN BACTERIAL MUTAGENESIS CARCINOGEN LIVER
LUNG BRAIN TUMORS METABOLIC CONVERSION SUB CELLULAR ENZYME ACTIVITY
ENVIRONMENTAL EXPOSURE

Concept Codes:

- *10808 Enzymes-Physiological Studies
- *13002 Metabolism-General Metabolism; Metabolic Pathways
- *14006 Digestive System-Pathology
- *16006 Respiratory System-Pathology
- *20506 Nervous System-Pathology
- *22501 Toxicology-General; Methods and Experimental
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24006 Neoplasms and Neoplastic Agents-Biochemistry
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *31500 Genetics of Bacteria and Viruses
- *37015 Public Health: Environmental Health-Air, Water and Soil Pollution
- 01012 Methods, Materials and Apparatus, General-Photography
- 02506 Cytology and Cytochemistry-Animal
- 03508 Genetics and Cytogenetics-Human
- 05500 Social Biology; Human Ecology
- 06504 Radiation-Radiation and Isotope Techniques
- 10060 Biochemical Studies-General
- 10064 Biochemical Studies-Proteins, Peptides and Amino Acids
- 10069 Biochemical Studies-Minerals
- 11106 Anatomy and Histology, General and Comparative-Radiologic Anatomy

R&S 002115

12504 Pathology, General and Miscellaneous-Diagnostic
14001 Digestive System-General; Methods
14004 Digestive System-Physiology and Biochemistry
16001 Respiratory System-General; Methods
20501 Nervous System-General; Methods
24001 Neoplasms and Neoplastic Agents-Diagnostic Methods
32000 Microbiological Apparatus, Methods and Media

Biosystematic Codes:

06000 Bacteria-Unspecified (1969-78)
85700 Mammalia-Unspecified
86215 Hominidae

Super Taxa:

Microorganisms; Bacteria; Animals; Vertebrates; Nonhuman Vertebrates;
Mammals; Nonhuman Mammals; Primates; Human

4/5/36

0008219979 BIOSIS Number: 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. EPIDEMIOLOG., CENT. DIS.

CONTROL, ATLANTA, GA. 30333, USA.

TERATOLOGY 17 (2). 1978 137-142. CODEN: TJADA

Language: ENGLISH

Subfile: BA (Biological Abstracts)

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/Keywords: KANAWHA COUNTY WEST-VIRGINIA USA HUMAN

Concept Codes:

*07504 Ecology; Environmental Biology-Bioclimatology and Biometeorology
*20506 Nervous System-Pathology
*22506 Toxicology-Environmental and Industrial Toxicology
*25552 Developmental Biology-Embryology-Descriptive Teratology and Teratogenesis
*37015 Public Health: Environmental Health-Air, Water and Soil Pollution
10012 Biochemistry-Gases (1970-)
10060 Biochemical Studies-General
10602 External Effects-General
37013 Public Health: Environmental Health-Occupational Health

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/37

0008112991 BIOSIS Number: 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: 06398
Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN CHINESE HAMSTER CARCINOGEN OCCUPATIONAL EXPOSURE BRAIN RESPIRATORY LIVER BILIARY HEMATOPOIETIC CANCERS

Concept Codes:

- *14006 Digestive System-Pathology
- *15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- *15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- *16006 Respiratory System-Pathology
- *20506 Nervous System-Pathology
- *22501 Toxicology-General; Methods and Experimental
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms
- *37013 Public Health: Environmental Health-Occupational Health
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 37010 Public Health-Public Health Administration and Statistics

Biosystematic Codes:

- 86215 Hominidae
- 86310 Cricetidae

Super Taxa:

- Animals; Vertebrates; Mammals; Primates; Human; Nonhuman Vertebrates;
- Nonhuman Mammals; Rodents

4/5/38

0007108171 BIOSIS Number: 63003035

VINYLDENE CHLORIDE A REVIEW OF THE LITERATURE

HALEY T J

CLIN TOXICOL 8 (6). 1975 (RECD 1976) 633-643. CODEN: CTOXA

Subfile: BA (Biological Abstracts)

The literature concerning the chemistry, industrial hygiene, and toxicology of vinylidene chloride was reviewed. In contrast to vinyl chloride, which produces many toxicologic effects of an extremely debilitating nature, vinylidene chloride exerts its primary effects on the CNS, peripheral nervous system and particularly on the liver and kidneys. Studies were suggested which may result in an absolute clearance of vinylidene chloride as a potential carcinogen and assist in establishing therapeutic measures to counteract its other physiologic effects.

Descriptors/Keywords: HUMAN CENTRAL NERVOUS SYSTEM PERIPHERAL NERVOUS SYSTEM LIVER KIDNEY POTENTIAL CARCINOGEN INDUSTRIAL EXPOSURE

Concept Codes:

- *14006 Digestive System-Pathology
- *15506 Urinary System and External Secretions-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37013 Public Health: Environmental Health-Occupational Health
- 05500 Social Biology; Human Ecology

R&S 002117

10010 Comparative Biochemistry, General
10060 Biochemical Studies-General
12512 Pathology, General and Miscellaneous-Therapy (1971-)

Biosystematic Codes:

85700 Mammalia-Unspecified
86215 Hominidae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Primates; Human

4/5/39

0007099084 BIOSIS Number: 13099084

DISTRIBUTION AND ELIMINATION OF TIN TAKEN UP INTO THE ORGANISM IN THE
FORM OF ORGANO TIN COMPOUNDS

MAZAEV V T; TIKHONOVA Z I; SHLEPNINA T G

J HYG EPIDEMIOL MICROBIOL IMMUNOL (PRAGUE) 20 (4). 1976 (RECD 1977)

392-395 CODEN: JHEMA

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: RAT FOOD PRODUCTS POLY VINYL CHLORIDE STABILIZERS
LIVER KIDNEY MUSCLE BRAIN BONE

Concept Codes:

*13010 Metabolism-Minerals
*13502 Food Technology-General; Methods
*13530 Food Technology-Evaluations of Physical and Chemical Properties
(1970-)
*13532 Food Technology-Preparation, Processing and Storage (1970-)
*22502 Toxicology-Foods, Food Residues, Additives and Preservatives
10069 Biochemical Studies-Minerals
14004 Digestive System-Physiology and Biochemistry
15504 Urinary System and External Secretions-Physiology and Biochemistry
17504 Muscle-Physiology and Biochemistry
18004 Bones, Joints, Fasciae, Connective and Adipose Tissue-Physiology
and Biochemistry
20504 Nervous System-Physiology and Biochemistry

Biosystematic Codes:

86375 Muridae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Rodents

4/5/40

0007075913 BIOSIS Number: 13075913

A CROSS SECTIONAL SURVEY OF HEALTH EFFECTS ASSOCIATED WITH VINYL CHLORIDE

WAXWEILER R; FALK H; MCMICHAEL A J; HEATH C

AM J EPIDEMIOL 104 (3). 1976 347 CODEN: AJEPA

Document Type: CONFERENCE PAPER

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: ABSTRACT HUMAN OCCUPATIONAL HAZARD NERVOUS PATHOLOGY
LIVER DISEASE GENETIC EFFECTS CARDIO VASCULAR PATHOLOGY RESPIRATORY
PATHOLOGY

Concept Codes:

*03508 Genetics and Cytogenetics-Human
*14006 Digestive System-Pathology
*14506 Cardiovascular System-Heart Pathology
*14508 Cardiovascular System-Blood Vessel Pathology
*16006 Respiratory System-Pathology
*20506 Nervous System-Pathology

R&S 002118

*22506 Toxicology-Environmental and Industrial Toxicology
*37013 Public Health: Environmental Health-Occupational Health
*37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
02508 Cytology and Cytochemistry-Human
05500 Social Biology; Human Ecology
10060 Biochemical Studies-General

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/41

0007022974 BIOSIS Number: 13022974

CARCINOGENIC MUTAGENIC AND TERATOGENIC RISKS ASSOCIATED WITH VINYL CHLORIDE

INFANTE P F; WAGONER J K; WAXWEILER R J

MUTAT RES 41 (1). 1976 131-142 CODEN: MUREA

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN ANIMAL LIVER ANGIO SARCOMA BRAIN CENTRAL
NERVOUS SYSTEM RESPIRATORY LYMPHATIC HEMATOPOIETIC SYSTEM TUMORS
OCCUPATIONAL EXPOSURE

Concept Codes:

*03508 Genetics and Cytogenetics-Human
*14006 Digestive System-Pathology
*14508 Cardiovascular System-Blood Vessel Pathology
*15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and
Reticuloendothelial Pathologies
*15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and
Reticuloendothelial System
*20506 Nervous System-Pathology
*22501 Toxicology-General; Methods and Experimental
*22506 Toxicology-Environmental and Industrial Toxicology
*24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
*24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial
Neoplasms
*25552 Developmental Biology-Embryology-Descriptive Teratology and
Teratogenesis
*37013 Public Health: Environmental Health-Occupational Health
02506 Cytology and Cytochemistry-Animal
02508 Cytology and Cytochemistry-Human
03506 Genetics and Cytogenetics-Animal
05500 Social Biology; Human Ecology
10060 Biochemical Studies-General
18006 Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology
25503 Developmental Biology-Embryology-Pathological

Biosystematic Codes:

85700 Mammalia-Unspecified

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Primates; Human

4/5/42

0006146200 BIOSIS Number: 61046200

GASTRIC FUNCTION IN CHRONIC VINYL CHLORIDE POISONING

VAISMAN V D; STULOVA E A; GORYACHEVA L A; ZHDANEEVA G S

GIG TR PROF ZABOL (3). 1975 20-23. CODEN: GTPZA

Subfile: BA (Biological Abstracts)

R&S 002119

Descriptors/Keywords: HUMAN GASTRIC SECRETION ACETYL CHOLIN ESTERASE
NERVOUS SYSTEM HYPOTHALAMUS

Concept Codes:

- *14006 Digestive System-Pathology
- *17020 Endocrine System-Neuroendocrinology (1972-)
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *37013 Public Health: Environmental Health-Occupational Health
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 10064 Biochemical Studies-Proteins, Peptides and Amino Acids
- 10808 Enzymes-Physiological Studies
- 24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- 37015 Public Health: Environmental Health-Air, Water and Soil Pollution

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/43

0006072394 BIOSIS Number: 12072394

POLY VINYL CHLORIDE AND INDUSTRIAL PATHOLOGY

BOTTA A; MATHIAS A; POYEN D

ARCH MAL PROF MED TRAV SECUR SOC 36 (6). 1975 (RECD 1976) 368-369

CODEN: AMPMA

Document Type: CONFERENCE PAPER

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: ABSTRACT ENGLAND USA NERVOUS SYSTEM DEPRESSION
PERIPHERAL VASO MOTOR SYMPTOMS PORTAL FIBROSIS PORTAL HYPERTENSION
ARTERIAL HYPERTENSION CANCER ANGIO SARCOMA LIVER MAXIMUM LEVEL

Concept Codes:

- *13002 Metabolism-General Metabolism; Metabolic Pathways
- *14006 Digestive System-Pathology
- *14508 Cardiovascular System-Blood Vessel Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37010 Public Health-Public Health Administration and Statistics
- *37013 Public Health: Environmental Health-Occupational Health
- *37015 Public Health: Environmental Health-Air, Water and Soil Pollution
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 18006 Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/44

0006033140 BIOSIS Number: 12033140

PROPORTIONAL MORTALITY AMONG VINYL CHLORIDE WORKERS

MONSON R R; PETERS J M; JOHNSON M N

ENVIRON HEALTH PERSPECT 11. 1975 75-77 CODEN: EVHPA

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN CARCINOGEN DIGESTIVE LIVER LUNG BRAIN
HEMATOPOIETIC VASCULAR CANCERS

Concept Codes:

- *14006 Digestive System-Pathology
- *14508 Cardiovascular System-Blood Vessel Pathology
- *15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- *16006 Respiratory System-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms
- *37013 Public Health: Environmental Health-Occupational Health
- *37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 12510 Pathology, General and Miscellaneous-Necrosis (1971-)
- 15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- 37010 Public Health-Public Health Administration and Statistics

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/45

0005064638 BIOSIS Number: 11064638

MORTALITY STUDY OF WORKERS IN THE MANUFACTURE OF VINYL CHLORIDE AND ITS POLYMERS

TABERSHAW I R; GAFFEY W R

J OCCUP MED 16 (8).1974 509-518 CODEN: JOCMA

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: USA HUMAN RATS INHALATION LYMPHOMAS ANGIO SARCOMA HEM
ANGIO SARCOMA CANCER KIDNEY SKIN BRAIN DIGESTIVE TRACT RESPIRATORY SYSTEM

Concept Codes:

- *16001 Respiratory System-General; Methods
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms
- *37010 Public Health-Public Health Administration and Statistics
- *37013 Public Health: Environmental Health-Occupational Health
- *37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 12504 Pathology, General and Miscellaneous-Diagnostic
- 12510 Pathology, General and Miscellaneous-Necrosis (1971-)
- 14006 Digestive System-Pathology
- 14508 Cardiovascular System-Blood Vessel Pathology
- 15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- 15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- 15506 Urinary System and External Secretions-Pathology
- 16006 Respiratory System-Pathology
- 18506 Integumentary System-Pathology
- 20506 Nervous System-Pathology

Biosystematic Codes:

86215 Hominidae

R&S 002121

86375 Muridae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human; Nonhuman Vertebrates;
Nonhuman Mammals; Rodents

4/5/46

0005045002 BIOSIS Number: 11045002

B EPIDEMIOLOGICAL STUDIES MORTALITY EXPERIENCE OF A COHORT OF VINYL
CHLORIDE POLY VINYL CHLORIDE WORKERS

NICHOLSON W J; HAMMOND E C; SEIDMAN H; SELIKOFF I J

ANN N Y ACAD SCI 246. 1975 225-230 CODEN: ANYAA

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: USA EPIDEMIOLOGICAL STUDY CANCER LIVER LYMPHATIC
SYSTEM HEMATOPOIETIC SYSTEM BRAIN PANCREAS COLON BONE CIRRHOSIS CHOLE
LITHIASIS CARDIO VASCULAR DISEASE

Concept Codes:

- *14006 Digestive System-Pathology
- *14506 Cardiovascular System-Heart Pathology
- *14508 Cardiovascular System-Blood Vessel Pathology
- *15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- *15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- *18006 Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37010 Public Health-Public Health Administration and Statistics
- *37013 Public Health: Environmental Health-Occupational Health
- *37015 Public Health: Environmental Health-Air, Water and Soil Pollution
- *37054 Public Health: Epidemiology-Organic Diseases and Neoplasms
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 12510 Pathology, General and Miscellaneous-Necrosis (1971-)
- 24010 Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms

4/5/47

0005044996 BIOSIS Number: 11044996

EXPERIMENTAL ACUTE TOXICITY OF VINYL CHLORIDE MONO CHLORO ETHENE
PRODAN L; SUCIU I; PISLARU V; ILEA E; PASCU L

ANN N Y ACAD SCI 246. 1975 154-158 CODEN: ANYAA

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: MOUSE RAT GUINEA-PIG RABBIT HUMAN OCCUPATIONAL HAZARD
NARCOSIS MUSCULAR CONTRACTION CONVULSIONS RESPIRATORY DISTURBANCES
CIRCULATORY DISORDERS LUNG LIVER KIDNEY BRAIN SPLEEN

Concept Codes:

- *14006 Digestive System-Pathology
- *14508 Cardiovascular System-Blood Vessel Pathology
- *15006 Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pathologies
- *15008 Blood, Blood-Forming Organs and Body Fluids-Lymphatic Tissue and Reticuloendothelial System
- *15506 Urinary System and External Secretions-Pathology
- *16006 Respiratory System-Pathology
- *17506 Muscle-Pathology
- *20506 Nervous System-Pathology

R&S 002122

*22506 Toxicology-Environmental and Industrial Toxicology
*37013 Public Health: Environmental Health-Occupational Health
*37015 Public Health: Environmental Health-Air, Water and Soil Pollution
05500 Social Biology; Human Ecology
10060 Biochemical Studies-General
12100 Movement (1971-)

Biosystematic Codes:

86040 Leporidae
86215 Hominidae
86300 Caviidae
86375 Muridae

Super Taxa:

Animals; Vertebrates; Nonhuman Vertebrates; Mammals; Nonhuman Mammals;
Primates; Human; Rodents

4/5/48

0005044987 BIOSIS Number: 11044987

CLINICAL MANIFESTATIONS IN VINYL CHLORIDE POISONING

SUCIU I; PRODAN L; ILEA E; PADURARU A; PASCU L

ANN N Y ACAD SCI 246. 1975 53-69 CODEN: ANYAA

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN WORKERS NERVOUS SYSTEM CARDIO VASCULAR SYSTEM
DIGESTIVE SYSTEM RESPIRATORY SYSTEM SKIN ENDOCRINE ALTERATIONS
PROPHYLAXIS THERAPY

Concept Codes:

*14006 Digestive System-Pathology
*14506 Cardiovascular System-Heart Pathology
*14508 Cardiovascular System-Blood Vessel Pathology
*16006 Respiratory System-Pathology
*17002 Endocrine System-General
*18506 Integumentary System-Pathology
*20506 Nervous System-Pathology
*22506 Toxicology-Environmental and Industrial Toxicology
*37013 Public Health: Environmental Health-Occupational Health
*37015 Public Health: Environmental Health-Air, Water and Soil Pollution
05500 Social Biology; Human Ecology
10060 Biochemical Studies-General
12512 Pathology, General and Miscellaneous-Therapy (1971-)
22505 Toxicology-Antidotes and Preventative Toxicology (1972-)

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/49

0005012891 BIOSIS Number: 11012891

PROPORTIONAL MORTALITY AMONG VINYL CHLORIDE WORKERS

MONSON R R; PETERS J M; JOHNSON M N

LANCET 2 (7877). 1974 397-398 CODEN: LANCA

Subfile: BARRM (Biological Abstracts/RRM)

Descriptors/Keywords: HUMAN CARCINOGEN LIVER BILIARY LUNG BRAIN CANCERS

Concept Codes:

*12510 Pathology, General and Miscellaneous-Necrosis (1971-)
*14006 Digestive System-Pathology
*16006 Respiratory System-Pathology
*20506 Nervous System-Pathology
*22506 Toxicology-Environmental and Industrial Toxicology

R&S 002123

10/23/89

Neurotoxicology of Vinyl Chloride

Page 36

- *24007 Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis
- *37013 Public Health: Environmental Health-Occupational Health
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 37010 Public Health-Public Health Administration and Statistics

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/50

0004123456 BIOSIS Number: 57023156

CHARACTERISTICS OF THE STATE OF THERMO REGULATION IN CHRONIC VINYL
CHLORIDE POISONING

STULOVA E A

GIG TR PROF ZABOL 17 (3). 1973 53-55. CODEN: GTPZA

Subfile: BA (Biological Abstracts)

Descriptors/Keywords: HUMAN OCCUPATIONAL EXPOSURE CIRCULATORY DISTURBANCE
VASCULAR SPASM HYPOTHALAMIC BRAIN STEM IMPAIRMENT

Concept Codes:

- *14508 Cardiovascular System-Blood Vessel Pathology
- *17506 Muscle-Pathology
- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *23007 Temperature: Its Measurement, Effects and Regulation-Thermopathology (1971-)
- *23012 Temperature: Its Measurement, Effects and Regulation-Thermoregulation
- *37013 Public Health: Environmental Health-Occupational Health
- 05500 Social Biology; Human Ecology
- 10060 Biochemical Studies-General
- 11318 Chordate Body Regions-Extremities (1970-)
- 12100 Movement (1971-)
- 12504 Pathology, General and Miscellaneous-Diagnostic
- 23006 Temperature: Its Measurement, Effects and Regulation-Hypothermia, Hyperthermia

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

4/5/51

0001136328 BIOSIS Number: 52046328

LONG-TERM SIDE EFFECTS OF ACUTE OCCUPATIONAL POISONING BY CERTAIN HYDRO
CARBONS AND THEIR DERIVATIVES

SMIRNOVA N A; GRANIK N P

GIG TR PROF ZABOL 14 (5). 1970 50-51. CODEN: GTPZA

Subfile: BA (Biological Abstracts)

Descriptors/Keywords: HUMAN OLEFINS BENZYL METHYLENE CHLORIDE VINYL
CHLORIDE DI CHLORO ETHANE TRI CHLORO ETHYLENE CHLORO BENZENE TETRA CHLORO
ETHANE POLY CHLORO BUTANE NERVOUS DISORDERS

Concept Codes:

- *20506 Nervous System-Pathology
- *22506 Toxicology-Environmental and Industrial Toxicology
- *37013 Public Health: Environmental Health-Occupational Health
- 10060 Biochemical Studies-General
- 12508 Pathology, General and Miscellaneous-Inflammation and Inflammatory

Disease

Biosystematic Codes:

86215 Hominidae

Super Taxa:

Animals; Vertebrates; Mammals; Primates; Human

R&S 002125

File 155:MEDLINE 66-89/DEC (891201)

FILE 155 IS NOW BEING UPDATED TWICE A MONTH

8/5/1

07037246 89339246

[Various approaches to the study of the late effects of occupational diseases]

O nekotorykh podkhodakh k izucheniiu otdalennykh posledstvi
professional'nykh zabolevani.

Penknovich AA; Kaliaganov PI

Gig Tr Prof Zabol (USSR) 1989, (5) p43-4, ISSN 0016-9919

Journal Code: FQ9

Languages: RUSSIAN

Journal Announcement: 8911

Subfile: INDEX MEDICUS

Tags: Female; Human; Male

Descriptors: *Chemical Industry; *Methylmethacrylates--Poisoning--PO;
*Occupational Diseases--Chemically Induced--CI; *Vinyl Chloride--Poisoning
--PO; *Vinyl Compounds--Poisoning--PO; Cardiovascular Diseases--Chemically
Induced--CI; Cardiovascular Diseases--Diagnosis--DI; Cardiovascular
Diseases--Mortality--MO; Chronic Disease; Gastritis--Chemically Induced--CI
; Gastritis--Diagnosis--DI; Nervous System Diseases--Chemically Induced
--CI; Nervous System Diseases--Diagnosis--DI; Occupational Diseases
--Diagnosis--DI; Occupational Diseases--Mortality--MO; Russian S.F.S.R.;
Time Factors

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/2

06977490 89279490

Cohort and case-control analyses of workers exposed to vinyl chloride: an update.

Wu WA; Steenland K; Brown D; Wells V; Jones J; Schulte P; Halperin W

Institute of Occupational Medicine, Chinese Academy of Preventive Medicine.

J Occup Med (UNITED STATES) Jun 1989, 31 (6) p518-23, ISSN 0096-1736

Journal Code: JFR

Languages: ENGLISH

Journal Announcement: 8909

Subfile: INDEX MEDICUS

The mortality in a cohort of workers at a vinyl chloride polymerization plant has been updated, extending the period of observation in the original study from 1974 to 1986. Workers at this plant may have been exposed to vinyl chloride monomer and/or polyvinyl chloride dust, or may have had no exposure to either substance. Seventy-six percent of the work force worked in jobs with potential exposure to vinyl chloride monomer. Among the total cohort, statistically significant excess risks were observed for liver, lung, and brain cancer. For the subcohort of workers exposed to vinyl chloride monomer, the standardized mortality ratio (SMR) for liver cancer was 333 (90% confidence interval (CI) 202 to 521). However, there were no significant excesses of either brain (SMR = 145, 90% CI 78 to 249) or lung cancer (SMR = 115, 90% CI 96 to 141). To investigate dose response, nested case-control studies for liver, brain, and lung cancer were conducted among the total cohort (including the nonexposed). For these studies there were two exposure variables, cumulative dose of vinyl chloride monomer and cumulative dose of polyvinyl chloride dust. Cumulative dose was defined as the product of level and duration of exposure. The only significant association between disease risk and cumulative dose was for liver cancer and cumulative dose of vinyl chloride monomer. Further division of the

R&S 002126

liver cancers into angiosarcoma (n = 12) and other liver cancers (n = 7), based on review of death certificates and medical records, showed that the dose response existed only for angiosarcomas.

Tags: Female; Human; Male

Descriptors: *Neoplasms--Mortality--MO; *Occupational Diseases--Mortality--MO; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Brain Neoplasms--Chemically Induced--CI; Brain Neoplasms--Mortality--MO; Butadienes--Adverse Effects--AE; Cohort Studies; Environmental Exposure; Liver Neoplasms--Chemically Induced--CI; Liver Neoplasms--Mortality--MO; Lung Neoplasms--Chemically Induced--CI; Lung Neoplasms--Mortality--MO; Neoplasms--Chemically Induced--CI; Occupational Diseases--Chemically Induced--CI; Polyvinyl Chloride--Adverse Effects--AE; Retrospective Studies

CAS Registry No.: 75-01-4 (Vinyl Chloride); 9002-86-2 (Polyvinyl Chloride)

8/5/3

06960484 89262484

[Effect of vinyl chloride and its polymers on the nervous system]

WpLyw chlorku winylu i jego polimerow na ukLad nerwowy.

Kurzbauer H

Iastytutu Medycyny Pracy w Przemysle Weglowym i Hutniczym w Sosnowcu.

Neurol Neurochir Pol (POLAND) Sep-Oct 1988, 22 (5) p404-9, ISSN 0028-3843 Journal Code: NYF

Languages: POLISH Summary Languages: ENGLISH

Document Type: English Abstract

Journal Announcement: 8909

Subfile: INDEX MEDICUS

The study was undertaken for assessment of the effect of vinyl chloride and its polymers on the nervous system. A group of 200 patients working in the production of VC were studied. The group comprised 155 men and 45 women aged 19-46 years (mean 40). The duration of employment was over 5 years in most workers (85.5%), and 26% worked over 20 years (mean duration 14 years). On the basis of neurological examinations clinical groups were isolated: without neurological changes (58 workers), with symptoms (54), with organic signs (88). The studied groups were not different with respect to age. The shortest duration of employment was in workers without neurological abnormalities. In the complex of symptoms tension headaches, irritability and sleep disturbances prevailed. Organic signs manifested themselves most frequently with pyramidal abnormalities (52), cerebellar (40), sensory trigeminal nerve involvement (24) and pyramidal-cerebellar syndromes (26). In the group of workers with evidence of organic nervous system lesions significantly more frequently a history of acute poisonings, Raynaud's syndrome and hepatic involvement were found. The neurotic symptoms with minor pyramidal-cerebellar signs and sensory trigeminal neuropathy may be related aetiologically to the toxic effect of vinyl chloride.

Tags: Female; Human; Male

Descriptors: *Air Pollutants, Occupational--Adverse Effects--AE; *Chemical Industry; *Nervous System Diseases--Chemically Induced--CI; *Polyvinyl Chloride--Adverse Effects--AE; *Polyvinyls--Adverse Effects--AE; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Adult; Chronic Disease; Middle Age; Poland; Time Factors

CAS Registry No.: 75-01-4 (Vinyl Chloride); 9002-86-2 (Polyvinyl Chloride)

8/5/4

06622786 88267786

Carcinogenicity of vinyl chloride in Sprague-Dawley rats after prenatal

R&S 002127

and postnatal exposure.

Maltoni C; Cotti G

Institute of Oncology, F. Addarii, Bologna, Italy.

Ann N Y Acad Sci (UNITED STATES) 1988, 534 p145-59, ISSN 0077-8923

Journal Code: 5NM

Languages: ENGLISH

Journal Announcement: 8810

Subfile: INDEX MEDICUS

Vinyl chloride was administered by inhalation, 7 hours daily, 5 days weekly, at concentrations of 2500 and 0 ppm, to Sprague-Dawley rats. The treatment was started on 13-week-old breeders and male and female offspring (12-day embryos). The breeders and part of the offspring were exposed for 104 weeks; the other part of the offspring was exposed for 15 weeks only. Under the experimental conditions, vinyl chloride caused an exceptionally high incidence of brain neuroblastomas, liver angiosarcomas, and hepatocarcinomas. The age at start and/or length of treatment may affect the onset of these tumors in different ways.

Tags: Animal; Female; Male; Support, Non-U.S. Gov't

Descriptors: *Prenatal Exposure Delayed Effects; *Vinyl Chloride --Toxicity--TO; *Vinyl Compounds--Toxicity--TO; Administration, Inhalation; Biological Assay; Brain Neoplasms--Chemically Induced--CI; Hemangiosarcoma --Chemically Induced--CI; Liver Neoplasms--Chemically Induced--CI; Liver Neoplasms, Experimental--Chemically Induced--CI; Pregnancy; Rats; Rats, Inbred Strains; Vinyl Chloride--Administration and Dosage--AD

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/5

06489848 88134848

Increasing evidence of the rise of cancer in workers exposed to vinylchloride.

Smulevich VB; Fedotova IV; Filatova VS

All-Union Cancer Research Centre, AMS USSR, Moscow.

Br J Ind Med (ENGLAND) Feb 1988, 45 (2) p93-7, ISSN 0007-1072

Journal Code: AXS

Languages: ENGLISH

Journal Announcement: 8806

Subfile: INDEX MEDICUS

The results of a cancer mortality study among workers employed in the production of vinylchloride and polyvinylchloride between 1939 and 1977 suggest a significant increase in deaths from malignancies of the lymphatic and haemopoietic tissues. Mortality for tumours of the digestive organs, respiratory system, bone and connective tissues, brain, and skin are also greater than in the general population. There were no registered cases of liver angiosarcoma in the study cohort during the follow up period. The risk of cancer was highest among the workers exposed to concentrations of VC of 300 mg/m³ and more who had worked at the plant for 15 to 19 years. The relatively high number of leukaemias and lymphomas in the study group and the absence of liver angiosarcomas probably reflects specific carcinogenic action of different doses of vinylchloride.

Tags: Female; Human; Male

Descriptors: *Neoplasms--Chemically Induced--CI; *Occupational Diseases --Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Neoplasms--Mortality--MO; Occupational Diseases--Mortality--MO; Polyvinyl Chloride--Adverse Effects--AE; Sex Factors

CAS Registry No.: 75-01-4 (Vinyl Chloride); 9002-86-2 (Polyvinyl Chloride)

8/5/6

R&S 002128

06852466 89154466

Human male exposure to vinyl chloride and possible teratogenic and mutagenic risks: a review.

Uzych L

Hum Toxicol (ENGLAND) Nov 1988, 7 (6) p517-27, ISSN 0144-5952

Journal Code: GFR

Languages: ENGLISH

Document Type: Review

Journal Announcement: 8906

Subfile: INDEX MEDICUS

(32 Refs.)

Tags: Human; Male

Descriptors: *Chromosome Aberrations; *Sister Chromatid Exchange--Drug Effects--DE; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Abnormalities, Drug-Induced--Etiology--ET; Adult; Brain--Abnormalities--AB; Brain--Drug Effects--DE; Environmental Exposure; Middle Age; Review of Reported Cases; Spermatozoa--Drug Effects--DE

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/7

06189747 87163747

Vinyl chloride: an assessment of the risk of occupational exposure.

Purchase IF; Stafford J; Paddle GM

Food Chem Toxicol Feb 1987, 25 (2) p187-202, ISSN 0278-6915

Journal Code: F3U

Languages: ENGLISH

Document Type: Review

Journal Announcement: 8707

Subfile: INDEX MEDICUS

There is little doubt that exposure to high levels of VCM as a consequence of occupation can result in an increased incidence of ASL. A review of 20 epidemiological studies involving about 45,000 workers occupationally exposed to VCM showed that neoplasms of the liver showed an increase in incidence in the majority of studies. For brain cancer the association between exposure to VCM and an increased incidence was less clear because of the lower relative risk. Neoplasms of the respiratory tract, digestive system, lymphatic and haemopoietic system, buccal cavity, and pharynx, cardiovascular system and colon/stomach were reported to show an increased incidence in one or more studies, but to show no increase, or in some cases a decrease, in incidence in other studies. In view of the increased incidence of breast neoplasms in rodents exposed to VCM, the studies of Chaizze et al. (1980), who did not confirm these findings in humans, are of importance. The register of ASL cases now contains records of 99 persons with confirmed ASL and occupational exposure to VCM. The average latent period between first exposure to VCM and death from ASL is 21.9 years. The majority of cases occurred in autoclave workers, who are recognized as having been exposed to extremely high levels. Although precise estimates of exposure are not available for the periods of most interest, the pattern of cases roughly suggests that extremely high exposures were necessary for the induction of ASL. For example, ASL cases tended to occur in larger numbers in some plants than in others, a finding that can be explained most easily by differences in exposure patterns. There is an extensive series of animal studies on the carcinogenicity of VCM. Some of these precede the epidemiological studies confirming the association between VCM exposure and ASL in man. ASL and neoplasms of a number of other organs have been induced in laboratory rodents by VCM. Estimation of the exposure levels likely to cause a lifetime risk of ASL of 10(-6) on the basis of these data give extremely low levels (down to 3.9 X 10(-7) ppb) which appear to be unrealistic estimates for man. Part of the

reason for this is that laboratory studies have shown that VCM is metabolized in the liver (and elsewhere in the body) to the reactive metabolites chloroethylene oxide and chloroacetaldehyde. The rate of conversion is limited at high levels of exposure giving inaccurate estimates of the slope of the dose-response relationship. (ABSTRACT TRUNCATED AT 400 WORDS) (67 Refs.)

Tags: Animal; Female; Human; Male

Descriptors: *Air Pollutants, Occupational--Toxicity--TO; *Vinyl Chloride --Toxicity--TO; *Vinyl Compounds--Toxicity--TO; Dose-Response Relationship, Drug; Environmental Exposure; Hemangiosarcoma--Chemically Induced--CI; Kinetics; Liver Neoplasms--Chemically Induced--CI; Occupational Diseases --Chemically Induced--CI; Registries; Risk; Vinyl Chloride--Metabolism--ME
CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/8

05865134 86166134

Epidemiology of brain tumours in man and their relationship with chemical agents.

Jones RD

Food Chem Toxicol Feb 1986, 24 (2) p99-103, ISSN 0278-6915

Journal Code: F3U

Languages: ENGLISH

Journal Announcement: 8607

Subfile: INDEX MEDICUS

The 2000 or so deaths that result each year in England and Wales from brain tumours, as defined by ICD 191, represent approximately 0.3-0.4% of all deaths, with a slightly greater incidence in men than in women. Because of the low incidence of mortality from other causes in childhood, brain cancer accounts for 3.5% of all deaths in the 1-14-year age group. Mortality from brain cancer increased considerably between 1931 and 1961 but this is probably explained by changes in disease classification and improvements in diagnostic techniques. Because of the relatively low incidence of brain cancer in man, cohort studies need to be large in order to accrue sufficient cases for meaningful interpretation. Large cohort studies may run the risk of diluting a high-risk group of workers with lesser or non-exposed individuals. These considerations have encouraged the investigation of brain cancer by case-control studies and the interpretation of these must take into account possible sources of bias. At present the evidence for any chemical causation of brain cancer in man is inconclusive.

Tags: Female; Human; Male

Descriptors: *Brain Neoplasms--Epidemiology--EP; Acrylonitrile--Adverse Effects--AE; Adolescence; Adult; Aged; Brain Neoplasms--Chemically Induced --CI; Brain Neoplasms--Mortality--MO; Child; Child, Preschool; England; Epidemiologic Methods; Infant; Middle Age; Occupational Diseases --Epidemiology--EP; Petroleum; Rubber--Adverse Effects--AE; Sex Factors; Vinyl Chloride--Adverse Effects--AE; Wales

CAS Registry No.: 107-13-1 (Acrylonitrile); 75-01-4 (Vinyl Chloride); 9006-04-6 (Rubber)

8/5/9

06006173 86307173

Biological monitoring of chlorinated hydrocarbon solvents.

Monster AC

J Occup Med Aug 1986, 28 (8) p583-8, ISSN 0096-1736 Journal Code: JFR

Languages: ENGLISH

Journal Announcement: 8612

Subfile: INDEX MEDICUS

R&S 002130

The possibility of biological monitoring of exposure to some volatile, halogenated hydrocarbons will be discussed. Most of these agents are widely used as solvents. All agents act on the nervous system as narcotics and differ widely in toxicity. Most of the solvents undergo biotransformation to metabolites. This allows biological assessment of exposure by measurement of the solvent and/or metabolites in exhaled air, blood, and/or urine. However, the same metabolites may occur with exposure to different chlorinated hydrocarbons, eg, trichloroethanol and trichloroacetic acid from exposure to trichloroethene, tetrachloroethene, and 1,1,1-trichloroethane. On the other hand, these agents differ widely in the percentage that is metabolized. There are large gaps in our knowledge, however, and much research will have to be carried out before even tentative data can be established for most of the solvents.

Tags: Human

Descriptors: *Environmental Pollutants--Analysis--AN; *Solvents--Analysis--AN; Environmental Exposure; Ethylene Dichlorides--Analysis--AN; Hydrocarbons, Chlorinated--Analysis--AN; Methyl Chloride--Analysis--AN; Methylene Chloride--Analysis--AN; Occupational Diseases--Chemically Induced--CI; Occupational Diseases--Prevention and Control--PC; Trichloroethanes--Analysis--AN; Trichloroethylene--Analysis--AN; Vinyl Chloride--Analysis--AN

CAS Registry No.: 107-06-2 (ethylene dichloride); 74-87-3 (Methyl Chloride); 75-01-4 (Vinyl Chloride); 75-09-2 (Methylene Chloride); 79-01-6 (Trichloroethylene)

8/5/10

05999579 86300579

Polyneuropathy in workers with long exposure to vinyl chloride. Electrophysiological study.

Perticoni GF; Abbritti G; Cantisani TA; Bondi L; Mauro L

Electromyogr Clin Neurophysiol Jan-Feb 1986, 26 (1) p41-7, ISSN 0301-150X Journal Code: EEN

Languages: ENGLISH

Journal Announcement: 8612

Subfile: INDEX MEDICUS

Tags: Human

Descriptors: *Electromyography; *Neural Transmission--Drug Effects--DE; *Occupational Diseases--Chemically Induced--CI; *Polyneuritis--Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Peripheral Nerves--Drug Effects--DE

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/11

05524897 85140897

[Hemangiosarcoma of the liver in workers of the PVC industry and other VC-induced diseases with angiologic-dermatologic, hepatologic, radiologic and neurologic symptoms]

Das Haemangiosarkom der Leber bei Arbeitern in der PVC-Industrie und andere VC-bedingte Erkrankungen mit angiologisch-dermatologischer, hepatologischer, radiologischer und neurologischer Symptomatik.

Halama J; Becker-Stone S; Halama JM

Radiologe Jan 1985, 25 (1) p22-9, ISSN 0033-832X Journal Code: QRL

Languages: GERMAN Summary Languages: ENGLISH

Document Type: English Abstract

Journal Announcement: 8506

Subfile: INDEX MEDICUS

Occupational diseases resulting from exposure to vinyl chloride (VC) include angiosarcoma of the liver and other neoplasms. Among workers exposed to VC we have found capillary abnormalities in the extremities,

R&S 002131

with scleroderma and Raynaud syndrome, acro-osteolysis, neurological and psychiatric diseases and chromosome abnormalities, as well as abnormal liver metabolism and haematological findings.

Tags: Case Report; Human; Male

Descriptors: *Hemangiosarcoma--Chemically Induced--CI; *Liver Neoplasms--Chemically Induced--CI; *Nervous System Diseases--Chemically Induced--CI; *Occupational Diseases--Chemically Induced--CI; *Polyvinyl Chloride--Adverse Effects--AE; *Polyvinyls--Adverse Effects--AE; *Skin Diseases--Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Adult; Chemical Industry; Hemangiosarcoma--Radiography--RA; Liver Neoplasms--Radiography--RA; Middle Age; Occupational Diseases--Radiography--RA; Organic Mental Disorders; Substance-Induced--Etiology--ET; Osteolysis--Chemically Induced--CI; Raynaud's Disease--Chemically Induced--CI; Risk; Scleroderma, Systemic--Chemically Induced--CI

CAS Registry No.: 75-01-4 (Vinyl Chloride); 9002-86-2 (Polyvinyl Chloride)

8/5/12

05812357 86113357

Electroencephalographic findings in workers exposed to benzene.

Kellerova V

J Hyg Epidemiol Microbiol Immunol 1985, 29 (4) p337-46, ISSN 0022-1732 Journal Code: IEV

Languages: ENGLISH

Journal Announcement: 8605

Subfile: INDEX MEDICUS

Preventive EEG examination was carried out in 40 workers significantly exposed to benzene. The EEG findings were compared with those of a control group of 48 healthy persons, a group of 110 workers significantly exposed to toluene and xylene and a group of 236 workers exposed to vinyl chloride. The individuals exposed to benzene exhibited 22.5% of abnormal and 45% threshold findings, the abnormalities being episodic, diffuse or a combination of the two. The effect of benzene entailed a frequent (32.5%) occurrence of a characteristic frequency lability. Sleep phenomena were found in a total of 60% cases (37.5% cases reached stage 1 B3 while 15% reached stage 2 according to Roth [14]). The rapid onset of deeper sleep stages (in 30% cases) is considered typical for benzene exposure. The photic driving response often had an extended frequency range (a total of 61.1%, to beta frequencies only in 30.55%, to both beta and theta frequencies also in 30.55% of cases). The different EEG features characteristic of the neurotoxic action of various types of organic solvents make possible a more efficient diagnostics of the effects of these chemicals on the CNS.

Tags: Female; Human; Male

Descriptors: *Air Pollutants, Occupational--Toxicity--TO; *Benzene--Toxicity--TO; *Brain--Drug Effects--DE; Adult; Electroencephalography; Middle Age; Sleep--Drug Effects--DE; Toluene--Toxicity--TO; Vinyl Chloride--Toxicity--TO; Xylenes--Toxicity--TO

CAS Registry No.: 108-88-3 (Toluene); 71-43-2 (Benzene); 75-01-4 (Vinyl Chloride)

8/5/13

05842889 86143889

Occupational exposure and brain tumors.

Moss AR

J Toxicol Environ Health 1985, 16 (5) p703-11, ISSN 0098-4108
Journal Code: KAA

Contract/Grant No.: 1 R01 OH 01557

Languages: ENGLISH

Journal Announcement: 8606

Subfile: INDEX MEDICUS

Epidemiological evidence of an occupational risk of brain cancer has been reported in four industries where chemical exposures are likely, most recently in a series of prospective studies in the petrochemical industry. However, only in the case of vinyl chloride exposure has an occupational central nervous system carcinogen been identified. This report reviews the convergence of epidemiological and laboratory evidence that established the occupational carcinogenicity of vinyl chloride, and discusses in detail the current evidence for an occupational risk of brain tumors in the petrochemical industry.

Tags: Animal; Female; Human; Male; Support, U.S. Gov't, P.H.S.

Descriptors: *Brain Neoplasms--Chemically Induced--CI; *Chemical Industry ; *Glioma--Chemically Induced--CI; *Occupational Diseases --Chemically Induced--CI; *Vinyl Chloride--Toxicity--TO; *Vinyl Compounds--Toxicity--TO ; Environmental Exposure

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/14

05271272 84195272

Carcinogenicity and epidemiological profile analysis of vinyl chloride and polyvinyl chloride.

Kalmaz EE; Kalmaz GD

Regul Toxicol Pharmacol Mar 1984, 4 (1) p13-27, ISSN 0273-2300

Journal Code: RBH

Languages: ENGLISH

Document Type: Review

Journal Announcement: 8408

Subfile: INDEX MEDICUS

The carcinogenicity of vinyl chloride and polyvinyl chloride (VC/PVC) is reviewed with specific attention to the gaps in knowledge for risk estimation and epidemiological presentation of the available data. Although experimental studies have demonstrated the carcinogenicity and mutagenicity of VC/PVC in general, the epidemiologic studies available for review do not include an assessment of carcinogenic risk among humans exposed to these chemicals. This conclusion is based on the observation that the majority of cohort studies reviewed lacked sufficient statistical power because of small sample sizes. Further, in epidemiological studies, individuals were not followed over an adequate period of time during which cancer could become clinically manifest. (81 Refs.)

Tags: Animal; Human

Descriptors: *Carcinogens, Environmental; *Polyvinyl Chloride--Toxicity --TO; *Polyvinyls--Toxicity--TO; *Vinyl Chloride--Toxicity--TO; *Vinyl Compounds--Toxicity--TO; Brain Neoplasms--Chemically Induced--CI; Breast Neoplasms--Mortality--MO; Chemistry; Epidemiologic Methods; Leukemia --Chemically Induced--CI; Liver Neoplasms--Chemically Induced--CI; Lung Neoplasms--Chemically Induced--CI; Mutagens; Occupational Diseases --Chemically Induced--CI; Occupational Diseases--Epidemiology--EP; Polyvinyl Chloride--Poisoning--PO; Reproduction--Drug Effects--DE; Teratogens; United States; Vinyl Chloride--Poisoning--PO

CAS Registry No.: 75-01-4 (Vinyl Chloride); 9002-86-2 (Polyvinyl Chloride)

8/5/15

05270194 84194194

Occupational hazards in the VC-PVC industry.

Nicholson WJ; Henneberger PK; Seidman H

Prog Clin Biol Res 1984, 141 p155-75, ISSN 0361-7742 Journal Code:

R&S 002133

P25

Languages: ENGLISH

Journal Announcement: 8408

Subfile: INDEX MEDICUS

Overall, the results of the analysis of 12 studies of VC production and polymerization workers demonstrate an enormously elevated risk of liver malignancies, the possibility of a twofold increased risk of brain and central nervous system tumors and perhaps, also, of malignancies of the lymphatic and hematopoietic system. However, the role of other agents cannot be excluded in the etiology of nonhepatic malignancies. Bronchogenic carcinoma does not appear to be increased from exposures to VC monomer, although a relationship to PVC dust was suggested in one study. These conclusions must be considered in light of limited data on workers followed more than 25 years from onset of exposure. Considering the numbers of observed and expected deaths in all studies, it would appear that the excess of malignancies at nonhepatic sites is less than the excess of liver tumors. Data presented elsewhere in this volume (Nicholson and Henneberger, 1983) suggest that exposure reductions in 1974 may have virtually eliminated the VC-associated risk of liver cancer if the current U.S. standard is met. To the extent that VC exposure is associated with other cancers, a similar risk reduction would be expected. Raynaud's phenomenon, acroosteolysis, scleroderma-like skin lesions, hepato- and splenomegaly with noncirrhotic hepatic fibrosis, and severe portal hypertension have been associated with past heavy exposures to VC. Evidence exists that the liver disease and portal hypertension may progress following cessation of exposure. However, all of the above syndromes were found largely in heavily exposed individuals. Their occurrence would be much less likely in workers exposed only to concentrations currently allowed. Pulmonary deficits, X-ray abnormalities, and, perhaps, lung cancer have been associated with VC/PVC exposure. Because of the possible contribution of PVC dust to these findings, engineering controls during polymer drying, bagging and usage are warranted.

Tags: Human

Descriptors: *Chemical Industry; *Occupational Diseases--Epidemiology--EP; *Polyvinyl Chloride--Poisoning--PO; *Polyvinyls--Poisoning--PO; *Vinyl Chloride--Poisoning--PO; *Vinyl Compounds--Poisoning--PO; Hepatitis, Toxic--Epidemiology--EP; Lung Neoplasms--Chemically Induced--CI; Lung Neoplasms--Epidemiology--EP; Neoplasms--Chemically Induced--CI; Neoplasms--Epidemiology--EP; Occupational Diseases--Chemically Induced--CI; Occupational Diseases--Mortality--MO

CAS Registry No.: 75-01-4 (Vinyl Chloride); 9002-86-2 (Polyvinyl Chloride)

8/5/16

05483044 85099044

Induction of single-strand breaks in DNA of mice after inhalation of vinyl chloride.

Wallis SA; Holmberg B

Cancer Lett Nov 1984, 25 (1) p13-8, ISSN 0304-3835 Journal Code: CMX

Languages: ENGLISH

Journal Announcement: 8505

Subfile: INDEX MEDICUS

Female mice were exposed to 500 ppm vinyl chloride (VC) for 6 h/day 5 days/week for 1-8 weeks. Groups of mice were killed at different times during this period. DNA damage, expressed as single-strand breaks (SSB), was studied in liver, kidneys, lungs, spleen and brain. The level of SSB increased in liver, kidneys, spleen and lungs with time of exposure and reached a plateau for kidneys and lungs after 80 and 120 h of exposure. In

spleen there was only a slight increase in the SSB, and in brain no detectable increase was found.

Tags: Animal; Female

Descriptors: *DNA, Single-Stranded--Metabolism--ME; *Vinyl Chloride
--Pharmacology--PD; *Vinyl Compounds--Pharmacology--PD; Brain--Drug Effects
--DE; Brain--Metabolism--ME; Environmental Exposure; Kidney--Drug Effects
--DE; Kidney--Metabolism--ME; Liver--Drug Effects--DE; Liver--Metabolism
--ME; Lung--Drug Effects--DE; Lung--Metabolism--ME; Mice; Mice, Inbred
Strains; Spleen--Drug Effects--DE; Spleen--Metabolism--ME; Time Factors
CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/17

04999982 83232982

[EEG tracings of workers exposed to vinyl chloride]

EEG obrazu pracovnik.ANG.u exponovanych vinylchloridu.

Kellerova V

Cesk Neurol Neurochir Mar 1983, 46 (2) p71-6, ISSN 0301-0597

Journal Code: CV6

Languages: CZECH Summary Languages: ENGLISH

Document Type: English Abstract

Journal Announcement: 8310

Subfile: INDEX MEDICUS

Tags: Female; Human; Male

Descriptors: *Central Nervous System Diseases--Chemically Induced--CI;
*Central Nervous System Diseases--Diagnosis--DI; *Electroencephalography;
*Occupational Diseases--Diagnosis--DI; *Vinyl Chloride--Adverse Effects--AE
; *Vinyl Compounds--Adverse Effects--AE; Adolescence; Adult; Middle Age;
Occupational Diseases--Chemically Induced--CI

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/18

05107064 84031064

Vinyl chloride disease-neurological disturbances.

Langauer-Lewowicka H; Kurzbaauer H; Byczkowska Z; Wocka-Marek T

Int Arch Occup Environ Health 1983, 52 (2) p151-7, ISSN 0340-0130

Journal Code: GPN

Languages: ENGLISH

Journal Announcement: 8402

Subfile: INDEX MEDICUS

In a plant producing vinyl chloride by the emulsion method 200 workers who were exposed to vinyl chloride for 1 to 25 yr (mean 14), 58 (i.e. 29%) were free of complaints and nervous disturbances. An astheno-autonomic syndrome was found in 54 (i.e. 27%) and in 88 (i.e. 44%) in combination with positive neurological findings, i.e. pyramidal syndromes (in 52), cerebellar disturbances (in 38), trigeminal neuropathy (in 24) and extrapyramidal symptoms (in 3), in various combinations - pyramidal + cerebellar in 12, trigeminal + pyramidal in 7, trigeminal + cerebellar in 5. Headaches (48%), nervousness (26%), decrease in physical strength (16%), loss of memory (14%), sleeping disturbances and somnolence were the most frequent complaints. Scleroderma-like skin changes were found in ten subjects, but only six of them had any neurological disturbances. Occupational exposure to vinyl chloride was lower in workers without neurological findings. Frequency of the arterial hypertension was the same in both groups, whereas acroparesthesias, Raynaud's syndrome, and increased gamma GTP serum activity were significantly more frequent in workers with neurological disturbances. Sixty-two per cent of the neurologically positive group and only 24% of the negative group reported euphoric or narcotic states after exposure. This probably indicates episodic exposures to high concentrations of vinyl chloride. This difference points to a

possibility that neurological disturbances may be related to short exposures to peak concentrations. The neurological injury may be both a direct neurotoxic effect of vinyl chloride and secondary to vascular disorders.

Tags: Female; Human; Male

Descriptors: *Nervous System Diseases--Chemically Induced--CI; *Occupational Diseases--Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Adult; Air Pollutants, Occupational--Analysis--AN; Alcoholism--Complications--CO; Blood Proteins--Metabolism--ME; Middle Age; Smoking; Trigeminal Nerve--Drug Effects--DE; Vinyl Chloride--Analysis--AN

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/19

05160522 84084522

Toxicity of vinyl chloride and poly(vinyl chloride): a critical review.

Wagoner JK

Environ Health Perspect Oct 1983, 52 p61-6, ISSN 0091-6765

Journal Code: EIO

Languages: ENGLISH

Document Type: Review

Journal Announcement: 8404

Subfile: INDEX MEDICUS

In 1974, vinyl chloride (VC) was first reported in the open scientific literature to induce angiosarcoma of the liver both in humans and in animals. Additional research has now demonstrated the carcinogenicity of VC to other organs and at lower concentrations. The target organs for VC now clearly include the liver, brain and the lung, and probably the lymphohematopoietic system. The evidence for a carcinogenic risk has been extended to jobs associated with poly(vinyl chloride) exposure. Cases of liver angiosarcoma have been reported among individuals employed in PVC fabrication facilities and an epidemiological study has demonstrated a significant association between exposure to PVC dust and the risk of lung cancer mortality. Cases of angiosarcoma of the liver also have been reported among individuals living in near proximity to vinyl chloride-poly(vinyl chloride) plants. An association between PVC dust and pneumoconiosis also has been demonstrated. On the basis of findings, prudent control of PVC dust in the industrial setting is indicated. (41 Refs.)

Tags: Human; Male

Descriptors: *Neoplasms--Chemically Induced--CI; *Occupational Diseases--Chemically Induced--CI; *Polyvinyl Chloride--Adverse Effects--AE; *Polyvinyls--Adverse Effects--AE; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Environmental Exposure; Hemangiosarcoma--Chemically Induced--CI; Liver Neoplasms--Chemically Induced--CI; Lung Neoplasms--Chemically Induced--CI; Middle Age; Pneumoconiosis--Etiology--ET

CAS Registry No.: 75-01-4 (Vinyl Chloride); 9002-86-2 (Polyvinyl Chloride)

8/5/20

04828963 83061963

[Chronic toxic encephalopathies]

Przewlekłe encefalopatie toksyczne.

Langauer-Lewowicka H

Med Pr 1982, 33 (1-3) p113-7, ISSN 0465-5893 Journal Code: MOJ

Languages: POLISH Summary Languages: ENGLISH

Document Type: English Abstract

Journal Announcement: 8303

R&S 002136

Subfile: INDEX MEDICUS

The aim of this report is to present the clinical picture of some chronic occupational encephalopathies and evolution of neurological disturbances. Of 177 diagnosed encephalopathies, 103 were induced by heavy metals (Mn, Hg, Pb) and 48 by organic solvents. Of 200 persons exposed to vinyl chloride, neurological signs were found in 26 cases. In manganose poisoning heavy encephalopathy with pyramidal and extrapyramidal disturbances proved to be progressive, in mercury chronic intoxication cerebellar symptoms and sensitive neuropathy were the most frequent. In some cases these neurological changes were either persistent or progressive or regressive. In chronic lead poisoning slight pyramidal and deliberative signs and sensitive polyneuropathy seemed to be the most typical. Chronic encephalopathy due to organic solvents was mostly subacute at the beginning, then a variety of clinical symptoms as well as partial or total regression were observed. Slight cerebellar signs and trigeminal sensitive neuropathy were the most frequent neurological findings in those exposed to vinyl chloride.

Tags: Human

Descriptors: *Basal Ganglia Diseases--Chemically Induced--CI; *Occupational Diseases--Chemically Induced--CI; *Polyneuritis--Chemically Induced--CI; Chronic Disease; Lead Poisoning--Diagnosis--DI; Manganese--Poisoning--PO; Mercury Poisoning--Diagnosis--DI; Solvents--Poisoning--PO; Vinyl Chloride--Poisoning--PO

CAS Registry No.: 7439-96-5 (Manganese); 75-01-4 (Vinyl Chloride)

8/5/21

04686201 82229201

Experimental contributions in identifying brain potential carcinogens in the petrochemical industry.

Maltoni C; Ciliberti A; Carretti D

Ann N Y Acad Sci 1982, 381 p216-49, ISSN 0077-8923 Journal Code: 5NM

Languages: ENGLISH

Journal Announcement: 8210

Subfile: INDEX MEDICUS

Tags: Animal; Female; Male

Descriptors: *Brain Neoplasms--Chemically Induced--CI; *Carcinogens; *Chemical Industry; *Occupational Diseases--Chemically Induced--CI; *Petroleum; Acrylonitrile; Dichloroethylenes; Ethylene Dichlorides; Neoplasms, Experimental--Chemically Induced--CI; Rats; Rats, Inbred Strains; Vinyl Chloride

CAS Registry No.: 107-13-1 (Acrylonitrile); 75-01-4 (Vinyl Chloride)

8/5/22

04985363 83218363

[Various aspects of the clinical and electroencephalographic studies in workers chronically exposed to vinyl chloride]

Niektore aspekty obrazu kliniczno--elektroencefalograficznego u pracowników nara. ANG. zonych na przewlekłe działanie chlorku winylu.

Sinczuk-Walczak H; GLuszcz M

Med Pr 1982, 33 (5-6) p349-54, ISSN 0465-5893 Journal Code: MOJ

Languages: POLISH Summary Languages: ENGLISH

Document Type: English Abstract

Journal Announcement: 8309

Subfile: INDEX MEDICUS

The paper presents evaluation of the nervous system and bioelectric functioning of the brain (EEG) in 114 workers aged 20-62, employed in significant exposure to vinyl chloride for 1-28 years, on average--7.5 +/- 4.0. Clinical symptoms of the nervous system occurred in form of

R&S 002137

peripheral--vegetative syndrome with accompanying vasomotor disturbances of Raynaud syndrome type EEG yielded 39 (34,2%) correct and 75 (65,8%) incorrect records. Among incorrect records most frequent (32.5%) were low-voltage and flat records; of this--those with fast spindled activity and frequent changes typical for reduced wakefulness. The nature of clinical symptoms and EEG disturbances may point to the contribution of hypothalamus in the pathomechanism of changes in those chronically exposed to vinyl chloride.

Tags: Human; Male

Descriptors: *Air Pollutants--Poisoning--PO; *Air Pollutants, Occupational--Poisoning--PO; *Brain--Physiopathology--PP; *Paresthesia--Chemically Induced--CI; *Raynaud's Disease--Chemically Induced--CI; *Vinyl Chloride--Poisoning--PO; *Vinyl Compounds--Poisoning--PO; Action Potentials--Drug Effects--DE; Adult; Arm--Innervation--IR; Electroencephalography; Leg--Innervation--IR; Middle Age; Time Factors

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/23

04522500 82065500

Power considerations in epidemiologic studies of vinyl chloride workers.

Beaumont JJ; Breslow NE

Am J Epidemiol Nov 1981, 114 (5) p725-34, ISSN 0002-9262

Journal Code: 3H3

Languages: ENGLISH

Document Type: Review

Journal Announcement: 8203

Subfile: INDEX MEDICUS

Nine retrospective mortality studies of workers exposed to vinyl chloride were reviewed to determine whether differences in their hypothesis testing results might be due to differences in statistical power. Where possible, the power of each study was calculated for cancer of the lung, brain and liver. When power was taken into consideration, the results for liver and brain cancer were found to be consistent with an etiologic role for vinyl chloride. For lung cancer, the data were not consistent with an etiologic role in that two studies with very high power yielded negative results. (16 Refs.)

Tags: Human

Descriptors: *Occupational Diseases--Chemically Induced--CI; *Statistics; *Vinyl Chloride--Poisoning--PO; *Vinyl Compounds--Poisoning--PO; Brain Neoplasms--Chemically Induced--CI; Brain Neoplasms--Mortality--MO; Epidemiologic Methods; Liver Neoplasms--Chemically Induced--CI; Liver Neoplasms--Mortality--MO; Lung Neoplasms--Chemically Induced--CI; Lung Neoplasms--Mortality--MO; Occupational Diseases--Mortality--MO; Retrospective Studies

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/24

04595643 82138643

Epidemiologic study of vinyl chloride workers: mortality through December 31, 1972.

Cooper WC

Environ Health Perspect Oct 1981, 41 p101-6, ISSN 0091-6765

Journal Code: E10

Languages: ENGLISH

Journal Announcement: 8207

Subfile: INDEX MEDICUS

A population of 10,173 men, employed in 37 plants, was identified as having worked for at least one year in jobs involving probable exposure to vinyl chloride monomer (VCM) prior to January 1, 1973. Of the 9677 men

whose vital status was determined, 707 were known to have died. For 699, death certificates were obtained. The standardized mortality ratio (SMR) for all causes was 89, that for all malignancies was 104. The only type of malignancy found in significant excess was in the category of malignant neoplasms of the brain and other parts of the nervous system; 12 deaths occurred where 5.9 were expected, for an adjusted SMR of 203. There were slight but inconclusive upward trends in all malignancies, and for malignancies of the respiratory tract, digestive tract, and central nervous system associated with reported levels of maximum exposure to VCM. When groups in whom less than 20 years had elapsed from the first exposure were compared with those with 20 or more elapsed years, and 25 or more elapsed years, no significantly different SMR's were detected for major primary sites of malignancy. Plans for an updated study of mortality, to include deaths in the period 1973-1979 are briefly discussed.

Tags: Human; Male; Support, Non-U.S. Gov't

Descriptors: *Neoplasms--Mortality--MO; *Occupational Diseases--Mortality--MO; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Brain Neoplasms--Chemically Induced--CI; Brain Neoplasms--Mortality--MO; Follow-Up Studies; Hemangiosarcoma--Chemically Induced--CI; Hemangiosarcoma--Mortality--MO; Liver Neoplasms--Chemically Induced--CI; Liver Neoplasms--Mortality--MO; Neoplasms--Chemically Induced--CI; Occupational Diseases--Chemically Induced--CI; Time Factors; United States CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/25

04599666 82142666

Malignant tumors after chronic exposure to vinyl chloride.

Emmerich KH; Norpoth K

J Cancer Res Clin Oncol 1981, 102 (1) p1-11, ISSN 0171-5216

Journal Code: HL5

Languages: ENGLISH

Journal Announcement: 8207

Subfile: INDEX MEDICUS

Correlations between exposure to vinyl chloride and the development of malignant tumors in the liver have been known since 1974 and have been confirmed by many an experimental investigation. Based on the evaluation of mortality statistics from nine different countries an increased incidence of malignant tumors of the lung, the gastrointestinal tract, and the central nervous system (CNS), and of malignant lymphomas is documented in connection with exposure to vinyl chloride. Statistically significant increases, however, are only found in the incidence of malignant liver tumors. Metabolism and toxicology of vinyl chloride are discussed in detail.

Tags: Animal; Female; Human; Male

Descriptors: *Neoplasms--Chemically Induced--CI; *Occupational Diseases--Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Chromosome Aberrations; Hamsters; Kinetics; Liver Neoplasms--Chemically Induced--CI; Mice; Rats; Rats, Inbred Strains; Vinyl Chloride--Metabolism--ME

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/26

04595675 82138675

Observations of the site-specific carcinogenicity of vinyl chloride to humans.

Infante PF

Environ Health Perspect Oct 1981, 41 p89-94, ISSN 0091-6765

Journal Code: EI0

Languages: ENGLISH

R&S 002139

Journal Announcement: 8207

Subfile: INDEX MEDICUS

A review of epidemiologic studies of workers exposed to vinyl chloride (VC) was conducted. Some of these studies comprised small cohorts and thus were insensitive in the evaluation of carcinogenic response for sites that do not demonstrate a high relative risk. Other larger studies used methodology and design that precluded an interpretation of the results. Such limitations were acknowledged by some authors. Use of restrictive disease rubrics also lead to the submerging of sites that would have demonstrated significant excesses. For example, some investigators analyzed data for liver cancer deaths with the broad category of digestive system cancer deaths, while others combined data for CNS cancer deaths with the broad category of "other and unspecified cancer," and most studies analyzed information for lymphatic and hematopoietic system cancer deaths with all data combined. Only four of eight studies reviewed could demonstrate a significant excess of liver cancer among VC-exposed workers--a site confirmed in humans by 1974. In contrast, five of eight studies appear to demonstrate a significant excess of CNS cancer mortality. Workers exposed to VC also demonstrate a significant excess of mortality for lung cancer, while the data for lymphatic and hematopoietic system cancer are suggestive. Interpretation of cancer of the latter systems may have been clarified if investigators had not analyzed their data by broad disease classifications.

Tags: Human; Support, U.S. Gov't, Non-P.H.S.

Descriptors: *Neoplasms--Chemically Induced--CI; *Occupational Diseases--Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Adenocarcinoma--Chemically Induced--CI; Brain Neoplasms--Chemically Induced--CI; Carcinoma--Chemically Induced--CI; Epidemiologic Methods; Hemangiosarcoma--Chemically Induced--CI; Leukemia--Chemically Induced--CI; Liver Neoplasms--Chemically Induced--CI; Lung Neoplasms--Chemically Induced--CI; Organ Specificity

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/27

04511075 82054075

Neurological changes in vinyl chloride-exposed workers.

Styblova V; Lambl V; Chumcal O; Kelleroval V; Paskova V; Vitovcova J; Zlab L

J Hyg Epidemiol Microbiol Immunol 1981, 25 (3) p233-43, ISSN 0022-1732 Journal Code: IEV

Languages: ENGLISH

Journal Announcement: 8203

Subfile: INDEX MEDICUS

Tags: Female; Human; Male

Descriptors: *Nervous System Diseases--Chemically Induced--CI; *Occupational Diseases--Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Adolescence; Adult; Electroencephalography; Middle Age; Nervous System Diseases--Diagnosis--DI; Occupational Diseases--Diagnosis--DI; Time Factors

CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/28

04420900 81248900

[Vinyl chloride toxicity after inhalation]

Toksycznosc chlorku winylu podawanego droga oddechowa.

Chyba A

Rocz Panstw Zakl Hig 1980, 31 (6) p615-21, ISSN 0035-7715

Journal Code: TXT

Languages: POLISH Summary Languages: ENGLISH

R&S 002140

10/23/89

Neurotoxicology of Vinyl Chloride

Page 53

Document Type: English Abstract
 Journal Announcement: 8111
 Subfile: INDEX MEDICUS
 Tags: Animal; Male
 Descriptors: *Air Pollutants--Toxicity--TO; *Air Pollutants, Environmental--Toxicity--TO; *Vinyl Chloride--Toxicity--TO; *Vinyl Compounds--Toxicity--TO; Aerosols; Blood Coagulation--Drug Effects--DE; Central Nervous System--Drug Effects--DE; Hypocalcemia--Chemically Induced--CI; Rats; Vinyl Chloride--Administration and Dosage--AD
 CAS Registry No.: 75-01-4 (Vinyl Chloride)

8/5/29

04291858 81119858

Toxicity of vinyl chloride and polyvinyl chloride as seen through epidemiologic observations.

Wagoner JK; Infante PF; Apfeldorf RB

J Toxicol Environ Health Sep-Nov 1980, 6 (5-6) p1101-7, ISSN 0098-4108 Journal Code: KAA

Languages: ENGLISH

Journal Announcement: 8106

Subfile: INDEX MEDICUS

In 1974, vinyl chloride (VC) was first reported in the scientific literature to induce angiosarcoma of the liver in animals and humans. Further research has now demonstrated the carcinogenicity of this agent to other organs. Target organs for VC now include the liver, brain, and lung, and probably the lymphohematopoietic system. The carcinogenic risk has been extended to jobs associated with polyvinyl chloride (PVC) exposure. This is evidenced by cases of liver angiosarcoma reported among individuals employed in or residing near PVC fabrication facilities and by epidemiologic study demonstrating a significant association between lung cancer and exposure to PVC dust. An association between PVC dust and pneumoconiosis has been demonstrated. On the basis of these findings, experimental bioassays and epidemiologic studies of the carcinogenicity of PVC are clearly in order. Prudent control of PVC in the industrial setting is also clearly indicated.

Tags: Human

Descriptors: *Polyvinyl Chloride--Toxicity--TO; *Polyvinyls--Toxicity--TO; *Vinyl Chloride--Toxicity--TO; *Vinyl Compounds--Toxicity--TO; Brain Neoplasms--Chemically Induced--CI; Epidemiologic Methods; Hemangiosarcoma--Chemically Induced--CI; Hepatitis, Toxic--Etiology--ET; Liver Neoplasms--Chemically Induced--CI; Lung Neoplasms--Chemically Induced--CI; Lymphatic Diseases--Chemically Induced--CI; Neoplasms--Chemically Induced--CI; Pneumoconiosis--Etiology--ET

CAS Registry No.: 75-01-4 (Vinyl Chloride); 9002-86-2 (Polyvinyl Chloride)

8/5/30

03965268 80076268

Vinyl chloride: a review.

Binns CH

J Soc Occup Med Oct 1979, 29 (4) p134-41, ISSN 0301-0023
 Journal Code: K5B

Languages: ENGLISH

Document Type: Review

Journal Announcement: 8004

Subfile: INDEX MEDICUS

(50 Refs.)

Tags: Animal; Female; Human; Male

Descriptors: *Occupational Diseases--Chemically Induced--CI; *Polyvinyl

Chloride--Poisoning--PO; *Polyvinyls--Poisoning--PO; *Vinyl Chloride
--Poisoning--PO; *Vinyl Compounds--Poisoning--PO; Abnormalities,
Drug-Induced; Brain Neoplasms--Chemically Induced--CI; Chromosome
Aberrations; Hemangiosarcoma--Chemically Induced--CI; Liver Cirrhosis
--Chemically Induced--CI; Liver Neoplasms--Chemically Induced--CI; Lung
Neoplasms--Chemically Induced--CI; Mice; Mutation--Drug Effects--DE;
Osteolysis--Chemically Induced--CI; Pneumoconiosis--Etiology--ET; Pregnancy

8/5/31

03971431 80082431

One-year time-sequence inhalation toxicity study of vinyl chloride in rats. II. Morphological changes in the respiratory tract, ceruminous glands, brain, kidneys, heart and spleen.

Feron VJ; Kroes R

Toxicology Jun-Jul 1979, 13 (2) p131-41, ISSN 0300-483X

Journal Code: VWR

Languages: ENGLISH

Journal Announcement: 8004

Subfile: INDEX MEDICUS

Tags: Animal; Female; Male

Descriptors: *Vinyl Chloride--Toxicity--TO; *Vinyl Compounds--Toxicity
--TO; Brain--Pathology--PA; Cerumen; Exocrine Glands--Pathology--PA; Kidney
--Pathology--PA; Myocardium--Pathology--PA; Neoplasms, Experimental
--Pathology--PA; Rats; Respiratory System--Pathology--PA; Sex Factors;
Spleen--Pathology--PA; Time Factors

8/5/32

03526211 78160211

Congenital central nervous system malformations and vinyl chloride monomer exposure: a community study.

Edmonds LD; Anderson CE; Flynt JW Jr; James LM

Teratology Apr 1978, 17 (2) p137-42, ISSN 0040-3709 Journal Code: VM8

Languages: ENGLISH

Journal Announcement: 7808

Subfile: INDEX MEDICUS

Incidence rates for central nervous system (CNS) malformations in infants born to residents of Kanawha County, West Virginia, 1970-1974, were significantly higher than comparable United States 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 this 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.

Tags: Female; Human; Male

Descriptors: *Abnormalities, Drug-Induced--Epidemiology--EP; *Central Nervous System--Abnormalities--AB; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Environmental Exposure; Infant, Newborn; West Virginia

8/5/33

03720327 79097327

[Rapid method of estimating the efficiency of the central nervous system in small laboratory animals in sanitary-toxicological studies]

Zastosowanie szybkiej metody oceny sprawności ośrodkowego układu nerwowego małych zwierząt laboratoryjnych w badaniach

R&S 002142

sanitarno-toksykologicznych.

Szulinski S

Rocz Panstw Zakl Hig 1978, 29 (6) p677-81, ISSN 0035-7715

Journal Code: TXT

Languages: POLISH Summary Languages: ENGLISH

Document Type: English Abstract

Journal Announcement: 7905

Subfile: INDEX MEDICUS

Tags: Animal

Descriptors: *Animals, Laboratory; *Brain--Drug Effects--DE;
*Conditioning, Classical--Drug Effects--DE; Benzene Hexachloride--Toxicity
--TO; Rats; Trichlorfon--Toxicity--TO; Vinyl Chloride--Toxicity--TO

8/5/34

03848993 79225993

Health effects of vinyl chloride.

Tamburro CH

Tex Rep Biol Med 1978, 37 p126-44, 146-51, ISSN 0040-4675

Journal Code: VNN

Languages: ENGLISH

Journal Announcement: 7911

Subfile: INDEX MEDICUS

Vinyl chloride is a basic chemical for plastics manufacturing and has been used as an anesthetic agent. Vinyl chloride's previously unknown carcinogenic capability appears to be related to the body's ability to convert it from a non-toxic or minimally toxic chemical to a toxic and, with prolonged exposure, cancer-forming agent. Early exposure in animals causes body cells to make adaptive changes which may prepare them for malignant transformation and appear to precede evidence of morphological injury. These findings appear to occur before a low-grade chemical injury occurs. Vinyl chloride chemical injury in man appears to follow the same pattern. Present clinical data in humans now demonstrate evidence of pre-cancer injury and cancer transformation of various types of cells in different organs of the body. Manifestations of pre-cancerous injury to organs other than the liver (such as the lung, heart, spleen, brain and lymphatic system) may also be occurring and require further investigation. Early detection of these pre-cancerous chemical injuries requires a prospective ongoing system of surveillance and the development of diagnostic methods which can identify specific causal agents in the presence of non-specific injury. Such a systematic approach has been developed and is now in operation. Its initial achievements appear to be the foundation for future success in controlling the health effects of industrial chemicals.

Tags: Animal; Human; Support, U.S. Gov't, P.H.S.

Descriptors: *Carcinogens, Environmental; *Hemangiosarcoma--Chemically Induced--CI; *Liver -- Neoplasms--Chemically Induced--CI; *Occupational Diseases--Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Environmental Exposure; Health Education; Lung--Drug Effects--DE; Neoplasms, Experimental --Chemically Induced--CI; Rats; Risk; Spleen--Drug Effects--DE; Vinyl Chloride --Metabolism--ME

8/5/35

03537051 78171051

[The vinyl-chloride disease]

Die Vinylchloridkrankheit.

Veltman G; Lange CE; Stein G

Hautarzt Apr 1978, 29 (4) p177-82, ISSN 0017-8470 Journal Code: G13

Languages: GERMAN Summary Languages: ENGLISH

R&S 002143

Document Type: English Abstract; Review

Journal Announcement: 7809

Subfile: INDEX MEDICUS

Workers engaged in the PVC-production, who were long-term exposed to the gaseous base vinyl chloride exhibit a complex pattern of damages. Changes of the skin, vascular and bone system, as well as thrombocytopenia, liver fibrosis with portal hypertension, disturbances of the porphyrin metabolism and alterations of the central nervous system were observed. Moreover vinyl chloride is oncogenic and may cause angiosarcoma of the liver. By directed occupational medicine supervision, improvement of the production conditions and introduction of new processing techniques health risks at the workplace could be eliminated to a far extend. (35 Refs.)

Tags: Human

Descriptors: *Occupational Diseases--Chemically Induced--CI; *Scleroderma, Systemic--Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Hemangiosarcoma--Chemically Induced--CI; Liver Cirrhosis--Chemically Induced--CI; Liver Neoplasms--Chemically Induced--CI; Osteolysis--Chemically Induced--CI; Raynaud's Disease--Chemically Induced--CI

8/5/36

03261357 77163357

[Vinyl chloride hazard through its dietary entry into the human body]

Ob opasnosti vinilkhlorida pri alimentarnom postuplenii v organizm cheloveka

Bykhovskii AV; Diubankova EN

Gig Sanit Mar 1977, (3) p70-4, ISSN 0016-9900 Journal Code: FPZ

Languages: RUSSIAN

Journal Announcement: 7708

Subfile: INDEX MEDICUS

Tags: Human

Descriptors: *Food Contamination; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Adult; Aged; Environmental Exposure; Food Preservation--Adverse Effects--AE; Hemangiosarcoma--Chemically Induced--CI; Liver Neoplasms--Chemically Induced--CI; Maximum Permissible Exposure Level; Middle Age; Nervous System--Drug Effects--DE; Occupational Diseases--Chemically Induced--CI; Plastics--Adverse Effects--AE; United States; United States Food and Drug Administration; USSR; Vinyl Chloride--Standards--ST; Volatilization

8/5/37

03048880 76229880

Vinyl chloride-associated liver disease.

Berk PD; Martin JF; Young RS; Creech J; Selikoff IJ; Falk H; Watanabe P; Popper H; Thomas L

Ann Intern Med Jun 1976, 84 (6) p717-31, ISSN 0003-4819

Journal Code: 5A6

Languages: ENGLISH

Journal Announcement: 7610

Subfile: AIM; INDEX MEDICUS

Although polyvinyl chloride has been produced from vinyl chloride monomer for more than 40 years, recognition of toxicity among vinyl chloride polymerization workers is more recent. In the mid 1960s, workers involved in cleaning polymerization tanks were found to have acro-osteolysis. In 1974, the same population of workers was found to be at risk for an unusual type of hepatic fibrosis and angiosarcoma of the liver. We describe two cases of vinyl chloride-associated liver injury, one of hepatic fibrosis and one of angiosarcoma. Histologic features of these lesions are similar to the hepatic fibrosis and angiosarcomas resulting from chronic exposure

R&S 002144

to inorganic arsenicals. Preliminary studies suggest that the toxicity of vinyl chloride may result from formation, during high-dose exposure, of active metabolites by mixed function oxidases of the liver. Epidemiologic studies indicate an increased incidence not only of liver disease, but also of cancers of the brain, lung, and possibly other organs.

Tags: Animal; Case Report; Human; Male

Descriptors: *Liver Diseases--Chemically Induced--CI; *Occupational Diseases--Chemically Induced--CI; *Vinyl Chloride--Adverse Effects--AE; *Vinyl Compounds--Adverse Effects--AE; Adult; Arsenicals--Adverse Effects--AE; Epidemiologic Methods; Hemangiosarcoma--Chemically Induced--CI; Hemangiosarcoma--Pathology--PA; Liver Cirrhosis--Chemically Induced--CI; Liver Cirrhosis--Pathology--PA; Liver Diseases--Diagnosis--DI; Liver Function Tests; Liver Neoplasms--Chemically Induced--CI; Liver Neoplasms--Pathology--PA; Polymers; Radionuclide Imaging; Rats; Thorium Dioxide--Adverse Effects--AE; Time Factors; Vinyl Chloride--Metabolism--ME

8/5/38

03198083 77100083

Carcinogenic, mutagenic and teratogenic risks associated with vinyl chloride.

Infante PF; Wagoner JK; Waxweiler RJ

Mutat Res Nov 1 1976, 41 (1 spel. no) p131-41, ISSN 0027-5107

Journal Code: NNA

Languages: ENGLISH

Journal Announcement: 7705

Subfile: INDEX MEDICUS

The data presented demonstrate clearly that vinyl chloride (VC) is related to a significant excess of mortality from cancer of the liver, lung and brain among workers occupationally exposed to VC. The risk of dying from cancer of the lymphatic and hematopoietic system also appears to increase with an increase in latency. These cancer sites could have been predicted by the animal bioassay conducted by Maltoni. With regard to the liver, even the histopathologic type of cancer (angiosarcoma) was observed first in experimental animals. A study of cancer mortality among populations residing proximate to VC polymerization facilities also demonstrated an increased risk of dying from CNS and lymphatic cancer. These latter findings raise cause for concern about out-plant emissions of VC, but without further study these cancers obviously cannot be interpreted as being related to out-plant exposure to VC. Various test systems now have elicited a positive mutagenic response to VC. Thus, our observations of a significant excess of fetal mortality among the wives of males, who were occupationally exposed to VC, raise public health concern that VC may be mutagenic in humans. With regard to the teratogenicity of VC, observations of a significant excess of children born with birth defects were reported among populations residing proximate to VC polymerization facilities. Additional epidemiologic study is needed to determine whether a repeated pattern of excessive numbers of children born with birth defects can be observed in other communities with VC polymerization facilities.

Tags: Female; Human; Male

Descriptors: *Carcinogens; *Mutagens; *Occupational Diseases--Chemically Induced--CI; *Teratogens; *Vinyl Chloride--Toxicity--TO; *Vinyl Compounds--Toxicity--TO; Abnormalities, Multiple--Epidemiology--EP; Environmental Exposure; Fetal Death; Ohio; Paternal Age; Pregnancy; Risk

8/5/39

02737903 75144903

Clinical manifestations in vinyl chloride poisoning.

Suciu I; Prodan L; Ilea E; Paduraru A; Pascu L

Ann N Y Acad Sci Jan 31 1975, 246 p53-69, ISSN 0077-8923

Journal Code: 5NM

Languages: ENGLISH

Journal Announcement: 7508

Subfile: INDEX MEDICUS

Tags: Human; Male

Descriptors: *Occupational Diseases--Etiology--ET; *Vinyl Chloride
--Poisoning--PO; *Vinyl Compounds--Poisoning--PO; Adult; Digestion--Drug
Effects--DE; Endocrine Diseases--Chemically Induced--CI; Hypertension
--Chemically Induced--CI; Middle Age; Nervous System Diseases--Chemically
Induced--CI; Poisoning--Prevention and Control--PC; Raynaud's Disease
--Chemically Induced--CI; Respiratory Tract Diseases--Chemically Induced
--CI; Skin Diseases--Chemically Induced--CI; Vinyl Chloride--Blood--BL;
Vinyl Compounds--Pharmacology--PD
?ds

Set	Items	Description
S1	382	RN=75-01-4 (VINYL CHLORIDE)
S2	554	"VINYL CHLORIDE --ADVERSE EFFECTS --AE" OR "VINYL CHLORIDE -- -POISONING --PO" OR "VINYL CHLORIDE --TOXICITY --TO"
S3	398423	NEUROPATHY? OR EVOKED()POTENTIAL? OR ELECTROPHYSIOL? OR NEUR- OPHYSIOL? OR NERVOUS? OR NERVES? OR CNS OR BRAIN OR NEUROTOX?
S4	29	S1 AND S3
S5	36	S2 AND S3
S6	3	S4 NOT S5
S7	39	S4 OR S5
S8	39	Sort S7/ALL/PY D,AU

YOU ARE NOW CONNECTED TO THE TOXLINE (1981 FORWARD, NON-ROYALTY) FILE.

PROG:

SS (13) PSTG (118)

1

AU - Penknovich AA ; Kaliaganov PI
SO - Gig Tr Prof Zabol, ISS 5, 1989, P43-4
TI - [Various approaches to the study of the late effects of occupational diseases]
KW - TOXBIB ; Cardiovascular Diseases CHEMICALLY INDUCED/DIAGNOSIS/MORTALITY ; Chemical Industry * ; Chronic Disease ; Female ; Gastritis CHEMICALLY INDUCED/DIAGNOSIS ; Human ; Male ; Methylmethacrylates *POISONING ; Nervous System Diseases CHEMICALLY INDUCED/DIAGNOSIS ; Occupational Diseases *CHEMICALLY INDUCED/DIAGNOSIS/MORTALITY ; Russian S.F.S.R. ; Time Factors ; Vinyl Chloride *POISONING ; Vinyl Compounds *POISONING
RN - 75-01-4

2

AU - ANTONYUZHENKO VA
SO - GIG TR PROF ZABOL; 0 (2). 1989. 39-41.
TI - LATE SEQUELAE OF OCCUPATIONAL VINYL CHLORIDE POISONING
AB - BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN NERVOUS SYSTEM PATHOLOGY DISTAL HYPALGESIA ACROHYPERHYDROSIS ACROHYPOTHERMIA ACROSPASTIC REACTION OSTEOLYSIS OSTEOSCLEROSIS OCCUPATIONAL HEALTH OCCUPATIONAL TOXICOLOGY
KW - Biochemical Studies-General ; Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology ; Nervous System-Pathology ; Toxicology-Environmental and Industrial Toxicology ; Temperature: Its Measurement, Effects and Regulation-Hypothermia, Hyperthermia ; Temperature: Its Measurement, Effects and Regulation-Thermoregulation ; Public Health: Environmental Health-Occupational Health ; Hominidae
RN - 75-01-4

3

AU - HOLMBERG B ; LUNDBERG P
SO - AM J IND MED; 15 (6). 1989. 615-626.
AD - Dep. Toxicol., Natl. Inst. Occupational Health, S-171 84 Solna, Sweden.
TI - Assessment and management of occupational risks in the Nordic (Scandinavian) countries.
AB - BIOSIS COPYRIGHT: BIOL ABS. Occupational health standards in the Scandinavian countries are of national concern and may thus vary from country to country. There is an internordic collaboration in the scientific criteria work, but there are also national formal procedures for standard setting. There is a greater tendency to accept eye, nose, or throat irritations as indices of harm than the American Conference of Governmental Industrial Hygienists (ACGIH) does. For organic solvents, neurotoxicity has been focused on for many years. although the differences between values in the ACGIH list and in the Nordic countries have diminished. Occupational standard setting in the Nordic countries is much influenced by technological feasibility and socioeconomic criteria. Sweden has a formalized procedure for the underlying scientific and transscientific assessments.

R&S 002147

- KW - Social Biology; Human Ecology ; Biochemical Studies-General ; Nervous System-Pathology ; Toxicology-Environmental and Industrial Toxicology ; Public Health: Environmental Health-Occupational Health ; Hominidae
- RN - 26471-62-5; 17804-35-2; 16887-00-6; 10102-44-0; 10043-35-3; 10028-15-6; 10024-97-2; 8032-32-4; 7783-06-4; 7664-41-7; 7664-39-3; 7446-09-5; 7440-50-8; 7440-48-4; 7440-47-3; 7440-41-7; 7440-38-2; 7440-02-0; 7439-98-7; 7439-97-6; 7439-92-1; 7429-90-5; 3457-90-7; 1338-23-4; 1332-21-4; 1330-20-7; 1320-67-8; 1314-34-7; 628-63-7; 302-01-2; 151-67-7; 141-79-7; 127-18-4; 126-99-8; 124-18-5; 123-91-1; 123-86-4; 121-44-8; 120-92-3; 117-81-7; 111-40-0; 110-91-8; 110-85-0; 110-82-7; 110-80-5; 110-54-3; 109-89-7; 109-86-4; 108-95-2; 108-94-1; 108-88-3; 108-03-2; 107-21-1; 107-18-6; 107-13-1; 107-06-2; 106-99-0; 106-89-8; 100-97-0; 100-42-5; 100-41-4; 98-01-1; 98-00-0; 96-12-8; 87-86-5; 79-46-9; 79-41-4; 79-10-7; 79-01-6; 78-93-3; 78-83-1; 75-56-9; 75-21-8; 75-07-0; 75-01-4; 74-88-4; 74-83-9; 71-55-6; 71-43-2; 71-36-3; 67-63-0; 67-56-1; 60-09-3; 59-89-2; 50-32-8; 50-00-0
- 4
- AU - WU W ; STEENLAND K ; BROWN D ; WELLS V ; JONES J ; SCHULTE P ; HALPERIN W
- SO - J OCCUP MED; 31 (6). 1989. 518-523.
- AD - NIOSH, Industrywide Studies Branch, Robert A. Taft Lab., Cincinnati, Ohio 45226-1998.
- TI - Cohort and case-control analyses of workers exposed to vinyl chloride: An update.
- AB - BIOSIS COPYRIGHT: BIOL ABS. The mortality in a cohort of workers at a vinyl chloride polymerization plant has been updated, extending the period of observation in the original study from 1974 to 1986. Workers at this plant may have been exposed to vinyl chloride monomer and/or polyvinyl chloride dust, or may have had no exposure to either substance. Seventy-six percent of the work force worked in jobs with potential exposure to vinyl chloride monomer. Among the total cohort, statistically significant excess risks were observed for liver, lung, and brain cancer. For the subcohort of workers exposed to vinyl chloride monomer, the standardized mortality ratio (SMR) for liver cancer was 333 (90% confidence interval (CI) 202 to 521). However, there were no significant excesses of either brain (SMR = 145, 90% CI 78 to 249) or lung cancer (SMR = 115, 90% CI 96 to 141). The investigate dose response, nested case-control studies for liver, brain, and lung cancer were conducted among the total cohort (including the nonexposed). For these studies there were two exposure variables, cumulative dose of vinyl chloride monomer and cumulative dose of polyvinyl chloride dust. Cumulative dose was defined as the product of level and duration of exposure. The only significant association between disease risk and cumulative dose was for liver cancer and cumulative dose of vinyl chloride monomer. Further division of the liver cancers into angiosarcoma (n = 12) and other liver cancers (n = 7), based on review of death certificates and medical records, showed that the dose response existed only for angiosarcomas.
- KW - Biochemical Studies-General ; Digestive System-Pathology ; Cardiovascular System-Blood Vessel Pathology ; Toxicology-Environmental and Industrial Toxicology ; Neoplasms and Neoplastic Agents-Pathology; Clinical Aspects; Systemic Effects ; Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis ; Public Health: Environmental Health-Occupational Health ; Public Health: Epidemiology-Organic Diseases and Neoplasms

; Hominidae
RN - 9002-86-2; 75-01-4

5

- AU - Wu WA ; Steenland K ; Brown D ; Wells V ; Jones J ; Schulte P ; Halperin W
SO - J Occup Med; VOL 31, ISS 6, 1989, P518-23
AD - Institute of Occupational Medicine, Chinese Academy of Preventive Medicine.
TI - Cohort and case-control analyses of workers exposed to vinyl chloride: an update.
AB - The mortality in a cohort of workers at a vinyl chloride polymerization plant has been updated, extending the period of observation in the original study from 1974 to 1986. Workers at this plant may have been exposed to vinyl chloride monomer and/or polyvinyl chloride dust, or may have had no exposure to either substance. Seventy-six percent of the work force worked in jobs with potential exposure to vinyl chloride monomer. Among the total cohort, statistically significant excess risks were observed for liver, lung, and brain cancer. For the subcohort of workers exposed to vinyl chloride monomer, the standardized mortality ratio (SMR) for liver cancer was 333 (90% confidence interval (CI) 202 to 521). However, there were no significant excesses of either brain (SMR = 145, 90% CI 78 to 249) or lung cancer (SMR = 115, 90% CI 96 to 141). To investigate dose response, nested case-control studies for liver, brain, and lung cancer were conducted among the total cohort (including the nonexposed). For these studies there were two exposure variables, cumulative dose of vinyl chloride monomer and cumulative dose of polyvinyl chloride dust. Cumulative dose was defined as the product of level and duration of exposure. The only significant association between disease risk and cumulative dose was for liver cancer and cumulative dose of vinyl chloride monomer. Further division of the liver cancers into angiosarcoma (n = 12) and other liver cancers (n = 7), based on review of death certificates and medical records, showed that the dose response existed only for angiosarcomas.
KW - TOXBIB ; Brain Neoplasms CHEMICALLY INDUCED/MORTALITY ; Butadienes ADVERSE EFFECTS ; Cohort Studies ; Environmental Exposure ; Female ; Human ; Liver Neoplasms CHEMICALLY INDUCED/MORTALITY ; Lung Neoplasms CHEMICALLY INDUCED/MORTALITY ; Male ; Neoplasms CHEMICALLY INDUCED/*MORTALITY ; Occupational Diseases CHEMICALLY INDUCED/*MORTALITY ; Polyvinyl Chloride ADVERSE EFFECTS ; Retrospective Studies ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS
RN - 75-01-4; 9002-86-2

6

- AU - Kurzbauer H
SO - Neurol Neurochir Pol; VOL 22, ISS 5, 1988, P404-9
AD - Instytutu Medycyny Pracy w Przemyśle Węglowym i Hutniczym w Sosnowcu.
TI - [Effect of vinyl chloride and its polymers on the nervous system]
AB - The study was undertaken for assessment of the effect of vinyl chloride and its polymers on the nervous system. A group of 200 patients working in the production of VC were studied. The group comprised 155 men and 45 women aged 19-46 years (mean 40). The duration of employment was over 5 years in most workers (85.5%), and 26% worked over 20 years (mean duration 14 years). On the basis of neurological examinations clinical groups were isolated: without

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neurological changes (58 workers), with symptoms (54), with organic signs (88). The studied groups were not different with respect to age. The shortest duration of employment was in workers without neurological abnormalities. In the complex of symptoms tension headaches, irritability and sleep disturbances prevailed. Organic signs manifested themselves most frequently with pyramidal abnormalities (52), cerebellar (40), sensory trigeminal nerve involvement (24) and pyramidal-cerebellar syndromes (26). In the group of workers with evidence of organic nervous system lesions significantly more frequently a history of acute poisonings, Raynaud's syndrome and hepatic involvement were found. The neurotic symptoms with minor pyramidal-cerebellar signs and sensory trigeminal neuropathy may be related aetiologically to the toxic effect of vinyl chloride.

- KW - TOXBIB ; Adult ; Air Pollutants, Occupational *ADVERSE EFFECTS ; Chemical Industry * ; Chronic Disease ; English Abstract ; Female ; Human ; Male ; Middle Age ; Nervous System Diseases *CHEMICALLY INDUCED ; Poland ; Polyvinyl Chloride *ADVERSE EFFECTS ; Polyvinyls *ADVERSE EFFECTS ; Time Factors ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS
- RN - 75-01-4 ; 9002-86-2
- 7
- AU - Antonjuzenko VA ; Gnesina EA ; Gnelickij GI ; Karacarova SV ; Kalistova VV
- SO - Gigiena truda i professional'nye zabojevanija Feb. 1987, No.2, p.19-22. 9 ref.
- TI - Some characteristics of current forms of occupational nervous system diseases of chemical aetiology
- AB - Follow-up of 214 patients with the most commonly encountered types of poisoning (caused by ethylene, vinyl chloride, trichloroethylene, mercury and its compound granosanum-64) as well as with occupational pathology due to antibiotics (penicillin and streptomycin). Neurological symptoms often develop in combination with symptoms of organic lesions of different parts of the brain. Ethylene, vinyl chloride, and trichloroethylene affect mainly the mesencephalon and caudal regions, whereas mercury affects the brain stem and cerebellum. Antibiotics produce circulatory disorders confirmed by visual disorders.
- KW - DISEASES OF CENTRAL NERVOUS SYSTEM ; DISEASES OF PERIPHERAL NERVOUS SYSTEM ; VISUAL FUNCTION DISORDERS ; TOXIC SUBSTANCES ; POISONING ; ETHYLENE ; VINYL CHLORIDE ; TRICHLOROETHYLENE ; MERCURY AND COMPOUNDS ; PENICILLIN ; STREPTOMYCIN ; NEUROSIS ; FUNCTIONAL NERVOUS DISORDERS ; CHRONIC POISONING ; ILO
- RN - 74-85-1 ; 75-01-4 ; 79-01-6 ; 7439-97-6 ; 1406-05-9 ; 57-92-1
- 8
- AU - Smulevich VB ; Fedotova IV ; Filatova VS
- SO - British Journal of Industrial Medicine Feb. 1988, Vol.45, No.2, p.93-97. 30 ref.
- TI - Increasing evidence of the rise of cancer in workers exposed to vinylchloride
- AB - The results of a cancer mortality study among workers employed in the production of vinylchloride (VC) and polyvinylchloride (VC) between 1939 and 1977 suggest a significant increase in deaths from malignancies of the lymphatic and haemopoietic tissues. Mortality for tumours of the digestive organs, respiratory system, bone and connective tissues, brain, and skin are also greater than in the general population. There were no registered cases of liver

angiosarcoma in the study cohort during the follow-up period. The risk of cancer was highest among the workers exposed to concentrations of VC of 300mg/m³: and more who had worked at the plant for 15 to 19yrs. The relatively high number of leukaemias and lymphomas in the study group and the absence of liver angiosarcomas probably reflect the specific carcinogenic action of different doses of vinylchloride (VC).

KW - CHEMICAL INDUSTRY ; VINYL CHLORIDE ; POLYVINYL CHLORIDE ; NEOPLASMS ; MORTALITY ; EXPOSURE EVALUATION ; TOXIC SUBSTANCES ; LONG-TERM STUDY ; LONG-TERM EXPOSURE ; BRAIN CANCER ; GASTROINTESTINAL CANCER ; LUNG CANCER ; WOMEN ; BRONCHIAL CANCER ; LEUKAEMIA ; LYMPHOMA ; CARCINOGENS ; CARCINOGENIC EFFECTS ; LENGTH OF EXPOSURE ; SKIN CANCER ; ILO

RN - 75-01-4 ; 9002-86-2

9

AU - Uzych L

SO - Hum Toxicol; VOL 7, ISS 6, 1988, P517-27 (REF: 32)

TI - Human male exposure to vinyl chloride and possible teratogenic and mutagenic risks: a review.

KW - TOXBIB ; Abnormalities, Drug-Induced ETIOLOGY ; Adult ; Brain ABNORMALITIES/DRUG EFFECTS ; Chromosome Aberrations * ; Environmental Exposure ; Human ; Male ; Middle Age ; Review ; Review of Reported Cases ; Sister Chromatid Exchange *DRUG EFFECTS ; Spermatozoa DRUG EFFECTS ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS

RN - 75-01-4

10

AU - OLSEN GW ; HEARN S ; COOK RR ; CURRIER MF ; ALLEN S

SO - J OCCUP MED; 31 (1). 1989. 32-34.

TI - MORTALITY EXPERIENCE OF A COHORT OF LOUISIANA USA CHEMICAL WORKERS

AB - BIOSIS COPYRIGHT: BIOL ABS. RRM WORKERS OCCUPATIONAL TOXICOLOGY BRAIN CANCER LUNG CANCER LEUKEMIA SMOKING CIGARETTES HAZARDOUS MATERIALS CHEMICAL INDUSTRY HEALTHY WORKER EFFECT OCCUPATIONAL DISEASE EPIDEMIOLOGY INDUSTRIAL SOLVENTS CARDIOVASCULAR DISEASE CARCINOGEN

KW - Social Biology; Human Ecology ; Behavioral Biology-Human Behavior ; Pathology, General and Miscellaneous-Necrosis (1971-) ; Cardiovascular System-Heart Pathology ; Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pat ; Respiratory System-Pathology ; Nervous System-Pathology ; Psychiatry-Addiction-Alcohol, Drugs, Smoking, etc. ; Toxicology-General; Methods and Experimental ; Toxicology-Environmental and Industrial Toxicology ; Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis ; Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms ; Public Health-Public Health Administration and Statistics ; Public Health: Environmental Health-Occupational Health ; Public Health: Epidemiology-Organic Diseases and Neoplasms ; Plant Physiology, Biochemistry and Biophysics-Chemical Constituents ; Hominidae

RN - 9004-67-5; 9002-88-4; 7782-50-5; 7647-01-0; 1310-73-2; 127-18-4; 115-07-1; 107-21-1; 107-06-2; 75-56-9; 75-21-8; 75-09-2; 75-01-4; 74-87-3; 74-85-1; 71-43-2; 67-66-3; 57-55-6; 56-23-5

11

AU - Doll R

SO - Scandinavian Journal of Work, Environment and Health, Vol. 14, No.

- 2, pages 61-78, 50 references, 1988
- TI - Effects of Exposure to Vinyl Chloride. An Assessment of the Evidence
- AB - This review concerned the effects on the personal health of men occupationally exposed to vinyl-chloride (75014). Four major studies were reviewed which involved workers in England, the United States, Canada, and Italy. Other studies include a Norwegian study of 454 men, a German study, Swedish and French studies, and a Japanese study. While each study did not explore every possibility, there appeared to be a mortality rate for cancer of the liver which was nearly seven times that which would have been expected among these workers. Most of the excess deaths resulted from angiosarcoma. The combined data at first do not indicate an increased risk of lung cancer. Examination of subgroups such as men employed for more than 10 years and exposed to higher than average concentrations or men exposed for 20 years, supported an excess mortality for lung cancer. Small excesses were also noted in the mortality from cancers of the brain and of the lymphatic and hematopoietic systems. However, the last excesses are not statistically significant and there is nothing to confirm an occupational factor in their occurrence. Thyroid cancer and melanoma were reported to be in excess in the Norwegian study. Special attention was given to cirrhosis of the liver because of the liver damage from vinyl-chloride, but no evidence of increased cirrhosis cases was found. Data for nonmalignant respiratory disease was confusing.
- KW - DCN-170151 ; Liver cancer ; Carcinogens ; Plastics industry ; Pulmonary system disorders ; Cardiovascular system disorders ; Liver damage ; Environmental contamination ; Humans ; Epidemiology
- RN - 75-01-4
- 12
- AU - Smulevich VB ; Fedotova IV ; Filatova VS
- SO - British Journal of Industrial Medicine, Vol. 45, No. 2, pages 93-97, 30 references, 1988
- TI - Increasing Evidence of the Rise of Cancer in Workers Exposed to Vinylchloride
- AB - A study of cancer mortality among workers exposed to vinyl-chloride (75014) was conducted. The cohort consisted of 3232 workers, 2195 males, employed for at least 1 month between 1939 and 1977 at factories in the Soviet Union producing vinyl-chloride and polyvinyl-chloride (PVC). Death certificates for all deceased subjects and medical histories and autopsy reports where available were examined. Standardized mortality ratios (SMRs) were calculated using the 1959, 1969, and 1975 populations in the cities where the factories were located as the referents. Industrial hygiene monitoring data for vinyl-chloride were reviewed. A total of 288 deaths occurred in the cohort between 1939 and 1977. Of these, 63 were from cancer. Pathological confirmation of the diagnosis was available for 60 percent of the cancer deaths. For both sexes, mortality from leukemias and lymphomas was significantly higher than expected, with SMRs of 500.0 and 416.7, respectively. No cases of angiosarcoma or other liver tumors were reported. Mortality from lung tumors and pancreatic, bone, connective tissue, skin, and bone cancer was insignificantly elevated. For male workers exposed to vinyl-chloride, total cancer mortality was slightly reduced. Cancers of the pancreas, lung, bone, genitalia, and leukemia were insignificantly elevated. Mortality due to leukemias and lymphomas among female workers was significantly elevated. Deaths from cancer

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of the stomach, rectum, skin, brain, and lymphatic and hematopoietic tissues were insignificantly elevated. The cancer mortality was highest in workers exposed to vinyl-chloride concentrations of 300 milligrams per cubic meter or higher who had 15 to 19 years of exposure. The authors conclude that workers employed in facilities producing vinyl-chloride and PVC have increased mortality from cancer.

- KW - DCN-165868 ; Organo chlorine compounds ; Mortality rates ; Epidemiology ; Cancer rates ; Occupational exposure ; Chemical industry workers ; Risk analysis
- RN - 75-01-4
- 13
- AU - MUSICCO M ; SANT M ; MOLINARI S ; FILIPPINI G ; GATTA G ; BERRINO F
- SO - AM J EPIDEMIOL; 128 (4). 1988. 778-785.
- AD - Ist. Tecnol. Biomed. Avanzate, Div. Epidemiol., Natl. Res. Council, Via ampere 56, 20133 Milano, Italy.
- TI - A case-control study of brain gliomas and occupational exposure to chemical carcinogens: The risk to farmers.
- AB - BIOSIS COPYRIGHT: BIOL ABS. During 1983 and 1984, 240 newly diagnosed cases of brain glioma and 742 controls (465 non-glioma nervous system tumors and 277 patients with other neurologic diseases) were recruited and interviewed in the neurologic and neurosurgical departments of two hospitals in Milan, Italy. The occupational histories of cases and controls were compared, and relative risk estimates, adjusted for sex, age, residence, and socioeconomic status, were computed using the Mantel-Haenszel method. A statistically significant risk increase was found for farmers (relative risk (RR) = 1.6, $p = 0.0025$). This risk increase was attributable to those farmers who reported the use of chemicals (insecticides or fungicides, herbicides, and fertilizers). Among the three groups of investigated agrochemicals, only the use of insecticides or fungicides was associated with a significant increase in relative risk (RR = 2.0, $p = 0.006$). Many farmers exposed to fungicides reported the use of commercial compounds of copper sulfate. Some of these compounds contain methyl urea, which has a specific carcinogenic effect on the nervous system in animals. These data suggest that the occupational exposure of farmers to agrochemicals might be responsible for the observed excess risk of brain glioma in farmers.
- KW - Mathematical Biology and Statistical Methods ; Social Biology; Human Ecology ; Biochemical Studies-General ; Nervous System-Pathology ; Toxicology-Environmental and Industrial Toxicology ; Neoplasms and Neoplastic Agents-Pathology; Clinical Aspects; Systemic Effects ; Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis ; Public Health-Public Health Administration and Statistics ; Public Health: Environmental Health-Occupational Health ; Public Health: Environmental Health-Air, Water and Soil Pollution ; Public Health: Epidemiology-Organic Diseases and Neoplasms ; Soil Science-Fertility and Applied Studies (1970-) ; Pest Control, General; Pesticides; Herbicides ; Hominidae
- RN - 14797-65-0; 10124-44-4; 598-50-5; 75-01-4; 50-00-0

14

- AU - PERERA F
- SO - DRAGGAN, S., J. J. COHRSEN AND R. E. MORRISON (ED.). ENVIRONMENTAL IMPACTS ON HUMAN HEALTH: THE AGENDA FOR LONG-TERM RESEARCH AND DEVELOPMENT; EXPERT PANEL MEETING ON HUMAN HEALTH IMPACTS AND THEIR MITIGATION, WASHINGTON, D.C., USA, 1984. XXXVII+228P. PRAEGER

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- PUBLISHERS: NEW YORK, NEW YORK, USA; LONDON, ENGLAND, UK. ILLUS.
ISBN 0-275-92338-X.; 0 (0). 1987. 61-88.
- TI - MOLECULAR EPIDEMIOLOGY A NOVEL APPROACH TO THE INVESTIGATION OF
POLLUTANT-RELATED CHRONIC DISEASE
- AB - BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW HUMAN CANCER MUTAGEN
NEUROBEHAVIORAL PULMONARY DISEASES REPRODUCTIVE DYSFUNCTION
- KW - General Biology-Symposia, Transactions and Proceedings of
Conferences, Congresses, Review ; Genetics and Cytogenetics-Human ;
Genetics and Cytogenetics-Population Genetics (1972-) ; Social
Biology; Human Ecology ; Behavioral Biology-Human Behavior ;
Biochemical Studies-General ; Respiratory System-Pathology ;
Reproductive System-Pathology ; Nervous System-Pathology ;
Psychiatry-General; Medical Psychology and Sociology ;
Toxicology-Environmental and Industrial Toxicology ; Neoplasms and
Neoplastic Agents-Carcinogens and Carcinogenesis ; Public
Health-Public Health Administration and Statistics ; Public Health:
Environmental Health-Air, Water and Soil Pollution
; Public Health: Epidemiology-Organic Diseases and Neoplasms ;
Hominidae
- RN - 41286-73-1; 16543-55-8; 15663-27-1; 1402-68-2; 1332-21-4; 309-00-2;
106-89-8; 96-12-8; 75-21-8; 75-01-4; 60-57-1; 53-96-3; 50-32-8
- 15
- AU - DAHAR WS ; BOND GG ; MCLAREN EA ; SABEL FL ; LIPPS TE ; COOK RR
- SO - J OCCUP MED; 30 (8). 1988. 648-649.
- TI - UPDATE TO VINYL CHLORIDE MORTALITY STUDY
- AB - BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN CARCINOGEN ANGIOSARCOMA
CHEMICAL INDUSTRY OCCUPATIONAL TOXICOLOGY OCCUPATIONAL DISEASE
HAZARDOUS MATERIALS EPIDEMIOLOGY MORTALITY
- KW - Social Biology; Human Ecology ; Biochemical Studies-General ;
Pathology, General and Miscellaneous-Necrosis (1971-) ; Digestive
System-Pathology ; Respiratory System-Pathology ; Nervous
System-Pathology ; Toxicology-Environmental and Industrial
Toxicology ; Neoplasms and Neoplastic Agents-Carcinogens and
Carcinogenesis ; Public Health-Public Health Administration and
Statistics ; Public Health: Environmental Health-Occupational Health
; Public Health: Epidemiology-Organic Diseases and Neoplasms ;
Hominidae
- RN - 75-01-4
- 16
- AU - SMULEVICH VB ; FEDOTOVA IV ; FILATOVA VS
- SO - BR J IND MED; 45 (2). 1988. 93-97.
- AD - All-Union Cancer Res. Cancer, AMS USSR, Moscow.
- TI - Increasing evidence of the rise of cancer in workers exposed to
vinylchloride.
- AB - BIOSIS COPYRIGHT: BIOL ABS. The results of a cancer mortality
study among workers employed in the production of vinylchloride and
polyvinylchloride between 1939 and 1977 suggest a significant
increase in deaths from malignancies of the lymphatic and
haemopoietic tissues. Mortality for tumours of the digestive organs,
respiratory system, bone and connective tissues, brain, and skin are
also greater than in the general population. There were no
registered cases of liver angiosarcoma in the study cohort during
the follow up period. The risk of cancer was highest among the
workers exposed to concentrations of VC of 300 mg/m3 and more who
had worked at the plant for 15 to 19 years. The relatively high
number of leukaemias and lymphomas in the study group and the
absence of liver angiosarcomas probably reflects specific

- carcinogenic action of different doses of vinylchloride.
- KW - Social Biology; Human Ecology ; Biochemical Studies-General ; Digestive System-Pathology ; Blood, Blood-Forming Organs and Body Fluids-Blood, Lymphatic and Reticuloendothelial Pat ; Respiratory System-Pathology ; Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology ; Integumentary System-Pathology ; Nervous System-Pathology ; Neoplasms and Neoplastic Agents-Carcinogens and Carcinogenesis ; Neoplasms and Neoplastic Agents-Blood and Reticuloendothelial Neoplasms ; Public Health: Environmental Health-Occupational Health ; Public Health: Epidemiology-Organic Diseases and Neoplasms ; Hominidae
- RN - 9002-86-2; 75-01-4
- 17
- AU - DALBOKOVA D ; KOLEV P ; DINCHEVA E ; TSENOVA B
- SO - FOURTH EUROPEAN CONGRESS OF EEG AND CLINICAL NEUROPHYSIOLOGY, AMSTERDAM, NETHERLANDS, MAY 10-13, 1987. CLIN NEUROL NEUROSURG; 89 (2 SUPPL. 1). 1987. 94-95.
- TI - BRAIN EVENT-RELATED POTENTIALS ERP AND SOME PSYCHOMETRIC CHANGES UNDER OCCUPATIONAL EXPOSURE TO VINYLCHLORIDE
- AB - BIOSIS COPYRIGHT: BIOL ABS. RRM ABSTRACT HUMAN CENTRAL NERVOUS SYSTEM
- KW - General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Revie ; Social Biology; Human Ecology ; Behavioral Biology-Human Behavior ; Biochemical Studies-General ; Pathology, General and Miscellaneous-Diagnostic ; Sense Organs, Associated Structures and Functions-General; Methods ; Nervous System-General; Methods ; Nervous System-Pathology ; Psychiatry-General; Medical Psychology and Sociology ; Psychiatry-Psychopathology; Psychodynamics and Therapy ; Toxicology-Environmental and Industrial Toxicology ; Public Health: Environmental Health-Occupational Health ; Hominidae
- RN - 75-01-4
- 18
- AU - CONE JE ; HARRISON R ; REITER R
- SO - OCCUP MED - STATE OF THE ART REV; 2 (4). 1987. 721-738.
- TI - PATIENTS WITH MULTIPLE CHEMICAL SENSITIVITIES CLINICAL DIAGNOSTIC SUBSETS AMONG AN OCCUPATIONAL HEALTH CLINIC POPULATION
- AB - BIOSIS COPYRIGHT: BIOL ABS. RRM RESPIRATORY GASTROINTESTINAL NEUROPSYCHOLOGICAL MUSCULOSKELETAL SYMPTOMS DIZZINESS
- KW - Behavioral Biology-Human Behavior ; Biochemical Studies-General ; Pathology, General and Miscellaneous-Diagnostic ; Digestive System-General; Methods ; Digestive System-Pathology ; Respiratory System-General; Methods ; Respiratory System-Pathology ; Muscle-Physiology and Biochemistry ; Muscle-Pathology ; Bones, Joints, Fasciae, Connective and Adipose Tissue-General; Methods ; Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology ; Sense Organs, Associated Structures and Functions-General; Methods ; Sense Organs, Associated Structures and Functions-Pathology ; Nervous System-General; Methods ; Nervous System-Pathology ; Psychiatry-Psychopathology; Psychodynamics and Therapy ; Toxicology-Environmental and Industrial Toxicology ; Public Health-Health Services and Medical Care ; Public Health: Environmental Health-Occupational Health ; Hominidae
- RN - 7783-06-4; 1746-01-6; 1330-20-7; 333-41-5; 111-76-2; 86-50-0; 79-01-6; 75-45-6; 75-09-2; 75-01-4

- 19
AU - HILL RB
SO - HUM PATHOL; 18 (9). 1987. 882-885.
TI - THE PATHOLOGY OF ENVIRONMENTS
AB - BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN INDUSTRIAL POLLUTION
OCCUPATIONAL EXPOSURE SOIL POLLUTION AIR POLLUTION WATER POLLUTION
PERTURBED ENVIRONMENT KURU CIVILIZATION CHERNOBYL USSR LOVE CANAL
NEW YORK USA
KW - Social Biology; Human Ecology ; Radiation-Radiation Effects and
Protective Measures ; Behavioral Biology-Human Behavior ; Ecology;
Environmental Biology-Bioclimatology and Biometeorology
; Biochemistry-Gases (1970-) ; Biochemical
Studies-General ; Pathology, General and Miscellaneous-Diagnostic ;
Nervous System-Pathology ; Toxicology-General; Methods and
Experimental ; Toxicology-Environmental and Industrial Toxicology ;
Virology-Animal Host Viruses ; Medical and Clinical
Microbiology-Virology ; Public Health: Environmental Health-Air,
Water and Soil Pollution ; Public Health:
Environmental Health-Radiation Health ; Hominidae
RN - 82228-96-4; 7782-50-5; 7631-86-9; 1332-21-4; 828-00-2; 630-08-0;
81-07-2; 75-01-4; 50-29-3
- 20
AU - CAPONY P ; FRICAMP C ; FAURE H ; FOURNET J
SO - GASTROENTEROL CLIN BIOL; 11 (4). 1987. 344.
TI - HEPATIC ANGIOSARCOMA IN A PATIENT WITH PORTAL FIBROSIS FOLLOWING
VINYL CHLORIDE EXPOSURE
AB - BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN ESOPHAGEAL RUPTURE
ENCEPHALOPATHY HEPATOCELLULAR INSUFFICIENCY PORTAL FIBROSIS
OCCUPATIONAL DISEASE
KW - Pathology, General and Miscellaneous-Necrosis (1971-) ; Digestive
System-Pathology ; Nervous System-Pathology ;
Toxicology-Environmental and Industrial Toxicology ; Neoplasms and
Neoplastic Agents-Pathology; Clinical Aspects; Systemic Effects
; Public Health: Environmental Health-Occupational Health ;
Public Health: Environmental Health-Air, Water and Soil Pollution
; Hominidae
RN - 75-01-4
- 21
AU - PURCHASE I FH ; STAFFORD J ; PADDLE GM
SO - FOOD CHEM TOXICOL; 25 (2). 1987. 187-202.
TI - VINYL CHLORIDE AN ASSESSMENT OF THE RISK OF OCCUPATIONAL EXPOSURE
AB - BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW HUMAN WORKERS ANIMAL
DIZZINESS MUTAGEN CARCINOGEN LIVER ANGIOSARCOMA OCCUPATIONAL
TOXICOLOGY AIR POLLUTION HAZARDOUS MATERIALS HAZARDOUS OCCUPATION
CHEMICAL INDUSTRY
KW - Genetics and Cytogenetics-General ; Social Biology; Human Ecology ;
Biochemistry-Gases (1970-) ; Biochemical Studies-General ;
Digestive System-Pathology ; Cardiovascular System-Blood Vessel
Pathology ; Nervous System-Pathology ; Toxicology-Environmental and
Industrial Toxicology ; Neoplasms and Neoplastic Agents-Carcinogens
and Carcinogenesis ; Public Health: Environmental
Health-Occupational Health ; Public Health: Environmental
Health-Air, Water and Soil Pollution ;
Hominidae
RN - 15060-26-1; 7763-77-1; 638-23-3; 198-55-0; 123-93-3; 107-20-0;
75-01-4

22

- AU - Maltoni C ; Cotti G
SO - Ann N Y Acad Sci; VOL 534, 1988, P145-59
AD - Institute of Oncology, F. Addarii, Bologna, Italy.
TI - Carcinogenicity of vinyl chloride in Sprague-Dawley rats after prenatal and postnatal exposure.
AB - Vinyl chloride was administered by inhalation, 7 hours daily, 5 days weekly, at concentrations of 2500 and 0 ppm, to Sprague-Dawley rats. The treatment was started on 13-week-old breeders and male and female offspring (12-day embryos). The breeders and part of the offspring were exposed for 104 weeks; the other part of the offspring was exposed for 15 weeks only. Under the experimental conditions, vinyl chloride caused an exceptionally high incidence of brain neuroblastomas, liver angiosarcomas, and hepatocarcinomas. The age at start and/or length of treatment may affect the onset of these tumors in different ways.
KW - TOXBIB ; Administration, Inhalation ; Animal ; Biological Assay ; Brain Neoplasms CHEMICALLY INDUCED ; Female ; Hemangiosarcoma CHEMICALLY INDUCED ; Liver Neoplasms CHEMICALLY INDUCED ; Liver Neoplasms, Experimental CHEMICALLY INDUCED ; Male ; Pregnancy ; Prenatal Exposure Delayed Effects * ; Rats ; Rats, Inbred Strains ; Support, Non-U.S. Gov't ; Vinyl Chloride ADMINISTRATION & DOSAGE/*TOXICITY ; Vinyl Compounds *TOXICITY
RN - 75-01-4

23

- AU - Smulevich VB ; Fedotova IV ; Filatova VS
SO - Br J Ind Med; VOL 45, ISS 2, 1988, P93-7
AD - All-Union Cancer Research Centre, AMS USSR, Moscow.
TI - Increasing evidence of the rise of cancer in workers exposed to vinylchloride.
AB - The results of a cancer mortality study among workers employed in the production of vinylchloride and polyvinylchloride between 1939 and 1977 suggest a significant increase in deaths from malignancies of the lymphatic and haemopoietic tissues. Mortality for tumours of the digestive organs, respiratory system, bone and connective tissues, brain, and skin are also greater than in the general population. There were no registered cases of liver angiosarcoma in the study cohort during the follow up period. The risk of cancer was highest among the workers exposed to concentrations of VC of 300 mg/m3 and more who had worked at the plant for 15 to 19 years. The relatively high number of leukaemias and lymphomas in the study group and the absence of liver angiosarcomas probably reflects specific carcinogenic action of different doses of vinylchloride.
KW - TOXBIB ; Female ; Human ; Male ; Neoplasms *CHEMICALLY INDUCED/MORTALITY ; Occupational Diseases *CHEMICALLY INDUCED/MORTALITY ; Polyvinyl Chloride ADVERSE EFFECTS ; Sex Factors ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS
RN - 75-01-4; 9002-86-2

24

- SO - EPA/OTS; Doc #FYI-OTS-0680-0065
TI - PATHOLOGY REPORT ON THE BRAINS FROM MICE, HAMSTERS, AND RATS EXPOSED TO VINYL CHLORIDE IN IBT STUDY 663-03222
KW - CHEM MFGS ASSN ; ETHENE, CHLORO- ; HEALTH EFFECTS ; CHRONIC TOXICITY ; COMBINED CHRONIC TOXICITY/CARCINOGENICITY ; MAMMALS ; RATS ; INHALATION ; MICE ; HAMSTERS
RN - 75-01-4

R&S 002157

25

- AU - THOMAS TL ; WAXWEILER RJ
SO - SCAND J WORK ENVIRON HEALTH; 12 (1). 1986. 1-15.
TI - BRAIN TUMORS AND OCCUPATIONAL RISK FACTORS A REVIEW
AB - BIOSIS COPYRIGHT: BIOL ABS. RRM REVIEW HUMAN PHENOLIC COMPOUNDS
ORGANIC SOLVENTS LUBRICATING OIL ACRYLONITRILE CHLORIDE VINYL
CHLORIDE FORMALDEHYDE HYDROCARBONS CARCINOGENS ARTISTS LABORATORY
PROFESSIONALS VETERINARIANS EMBALMERS OIL REFINERY WORKERS RUBBER
WORKERS CHEMICAL PLANT WORKERS
KW - Biochemical Studies-General ; Pathology, General and
Miscellaneous-Diagnostic ; Nervous System-Pathology ;
Toxicology-Environmental and Industrial Toxicology ; Neoplasms and
Neoplastic Agents-Pathology; Clinical Aspects; Systemic Effects
; Neoplasms and Neoplastic Agents-Carcinogens and
Carcinogenesis ; Public Health: Environmental Health-Occupational
Health ; Public Health: Environmental Health-Air, Water and Soil
Pollution ; Public Health:
Epidemiology-Organic Diseases and Neoplasms ; Hominidae
RN - 9006-04-6; 9002-86-2; 7782-44-7; 7727-37-9; 7664-38-2; 7446-09-5;
7440-41-7; 7439-92-1; 1319-77-3; 630-08-0; 127-18-4; 124-38-9;
123-31-9; 108-95-2; 108-88-3; 108-46-3; 107-13-1; 106-51-4; 75-09-2;
75-01-4; 71-43-2; 67-56-1; 56-23-5; 50-00-0

26

- AU - SWEENEY MH ; BEAUMONT JJ ; WAXWEILER RJ ; HALPERIN WE
SO - ARCH ENVIRON HEALTH; 41 (1). 1986. 23-28.
AD - NIOSH, 4676 Columbia Parkw., Robert A. Taft Lab., Cincinnati, Ohio
45226, USA.
TI - An investigation of mortality from cancer and other causes of death
among workers employed at an East Texas (USA) chemical plant.
AB - BIOSIS COPYRIGHT: BIOL ABS. The cause-specific mortality of 2,510
males employed at an east Texas chemical plant was examined in a
historical prospective study to evaluate a suspected increase in
deaths from multiple myeloma and brain cancer. Potential exposures
from chemicals, either used in manufacturing processes or produced
during the study period 1952-1977, included the fuel additive
tetraethyl lead, ethylene dibromide and dichloride, inorganic lead,
and vinyl chloride monomer. Overall mortality for all workers (156
observed vs. 211.14 expected) and for workers first employed between
1952 and 1959 (131 observed vs. 167.33 expected) when tetraethyl
lead was the single major product was lower than expected when
compared to the (USA) general population. There were no significant
increases in mortality from malignancies or other causes of death.
The deficits may be due to the small number of total deaths, and the
lower power for detecting excess risk of mortality from multiple
myeloma ($z1\text{-beta} = 27$, $\alpha = .05$), brain cancer ($z1\text{-beta} = 31$,
 $\alpha = .05$), or other rare causes of death; lack of complete
workplace exposure data for production workers; and the absence of
historical measurements on the extent of environmental exposure to
tetraethyl lead and other chemicals.
KW - Biochemical Studies-Minerals ; Pathology, General and
Miscellaneous-Necrosis (1971-) ; Metabolism-Minerals ; Blood,
Blood-Forming Organs and Body Fluids-Blood, Lymphatic and
Reticuloendothelial Pat ; Blood, Blood-Forming Organs and Body
Fluids-Lymphatic Tissue and Reticuloendothelial Sys ; Nervous
System-Pathology ; Toxicology-Environmental and Industrial
Toxicology ; Neoplasms and Neoplastic Agents-Carcinogens and
Carcinogenesis ; Neoplasms and Neoplastic Agents-Blood and
Reticuloendothelial Neoplasms ; Immunology and

Immunochemistry-Immunopathology, Tissue Immunology
; Public Health: Environmental Health-Occupational Health ;
Public Health: Environmental Health-Air, Water and Soil Pollution
; Hominidae

RN - 7439-92-1; 107-06-2; 106-93-4; 78-00-2; 75-01-4

27

AU - KELLEROVA V

SO - J HYG EPIDEMIOL MICROBIOL IMMUNOL (PRAGUE); 29 (4). 1985 (RECD.
1986). 337-346

AD - Medical Faculty of Hygiene, Charles University, Srobarova 50, 100 34
Praha 10, Czechoslovakia.

TI - Electroencephalographic findings in workers exposed to benzene.

AB - BIOSIS COPYRIGHT: BIOL ABS. Preventive EEG examination was carried
out in 40 workers significantly exposed to benzene. The EEG findings
were compared with those of a control group of 48 healthy persons, a
group of 110 workers significantly exposed to toluene and xylene and
a group of 236 workers exposed to vinyl chloride. The individuals
exposed to benzene exhibited 22.5% of abnormal and 45% threshold
findings, the abnormalities being episodic, diffuse or a combination
of the two. The effect of benzene entailed a frequent (32.5%)
occurrence of a characteristic frequency lability. Sleep phenomena
were found in a total of 60% cases (37.5% cases reached stage 1 B3
while 15% reached stage 2 according to Roth (14)). The rapid onset
of deeper sleep stages (in 30% cases) is considered typical for
benzene exposure. The photic driving response often had an extended
frequency range (a total of 61.1%, to beta frequencies only in
30.55%, to both beta and theta frequencies also in 30.55% of cases).
The different EEG features characteristic of the neurotoxic action
of various types of organic solvents make possible a more efficient
diagnostics of the effects of these chemicals on the CNS.

KW - Biophysics-General Biophysical Techniques ; Pathology, General and
Miscellaneous-Diagnostic ; Nervous System-General; Methods ; Nervous
System-Pathology ; Psychiatry-Psychophysiology ;
Toxicology-Environmental and Industrial Toxicology ; Public Health:
Environmental Health-Occupational Health ; Hominidae

RN - 1330-20-7; 108-88-3; 75-01-4; 71-43-2

28

AU - LYANGAUER-LEVOVITSKA G ; KHABER-GARLINSKA YA ; KALEMBA K

SO - GIG TR PROF ZABOL; 0 (1). 1985. 53-54.

TI - EARLY DIAGNOSIS OF CHRONIC POISONING WITH VINYL CHLORIDE

AB - BIOSIS COPYRIGHT: BIOL ABS. RRM NOTE HUMAN WORKER NEUROTOXICITY
DERMAL TOXICITY HEPATOTOXICITY

KW - Biochemical Studies-General ; Pathology, General and
Miscellaneous-Comparative (1970-) ; Pathology, General and
Miscellaneous-Diagnostic ; Digestive System-Pathology ;
Integumentary System-Pathology ; Nervous System-Pathology ;
Toxicology-Environmental and Industrial Toxicology ; Public Health:
Environmental Health-Occupational Health ; Public Health:
Environmental Health-Air, Water and Soil Pollution
; Hominidae

RN - 75-01-4

29

AU - GNESINA EA ; TEKLINA LG ; LYSOVA VV

SO - GIG TR PROF ZABOL; 0 (6). 1984. 34-36.

TI - CHARACTERISTICS OF NIGHT SLEEP IN PATIENTS WITH CHRONIC OCCUPATIONAL
POISONING WITH VINYL CHLORIDE BASED ON THE CORRELATION ANALYSIS OF

R&S 002159

ELECTROENCEPHALOGRAM

AB - BIOSIS COPYRIGHT: BIOL ABS. RRM HUMAN

KW - Behavioral Biology-Human Behavior ; Biochemical Studies-General ; Biophysics-General Biophysical Techniques ; External Effects-Light and Darkness ; Pathology, General and Miscellaneous-Diagnostic ; Nervous System-General; Methods ; Nervous System-Pathology ; Psychiatry-Psychopathology; Psychodynamics and Therapy ; Toxicology-Environmental and Industrial Toxicology ; Public Health: Environmental Health-Occupational Health ; Public Health: Environmental Health-Air, Water and Soil Pollution ; Hominidae

RN - 75-01-4

30

AU - Thomas TL ; Stewart PA ; Stemhagen A ; Correa P ; Norman SA ; Bleecker MA ; Hoover RN

SO - Scandinavian Journal of Work, Environment and Health, Vol. 13, No. 5, pages 417-423, 29 references, 1987

TI - Risk of Astrocytic Brain Tumors Associated with Occupational Chemical Exposures. A Case-Referent Study

AB - A case referent study was carried out on risks for astrocytic tumors among deceased men who had been employed in the petroleum refining (SIC-2911) and chemical manufacturing industries in three geographic areas with a substantial proportion of the workforce employed in these industries, and an evaluation was made of risks for exposures to particular organic chemicals believed to be associated with excess brain tumor risk. Cases involved white men, aged 30 or more, who had died of brain or other central nervous system tumors during a 3 year period. Referents were randomly selected from white male residents of the same areas who had died of causes other than brain tumor, cerebrovascular disease, epilepsy, suicide or homicide. Data on cases and referents were obtained from death certificates, with subsequent interviews of family members. The final data set consisted of 300 cases with astrocytic tumors and 386 referents. Each job from a subject's work history was classified according to potential exposure to organic solvents, lubricating oils, polycyclic aromatic hydrocarbons, formaldehyde (50000), acrylonitrile (107131), vinyl-chloride (75014) or phenolic compounds. In regard to the petroleum refining industry, the highest risk occurred among men who had worked less than 5 years, were hired before the age of 40, and died more than 10 years after their first employment in the industry. No excess astrocytic tumor mortality risk was associated with employment in the chemical industry. There was an almost twofold elevated risk of mortality from astrocytic tumors among men who had worked more than 20 years in jobs with probable exposure to cutting fluids. The authors conclude that the data do not provide persuasive evidence of a causal association between astrocytic tumor mortality risk and employment in the two high risk industries.

KW - DCN-165065 ; Biostatistics ; Tumorigens ; Neoplasms ; Neuropathology ; Occupational diseases ; Occupational hazards ; Health hazards ; Industrial hazards ; Hazardous materials ; Organic chemicals

RN - 50-00-0; 107-13-1; 75-01-4

31

AU - Kessler E ; Brandt-Rauf PW

SO - Seminars in Occupational Medicine, Vol. 2, No. 4, pages 311-314, 45 references, 1987

TI - Occupational Cancers of the Nervous System

AB - A review was presented of epidemiologic studies relating to nervous

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system cancers, particularly brain tumors, for the purpose of accumulating evidence supporting a possible link between the incidence of brain tumors and occupational exposure. Occupational areas considered included rubber manufacturing, polyvinyl-chloride (9002862) production, oil refining and petrochemical production, and nuclear fuels and weapons fabrication. Nonindustrial exposures were also discussed. Although earlier studies had indicated an excess proportional mortality for brain cancer among workers engaged in rubber manufacturing, later investigations failed to support the earlier findings. There was an apparent association between vinyl-chloride (75014) exposure and the development of brain cancer, particularly glioblastoma multiforme. With respect to oil refining and petrochemical production, disparities were found between the results of studies made by Government agencies and those made with industry support, the latter showing no increased risk for developing brain tumors. Conflicting results were also found between studies of workers at nuclear fuel processing facilities. The failure to segregate out the various and diverse histologic types owing to lack of adequate pathologic evidence and the small numbers involved was discussed. Evidence on the potential for children of occupationally exposed parents to develop brain tumors was examined.

- KW - DCN-164286 ; Carcinogens ; Epidemiology ; Environmental hazards ; Occupational hazards ; Health hazards ; Occupational exposure ; Brain tumors ; Chlorinated vinyls
- RN - 9002-86-2; 75-01-4
- 32
- AU - Anonymous
- SO - World Health Organization, Geneva, 282 pages, 170 references, 1986
- TI - Early Detection of Occupational Diseases
- AB - This book was designed to serve as a guide to early recognition, diagnosis, and treatment of occupational diseases, and for health professionals responsible for planning occupational health services at the workplace. The book was also intended to create awareness among makers of policy, employers, and employees of factors which are important in preventing occupational diseases. Means of carrying out effective monitoring of adverse health conditions were also presented. The book specifically discussed the principles of early detection of occupational diseases, described specific occupational diseases and approaches for their early detection and control, and offered an explanation of the physiology of the body systems affected by occupational diseases. Biological and environmental methods for the assessment of exposure to occupational hazards were also described. Specific diseases discussed included: pneumoconioses caused by sclerogenous mineral dusts, bronchopulmonary diseases caused by hard metal dusts; bronchopulmonary diseases caused by cotton dust, flax, hemp, or sisal dust; occupational asthma; extrinsic allergic pneumonitis; diseases caused by beryllium (7440417), cadmium (7440439), phosphorus (7723140), chromium (7440473), manganese (7439965), arsenic (7440382), mercury (7439976), lead (7439921), fluorine (7782414), carbon-disulfide (75150), carbon-tetrachloride (56235), trichloroethylene (79016), hexachloronaphthalene (1335871), polychlorinated-biphenyls (1336363), vinyl-chloride (75014), benzene (71432), toluene (108883), xylene (1330207), aniline (62533), nitrobenzene (98953), nitric-acid esters, alcohols, glycols, ketones, asphyxiants; and diseases caused by noise, vibration, compressed air, ionizing radiation, and parasites.

- KW - DCN-160557 ; Noise induced hearing loss ; Pulmonary system disorders ; Nervous system disorders ; Heavy metals ; Hydrocarbons ; Cardiovascular system disorders ; Occupational health programs ; Occupational hazards
- RN - 7440-41-7; 7440-43-9; 7723-14-0; 7440-47-3; 7439-96-5; 7440-38-2; 7439-97-6; 7439-92-1; 7782-41-4; 75-15-0; 56-23-5; 79-01-6; 1335-87-1; 1336-36-3; 75-01-4; 71-43-2; 108-88-3; 1330-20-7; 62-53-3; 98-95-3
- 33
- AU - Strik JJTWA
- SO - Occupational and Environmental Chemical Hazards. Cellular and Biochemical Indices for Monitoring Toxicity, V. Foa, E. A. Emmett, M. Maroni, A. Colombi, Editors; pages 250-252, 5 references, 1987
- TI - Toxicological Aspects of Exposure to Chlorinated Hydrocarbons With Special Reference to Chemical Porphyria
- AB - The effect of chlorinated hydrocarbons (CHs) on the development of chemical porphyria is reviewed. Toxicological aspects of exposure to CHs generally consist of damage to skin, central nervous system, and liver. Chronic hepatic porphyria (CHP) is either inherited as a congenital anomaly or is the result of exposure to certain chemical compounds. Most porphyronogenic chemicals belong to the group of CHs that include vinylchloride (75014), hexachlorobenzene (118741), particular brominated or chlorinated biphenyls, tetrachlorodibenzodioxin, chlorinated naphthalenes, and some organophosphorus and organochlorine pesticides. Populations of workers exposed to CHs have been monitored for urinary excretion of porphyrin compounds to detect induction to CHP and to find out if this procedure is relevant for assessing possible exposure. Different studies performed in various locations showed that a total porphyrin excretion of up to 200 micrograms/liter can be considered normal. The analysis of porphyrin patterns in control groups has revealed an incidence of increased uroand hepatocaroxylic porphyrin levels ranging from a few to 19 percent. It has been observed that in young people the incidence of increased porphyrin levels is much lower than in adults. Hepatic porphyria is also influenced by other factors such as sex, alcohol, and estrogens. The author concludes that qualitative changes in urinary porphyrin patterns may be useful in assessing exposure to porphyrinogenic chemicals.
- KW - DCN-157821 ; Porphyrins ; Hepatotoxicity ; Enzymes ; Polychlorinated hydrocarbons ; Bromine compounds ; Environmental exposure ; Occupational hazards ; Medical monitoring ; Urinalysis ; Liver disorders
- RN - 75-01-4; 118-74-1
- 34
- AU - Haley TJ
- SO - Handbook of Toxicology, T. J. Haley and W. O. Berndt, Editors; Hemisphere Publishing Corporation, pages 504-554, 426 references, 1987
- TI - Solvents and Chemical Intermediates
- AB - Several representative samples of solvents to which exposure on the job is likely to occur are discussed in terms of tissue distribution in the body, biotransformation, and toxicological data. Gasoline (8006619) and kerosene (8008206) contain aliphatic hydrocarbons and various unsaturated aliphatic and aromatic hydrocarbons plus benzene (71432). Acute exposures cause dizziness, coma, collapse, and death. Even in nonfatal cases permanent brain damage has been reported. Benzene is now an environmental contaminant as a result

- of numerous accidental spills. It has been established as an industrial leukemogenic agent. Toluene (108883) causes fatigue, weakness and confusion with loss of consciousness and vertigo as well. At 600 to 800 parts per million (ppm) exposure levels, mental confusion, staggering gait, nausea, vomiting, anorexia, and severe headaches result. Ethylbenzene (100414) inhaled at 85ppm causes fatigue, insomnia, headache, and mild irritation to the eyes and respiratory tract of humans. At 1000 to 5000ppm, eye, nose, throat, and mucous-membrane irritation, lacrimation, dizziness, and central nervous system effects occur. Information is also provided concerning methanol (67561), ethylene-glycol (107211), diethylene-glycol (111466), propylene-glycol (57556), chloroform (67663), carbon-tetrachloride (56235), trichloroethylene (79016), tetrachloroethylene (127184), hexachlorocyclopentadiene (77474), vinyl-chloride (75014), and vinylidene-chloride (75354).
- KW - DCN-157104 ; Rubber manufacturing industry ; Paint manufacturing industry ; Leather industry ; Printing industry ; Cleaning compounds ; Glue manufacturing ; Shoe manufacturing ; Occupational exposure ; Organic solvents ; Metabolic study ; Dry cleaning industry ; Tissue distribution ; Toxic effects ; Carcinogens
- RN - 8006-61-9; 8008-20-6; 71-43-2; 108-88-3; 100-41-4; 67-56-1; 107-21-1; 111-46-6; 57-55-6; 67-66-3; 56-23-5; 79-01-6; 127-18-4; 77-47-4; 75-01-4; 75-35-4
- 35
- AU - Kessler E ; Brandt-Rauf PW
- SO - Occupational Medicine: State of the Art Reviews. Occupational Cancer and Carcinogenesis, Vol. 2, No. 1, P. W. Brandt-Rauf, Editor; Philadelphia, Pennsylvania, Hanley and Belfus, Inc., pages 155-163, 10 references, 1987
- TI - Occupational Cancers of the Brain and Bone
- AB - Occupational cancers of the brain and bone were discussed. Mortality and incidence of malignant tumors of the brain and central nervous system have been increasing since the 1940's for individuals over the age of 55. Although the etiology of primary brain tumors is not well understood, epidemiologic studies have linked occupation in synthetic rubber manufacturing, polyvinyl-chloride (9002862) production, oil refining, petrochemical production, and the nuclear industry to this disease. Vinyl-chloride (75014) manufacture is the only case where a single carcinogenic agent has been identified: in other industries, multiple chemical exposures occur and no one chemical or chemical process has been linked to an excess of brain tumors. Some of the exposures, however, are similar for these industries and include organic solvents, formaldehyde (50000), polycyclic aromatic hydrocarbons, lubricating oils, phenols, vinyl-chloride, and petroleum. Reported brain tumor excesses have been reported in embalmers, professional artists, and pathologists in association with use of formaldehyde and solvents, and in farmers in association with organochlorine pesticides. Brain tumors have been induced in experimental animals. An increased incidence of brain tumors (gliomas and neuromas) occurred in the offspring of pregnant rats injected intravenously with ethylnitrosourea (759739) during the latter half of pregnancy. Although these observations have not been carried over directly to human studies, the possibility has been raised in epidemiologic studies that children of fathers who work in hydrocarbon related occupations may be at increased risk of cancer, a large proportion of which have been nervous system cancers. Although cancer of the bone has been induced in animals by different chemicals, ionizing radiation is the

only known occupational agent to produce this disease in humans. Studies of radium dial painters working before 1925 demonstrated a dose response relationship between ingestion of bone seeking isotopes and osteosarcomas at calculated doses of over 1000 to 1200 rads. Chemically induced bone tumors have been produced by beryllium (7440417) and vinyl-chloride in rabbits and rats, respectively. These findings do not appear to carry over to human studies; however, the possibility that these agents could induce bone tumors in humans should merit serious consideration.

KW - DCN-156327 ; Occupational diseases ; Malignant neoplasms ; Bone cancer ; Risk factors ; Occupational exposure ; Health hazards ; Epidemiology ; Laboratory animals

RN - 9002-86-2; 75-01-4; 50-00-0; 759-73-9; 7440-41-7

36

AU - Rosenstock L ; Cullen MR

SO - Clinical Occupational Medicine; Philadelphia, Pennsylvania, W. B. Saunders Company, pages 118-134, 11 references, 1986

TI - Neurologic Disease

AB - Occupational diseases of the nervous system are discussed, including central nervous system disorders such as toxic encephalopathy (either acute or chronic), tumors, and Parkinsonian movement disorders as well as peripheral nervous system disorders such as toxic polyneuropathy, neuromuscular junction blockade and traumatic disorders including interstitial (vascular related to vibration) and parenchymal (compressive or entrapment mononeuropathy) disorders. Agents which have been shown to produce brain tumors in experimental animals are listed. Occupations in which epidemiologic studies suggest an excess of brain tumors include aluminum (7429905) workers, chemists, lead smelter workers, machinists, medical personnel, oil refinery workers, petrochemical workers, pharmaceutical workers, rubber workers, veterinarians, and vinyl-chloride (75014) workers. Substances which cause peripheral neuropathies fall into the following categories: metals including lead (7439921), arsenic (7440382), mercury (7439976), and thallium (7440280); solvents including hexacarbons, trichloroethylene (79016), and carbon-disulfide (75150); gases such as methyl-bromide (74839) and carbon-monoxide (630080); pesticides and herbicides including chlordane (143500), some organophosphates, and chlorinated phenol derivatives; and plastics including acrylamide (79061), dimethylaminopropionitrile (1738256), and styrene (9003536). A number of such agents can also cause central neuropathies, including organic solvents, asphyxiant gases, pesticides and heavy metals.

KW - DCN-154609 ; Nervous system disorders ; Neuropathology ; Occupational diseases ; Neurotoxic effects ; Neurotoxins ; Neurophysiology ; Occupational health ; Clinical diagnosis ; Clinical tests ; Chemical industry workers ; Pharmaceutical industry

RN - 7429-90-5; 75-01-4; 7439-92-1; 7440-38-2; 7439-97-6; 7440-28-0; 79-01-6; 75-15-0; 74-83-9; 630-08-0; 143-50-0; 79-06-1; 1738-25-6; 9003-53-6

37

AU - ANON

SO - World Health Organization, Office of Publications, 1211 Gen:ève 27, Switzerland, 1986. 272p. Bibl. Annexes.

TI - Early detection of occupational diseases

AB - This practical guide covers the symptoms, tests and actions to be taken for early detection of diseases. Section contain: principles;

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- main diseases (pneumoconiosis; bronchopulmonary diseases caused by hard metal dust; asthma; extrinsic allergic pneumonitis; diseases caused by compounds of beryllium, cadmium, phosphorus, chromium, manganese, arsenic, mercury, lead and fluorine; by carbon disulfide, halogenated hydrocarbons, benzene and some homologues, aniline and nitrobenzene, nitroglycerin and nitric acid esters, alcohols, glycols and ketones, carbon monoxide, hydrocyanic acid, hydrogen sulfide; hearing loss; diseases caused by vibration, compressed air, ionising radiation; skin diseases, skin cancer, infectious and parasitic diseases); clinical and laboratory tests (respiratory, nervous, blood, digestive, urinary, cardiovascular, locomotor systems); exposure assessment and biological monitoring.
- KW - EARLY DIAGNOSIS ; OCCUPATIONAL DISEASES ; WHO ; PNEUMOCONIOSIS ; BRONCHOPULMONARY DISEASES ; ASTHMA ; EXTRINSIC ALLERGIC ALVEOLITIS ; BERYLLIUM AND COMPOUNDS ; CADMIUM AND COMPOUNDS ; PHOSPHORUS AND COMPOUNDS ; CHROMIUM AND COMPOUNDS ; MANGANESE AND COMPOUNDS ; ARSENIC AND COMPOUNDS ; MERCURY AND COMPOUNDS ; LEAD AND COMPOUNDS ; FLUORINE AND COMPOUNDS ; HALOGENATED HYDROCARBONS ; POLYCHLORINATED BIPHENYLS ; NITRIC ACID ESTERS ; ALCOHOLS ; ALIPHATIC DIOLS ; KETONES ; HEARING LOSS ; VIBRATION DISEASE ; DECOMPRESSION SICKNESS ; IONISING RADIATION ; RADIATION DISEASE ; SKIN DISEASES ; INFECTIOUS DISEASES ; BIOLOGICAL AND MEDICAL TESTS ; RESPIRATORY DISEASES ; DISEASES OF NERVOUS SYSTEM ; DIGESTIVE SYSTEM DISEASES ; HAEMIC AND LYMPHATIC DISEASES ; GENITO-URINARY SYSTEM DISEASES ; CARDIOVASCULAR DISEASES ; MUSCULOSKELETAL DISEASES ; EXPOSURE EVALUATION ; EXPOSURE TESTS ; ILO
- RN - 75-15-0 ; 56-23-5 ; 79-01-6 ; 1335-87-1 ; 75-01-4 ; 71-43-2 ; 108-88-3 ; 1330-20-7 ; 62-53-3 ; 98-95-3 ; 55-63-0 ; 630-08-0 ; 74-90-8 ; 7783-06-4
- 38
- AU - Dinceva E ; Kolev P ; D:albokova D
- SO - Higiena i zdraveopazvane 1986, Vol.29, No.1, p.8-15. Illus. 14 ref.
- TI - EEG changes in workers with prolonged exposure to a mixture of organic solvents and vinyl chloride
- AB - EEG studies were carried out on 32 workers exposed to the long-term combined effects of organic solvents and vinyl chloride. Changes in EEG activity and visual evoked potentials (VEP) were found in more than half of the subjects examined: dominant alpha rhythm in the frontal and its inhibition in the occipital regions of the cortex; increased theta activity; episodes of hypersynchronous slow activity; spindles of high-voltage fast (beta) activity in the frontal leads; increased latent periods of the components of VEP. The changes described are discussed as early indicators of neurotoxic effects in the exposed workers.
- KW - ORGANIC SOLVENTS ; VINYL CHLORIDE ; SYNERGISM ; NEUROTOXIC EFFECTS ; ELECTROENCEPHALOGRAPHIC CHANGES ; ELECTROENCEPHALOGRAPHY ; FUNCTIONAL NERVOUS DISORDERS ; CENTRAL NERVOUS SYSTEM ; LATENCY ; ILO
- RN - 75-01-4
- 39
- AU - Magnavita N ; Bergamaschi A ; Garcovich A ; Giuliano G
- SO - Angiology, Vol. 37, No. 5, pages 382-388, 18 references, 1986
- TI - Vasculitic Purpura in Vinyl Chloride Disease: A Case Report
- AB - A case report of a purpuric rash as a feature of systemic vinyl-chloride (75014) disease was presented. A 36 year old man who had worked in a polyvinyl-chloride (9002862) producing plant for 7 years developed a peripheral vinyl-chloride neuropathy, Raynaud's

phenomenon, and acroosteolysis, secondary to vinyl-chloride exposure. With continued exposure to vinyl-chloride, he developed a purpuric rash on his lower extremities which was bilaterally symmetrical. The rash progressed from a macular rash to bullae, pustules and crusts. Spontaneous regression occurred after withdrawal of vinyl-chloride exposure, but redeveloped when exposure was resumed. Attempts to treat the rash with subcutaneous corticosteroid caused necrosis of the skin. Circulating immune complexes were increased and antismooth muscle cell antibodies were detected; both returned to normal after withdrawal of vinyl-chloride exposure and resolution of the rash. A skin biopsy confirmed the diagnosis of systemic vasculitis. The authors hypothesize that immunological changes play a role in the appearance of skin lesions secondary to vinyl-chloride exposure, and they emphasize the importance of recognizing a purpuric rash as a sign of vinyl-chloride poisoning.

- KW - DCN-152895 ; Occupational diseases ; Occupational exposure ; Case studies ; Chloride compounds ; Skin lesions ; Chemical manufacturing industry ; Chemical industry workers ; Neurovascular disorders ; Immunologic disorders

RN - 75-01-4; 9002-86-2

40

- AU - Perticoni GF ; Abbritti G ; Cantisani TA ; Bondi L ; Mauro L
SO - Electromyography and Clinical Neurophysiology, Vol. 26, No. 1, pages 41-47, 11 references, 1986

TI - Polineuropathy in Workers with Long Exposure to Vinyl Chloride. Electrophysiological Study

- AB - Neuropathy in a population of factory workers as a result of exposure to vinyl-chloride (75014) was evaluated. Of 89 employees in a vinyl-chloride polymerization plant, 64 individuals were examined by electromyography and electroneurography. The remaining 25 individuals were excluded from study due to exposure to neurotoxic agents other than vinyl-chloride, or because they suffered from diseases that impaired peripheral nerves. Slight changes in the peripheral nerve were detected in a very high percentage of the subjects. None had a marked reduction of the motor nerve conduction velocity. Results were incompatible with a significant segmentary demyelination of the nerve. A high number of the cases manifested axonal damage, which was predominantly limited to the more distal sections of the long nerves, and was most severe in the lower limbs. The most significant finding was a phenomenon due to changes in excitability of the motor units, as evidenced by fasciculations seen in a high percentage of the subjects. The authors conclude that non severe axonal damage exists, involving the motor nerve endings and probably also the peripheral sensory terminals, in the absence of impairment of nerve conduction.

- KW - DCN-152057 ; Chemical industry workers ; Neurological reactions ; Extremities ; Clinical pathology ; Muscle function ; Neuromotor disorders ; Toxic gases ; Sensory motor system ; Organic chemicals

RN - 75-01-4

41

- AU - Tabacova S
SO - NeuroToxicology, Vol. 7, No. 2, pages 421-440, 151 references, 1986
TI - Maternal Exposure to Environmental Chemicals
AB - Widespread contaminants of the workplace and general environment which are potential transplacental neurotoxicants were discussed. They are as follows: manganese (7439965), arsenic (7440382),

aromatic and chlorinated hydrocarbons, and hydrogen-sulfide (7783064). Maternal exposures to manganese probably occurred primarily under occupational conditions (dry cell battery production, chemical industry production, and use of fertilizers), rather than by accidental environmental exposure through contaminated food or water. Manganese penetrated the placental barrier in various animal species and man. Arsenic exposure may occur industrially as well as through ambient air, tobacco smoke, water, food, and beverages. Exposure to organic solvents such as toluene (108883), xylene (1330207), and styrene (100425) primarily occur in occupational setting and occurs in the chemical, plastic, pharmaceutical, printing, rubber, and leather industries. Occupational exposure was also a problem with chlorinated hydrocarbons, such as methylene-chloride (75092) and vinyl-chloride (75014). Accidents were the primary cause of excessive hydrogen-sulfide exposure. Review of literature data suggested that these environmental chemicals were potential neurobehavioral toxicants for the fetus and child. All are accessible to the fetus and child through transplacental passage, via breastmilk, or environmental contamination. Some of these chemicals have unfavorable metabolic characteristics and can induce congenital central nervous system defects or developmental neurobehavioral disturbances in animals.

- KW - DCN-151800 ; Transplacental exposure ; Organic chemicals ; Pollutants ; Central nervous system disorders ; Pregnancy ; Laboratory animals ; Epidemiology ; Workplace studies ; Chemical manufacturing industry ; Workers
- RN - 7439-96-5; 7440-38-2; 7783-06-4; 108-88-3; 1330-20-7; 100-42-5; 75-09-2; 75-01-4
- 42
- AU - Monster AC
- SO - Journal of Occupational Medicine, Vol. 28, No. 8, pages 583-588, 36 references, 1986
- TI - Biological Monitoring of Chlorinated Hydrocarbon Solvents
- AB - This review of the possibilities for biological monitoring of exposure to volatile halogenated hydrocarbons is based on the monograph to the Commission of the European Communities. The following halogenated hydrocarbon solvents were discussed: monochloromethane (74873), dichloromethane (75092), trichloromethane (67663), tetrachloromethane (56235), 1,2-dichloroethane (107062), monochloroethene (75014), trichloroethene (79016), tetrachloroethene (127184), and 1,1,1-trichloroethane (71556). Most of the solvents, to varying degrees, undergo biotransformation to metabolites. Biological assessment of exposure is possible by measurement of the solvent or its metabolites in exhaled air, blood, and urine. Formulas, metabolites, and possibilities for biological monitoring were presented for these halogenated hydrocarbon solvents. However, further research is necessary before even tentative data can be established for most of the solvents. Only for the solvents trichloroethene, tetrachloroethene, 1,1,1-trichloroethane and dichloromethane are the relations between environmental monitoring more or less available, and they are available only as group average values. These solvents differ widely in toxicity and in their threshold limit values. All are more or less nonflammable and liposoluble and all act on the nervous system.
- KW - DCN-151256 ; Biological monitoring ; Occupational exposure ; Toxic vapors ; Organic solvents ; Metabolites ; Carcinogenicity ; Hepatotoxicity ; Body burden ; Chlorinated hydrocarbons

RN - 74-87-3; 75-09-2; 67-66-3; 56-23-5; 107-06-2; 75-01-4; 79-01-6;
127-18-4; 71-55-6

43

AU - Thomas TL ; Waxweiler RJ
SO - Scandinavian Journal of Work, Environment and Health Feb. 1986,
Vol.12, No.1, p.1-15. 104 ref.
TI - Brain tumors and occupational risk factors
AB - Some studies have shown that certain white-collar professional
groups (artists, scientists, veterinarians, embalmers) and blue
collar workers (rubber, oil refineries and chemical plant workers,
machinists) appear to have an elevated risk of brain tumors. Most of
the workers are potentially exposed to multiple chemicals;
nevertheless they have some exposures in common: organic solvents,
lubricating oils, acrylonitrile, vinyl chloride, formaldehyde,
polycyclic aromatic hydrocarbons, and phenolic compounds.
KW - BRAIN CANCER ; HAZARD EVALUATION ; TOXIC SUBSTANCES ; LITERATURE
SURVEY ; EPIDEMIOLOGIC STUDY ; ORGANIC SOLVENTS ; POLYCYCLIC
HYDROCARBONS ; LUBRICATING OILS ; ILO
RN - 75-01-4 ; 107-13-1 ; 50-00-0

44

AU - Purchase IF ; Stafford J ; Paddle GM
SO - Food Chem Toxicol; VOL 25, ISS 2, 1987, P187-202 (REF: 67)
TI - Vinyl chloride: an assessment of the risk of occupational exposure.
AB - There is little doubt that exposure to high levels of VCM as a
consequence of occupation can result in an increased incidence of
ASL. A review of 20 epidemiological studies involving about 45,000
workers occupationally exposed to VCM showed that neoplasms of the
liver showed an increase in incidence in the majority of studies.
For brain cancer the association between exposure to VCM and an
increased incidence was less clear because of the lower relative
risk. Neoplasms of the respiratory tract, digestive system,
lymphatic and haemopoietic system, buccal cavity, and pharynx,
cardiovascular system and colon/stomach were reported to show an
increased incidence in one or more studies, but to show no increase,
or in some cases a decrease, in incidence in other studies. In view
of the increased incidence of breast neoplasms in rodents exposed to
VCM, the studies of Chaizze et al. (1980), who did not confirm these
findings in humans, are of importance. The register of ASL cases now
contains records of 99 persons with confirmed ASL and occupational
exposure to VCM. The average latent period between first exposure to
VCM and death from ASL is 21.9 years. The majority of cases occurred
in autoclave workers, who are recognized as having been exposed to
extremely high levels. Although precise estimates of exposure are
not available for the periods of most interest, the pattern of cases
roughly suggests that extremely high exposures were necessary for
the induction of ASL. For example, ASL cases tended to occur in
larger numbers in some plants than in others, a finding that can be
explained most easily by differences in exposure patterns. There is
an extensive series of animal studies on the carcinogenicity of VCM.
Some of these precede the epidemiological studies confirming the
association between VCM exposure and ASL in man. ASL and neoplasms
of a number of other organs have been induced in laboratory rodents
by VCM. Estimation of the exposure levels likely to cause a lifetime
risk of ASL of 10^{-6} on the basis of these data give extremely low
levels (down to 3.9×10^{-7} ppb) which appear to be unrealistic
estimates for man. Part of the reason for this is that laboratory
studies have shown that VCM is metabolized in the liver (and

R&S 002168

- elsewhere in the body) to the reactive metabolites chloroethylene oxide and chloroacetaldehyde. The rate of conversion is limited at high levels of exposure giving inaccurate estimates of the slope of the dose-response relationship. (ABSTRACT TRUNCATED AT 400 WORDS)
- KW - TOXBIB ; Air Pollutants, Occupational *TOXICITY ; Animal ; Dose-Response Relationship, Drug ; Environmental Exposure ; Female ; Hemangiosarcoma CHEMICALLY INDUCED ; Human ; Kinetics ; Liver Neoplasms CHEMICALLY INDUCED ; Male ; Occupational Diseases CHEMICALLY INDUCED ; Registries ; Review ; Risk ; Vinyl Chloride METABOLISM/*TOXICITY ; Vinyl Compounds *TOXICITY
- RN - 75-01-4
- 45
- AU - Monster AC
- SO - J Occup Med; VOL 28, ISS 8, 1986, P583-8
- TI - Biological monitoring of chlorinated hydrocarbon solvents.
- AB - The possibility of biological monitoring of exposure to some volatile, halogenated hydrocarbons will be discussed. Most of these agents are widely used as solvents. All agents act on the nervous system as narcotics and differ widely in toxicity. Most of the solvents undergo biotransformation to metabolites. This allows biological assessment of exposure by measurement of the solvent and/or metabolites in exhaled air, blood, and/or urine. However, the same metabolites may occur with exposure to different chlorinated hydrocarbons, eg, trichloroethanol and trichloroacetic acid from exposure to trichloroethene, tetrachloroethene, and 1,1,1-trichloroethane. On the other hand, these agents differ widely in the percentage that is metabolized. There are large gaps in our knowledge, however, and much research will have to be carried out before even tentative data can be established for most of the solvents.
- KW - TOXBIB ; Environmental Exposure ; Environmental Pollutants *ANALYSIS ; Ethylene Dichlorides ANALYSIS ; Human ; Hydrocarbons, Chlorinated ANALYSIS ; Methyl Chloride ANALYSIS ; Methylene Chloride ANALYSIS ; Occupational Diseases CHEMICALLY INDUCED/PREVENTION & CONTROL ; Solvents *ANALYSIS ; Trichloroethanes ANALYSIS ; Trichloroethylene ANALYSIS ; Vinyl Chloride ANALYSIS
- RN - 107-06-2; 74-87-3; 75-01-4; 75-09-2; 79-01-6
- 46
- AU - Perticoni GF ; Abbritti G ; Cantisani TA ; Bondi L ; Mauro L
- SO - Electromyogr Clin Neurophysiol; VOL 26, ISS 1, 1986, P41-7
- TI - Polyneuropathy in workers with long exposure to vinyl chloride. Electrophysiological study.
- KW - TOXBIB ; Electromyography * ; Human ; Neural Transmission *DRUG EFFECTS ; Occupational Diseases *CHEMICALLY INDUCED ; Peripheral Nerves DRUG EFFECTS ; Polyneuritis *CHEMICALLY INDUCED ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS
- RN - 75-01-4
- 47
- AU - Jones RD
- SO - Food Chem Toxicol; VOL 24, ISS 2, 1986, P99-103
- TI - Epidemiology of brain tumours in man and their relationship with chemical agents.
- AB - The 2000 or so deaths that result each year in England and Wales from brain tumours, as defined by ICD 191, represent approximately 0.3-0.4% of all deaths, with a slightly greater incidence in men than in women. Because of the low incidence of mortality from other

causes in childhood, brain cancer accounts for 3.5% of all deaths in the 1-14-year age group. Mortality from brain cancer increased considerably between 1931 and 1961 but this is probably explained by changes in disease classification and improvements in diagnostic techniques. Because of the relatively low incidence of brain cancer in man, cohort studies need to be large in order to accrue sufficient cases for meaningful interpretation. Large cohort studies may run the risk of diluting a high-risk group of workers with lesser or non-exposed individuals. These considerations have encouraged the investigation of brain cancer by case-control studies and the interpretation of these must take into account possible sources of bias. At present the evidence for any chemical causation of brain cancer in man is inconclusive.

- KW - TOXBIB ; Acrylonitrile ADVERSE EFFECTS ; Adolescence ; Adult ; Aged ; Brain Neoplasms CHEMICALLY INDUCED/*EPIDEMIOLOGY/MORTALITY ; Child ; Child, Preschool ; England ; Epidemiologic Methods ; Female ; Human ; Infant ; Male ; Middle Age ; Occupational Diseases EPIDEMIOLOGY ; Petroleum ; Rubber ADVERSE EFFECTS ; Sex Factors ; Vinyl Chloride ADVERSE EFFECTS ; Wales
RN - 107-13-1; 75-01-4; 9006-04-6

48

- AU - COOPER WC
SO - ENVIRON. HEALTH PERSPECT. 1981, 41() 101-106
TI - EPIDEMIOLOGIC STUDY OF VINYL CHLORIDE WORKERS: MORTALITY THROUGH DECEMBER 31, 1972.
AB - EIS: Epidemiology Information System
KW - VINYL CHLORIDE ; ANGIOSARCOMA ; CHEMICALLY INDUCED ; MORTALITY ; BRAIN NEOPLASMS ; MORTALITY ; FOLLOW-UP STUDIES ; HUMAN ; LIVER NEOPLASMS ; MALE ; NEOPLASMS ; OCCUPATIONAL DISEASES ; TIME FACTORS ; RESPIRATORY TRACT NEOPLASMS ; NERVOUS SYSTEM NEOPLASMS ; UNITED STATES ; VINYL COMPOUNDS ; DIGESTIVE SYSTEM NEOPLASMS ; ADVERSE EFFECTS
RN - 75-01-4

49

- AU - BEAUMONT JJ ; BRESLOW NE
SO - AM. J. EPIDEMIOL. 1981, 114(5) 725-734
TI - POWER CONSIDERATIONS IN EPIDEMIOLOGIC STUDIES OF VINYL CHLORIDE WORKERS.
AB - EIS: Epidemiology Information System
KW - VINYL CHLORIDE ; BRAIN NEOPLASMS ; CHEMICALLY INDUCED ; MORTALITY ; EPIDEMIOLOGIC METHODS ; HUMAN ; LIVER NEOPLASMS ; LUNG NEOPLASMS ; OCCUPATIONAL DISEASES ; RETROSPECTIVE STUDIES ; REVIEW ; STATISTICS ; POISONING ; VINYL COMPOUNDS
RN - 75-01-4

50

- AU - REIF AE
SO - AM. SCI. 1981, 69() 437-447
TI - THE CAUSES OF CANCER. WHILE SOME CANCERS ARE GENETICALLY FATED TO APPEAR, MOST HAVE NOW BEEN TRACED TO ENVIRONMENTAL FACTORS
AB - EIS: Epidemiology Information System
KW - VINYL CHLORIDE ; VITAMIN A ; VITAMIN E ; ASCORBIC ACID ; SACCHARIN ; CHOLESTEROL ; ASBESTOS ; CHROMIUM ; NICKEL ; BENZENE ; ETHYLENE OXIDE ; ESTROGEN ; NICOTINAMIDE ; BENZOPYRENE ; HUMAN ; MALE ; FEMALE ; CHILD, PRESCHOOL ; CHILD ; ADOLESCENCE ; ADULT ; MIDDLE AGE ; AGED ; AGE FACTORS ; CHEMICAL EFFECTS ; ENVIRONMENTAL EXPOSURE ; INCIDENCE ; MORTALITY ; NEOPLASMS ; OCCUPATIONAL DISEASES ; REVIEW ;

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- SEX FACTORS ; UNITED STATES ; CARCINOGENESIS ; SURVIVAL ; SMOKING ; COFFEE ; LEUKEMIA ; GENETICS ; MUTAGENESIS ; DIETARY FIBER ; DIETARY FATS ; COCARCINOGENESIS ; NITROSAMINES ; LIVER CIRRHOSIS ; PYRENES ; DIET ; AFLATOXINS ; ASPERGILLUS FLAVUS ; RICE ; HEPATITIS, VIRAL, HUMAN ; BEER ; FOOD ADDITIVES ; POLYCHLOROBIPHENYL COMPOUNDS ; AMINES ; RADIATION ; RADIATION EFFECTS ; SUNLIGHT ; ESTROGENS ; CONTRACEPTIVES, ORAL ; EPSTEIN-BARR VIRUS ; HERPESVIRIDAE ; HEPATITIS B VIRUS ; BLADDER NEOPLASMS ; BRAIN NEOPLASMS ; BREAST NEOPLASMS ; CERVIX NEOPLASMS ; COLONIC NEOPLASMS ; DIGESTIVE SYSTEM NEOPLASMS ; ESOPHAGEAL NEOPLASMS ; KIDNEY NEOPLASMS ; LIVER NEOPLASMS ; LUNG NEOPLASMS ; MOUTH NEOPLASMS ; OVARIAN NEOPLASMS ; PANCREATIC NEOPLASMS ; PROSTATIC NEOPLASMS ; RECTAL NEOPLASMS ; SKIN NEOPLASMS ; STOMACH NEOPLASMS ; UTERINE NEOPLASMS
- RN - 75-01-4 ; 68-26-8 ; 59-02-9 ; 50-81-7 ; 81-07-2 ; 57-88-5 ; 1332-21-4 ; 7440-47-3 ; 7440-02-0 ; 71-43-2 ; 75-21-8 ; 9055-96-3 ; 98-92-0 ; 73467-76-2
- 51
- AU - HOPKINS J
- SO - FOOD COSMET. TOXICOL. 1980, 18(1) 94-95
- TI - VINYL CHLORIDE. PART 4: CARCINOGENICITY IN MAN
- AB - EIS: Epidemiology Information System
- KW - VINYL CHLORIDE ; HUMAN ; MALE ; FEMALE ; OCCUPATIONAL MEDICINE ; MORTALITY ; NEOPLASMS ; OCCUPATIONAL DISEASES ; REVIEW ; RISK ; UNITED STATES ; CARCINOGENS ; LIVER NEOPLASMS ; ANGIOSARCOMA ; HISTOLOGY ; NETHERLANDS ; GREAT BRITAIN ; NERVOUS SYSTEM NEOPLASMS ; RESPIRATORY TRACT NEOPLASMS ; BILIARY TRACT NEOPLASMS ; LYMPHATIC SYSTEM ; HEMATOPOIETIC SYSTEM ; LIVER
- RN - 75-01-4
- 52
- AU - WAGONER JK ; INFANTE PF ; APFELDORF RB
- SO - J. TOXICOL. ENVIRON. HEALTH 1980, 6(5/6) 1101-1107
- TI - TOXICITY OF VINYL CHLORIDE AND POLYVINYL CHLORIDE AS SEEN THROUGH EPIDEMIOLOGIC OBSERVATIONS.
- AB - EIS: Epidemiology Information System
- KW - VINYL CHLORIDE ; POLYVINYL CHLORIDE ; ANGIOSARCOMA ; CHEMICALLY INDUCED ; BRAIN NEOPLASMS ; EPIDEMIOLOGIC METHODS ; HEPATITIS, TOXIC ; ETIOLOGY ; HUMAN ; LIVER NEOPLASMS ; LUNG NEOPLASMS ; LYMPHATIC DISEASES ; NEOPLASMS ; PNEUMOCONIOSIS ; TOXICITY ; POLYVINYL ; VINYL COMPOUNDS ; CHEMICAL INDUSTRY ; OCCUPATIONS
- RN - 75-01-4 ; 9002-86-2
- 53
- AU - AMERICAN INDUSTRIAL HEALTH COUNCIL, STEERING COMMITTEE
- SO - AM. IND. HEALTH COUNC. REP. 1978, 122 PP.
- TI - ESTIMATES OF THE FRACTION OF CANCER IN THE UNITED STATES RELATED TO OCCUPATIONAL FACTORS, REPLY AND DRAFT SUMMARY
- AB - EIS: Epidemiology Information System
- KW - VINYL CHLORIDE ; ARSENIC ; BENZENE ; CHROMIUM ; ASBESTOS ; NICKEL ; HUMAN ; MALE ; FEMALE ; ADOLESCENCE ; ADULT ; MIDDLE AGE ; AGED ; ADVERSE EFFECTS ; CHEMICALLY INDUCED ; COMPARATIVE STUDY ; ENVIRONMENTAL EXPOSURE ; ETIOLOGY ; FOLLOW-UP STUDIES ; INCIDENCE ; MORTALITY ; NEOPLASMS ; OCCUPATIONAL DISEASES ; REVIEW ; RISK ; TIME FACTORS ; TOXICITY ; UNITED STATES ; MESOTHELIOMA ; POLYCYCLIC HYDROCARBONS ; STATISTICS ; LUNG NEOPLASMS ; ESOPHAGEAL NEOPLASMS ; LYMPHATIC DISEASES ; RESPIRATORY TRACT NEOPLASMS ; EUROPE ; NASOPHARYNGEAL NEOPLASMS ; LEUKEMIA ; VINYL COMPOUNDS ; LIVER NEOPLASMS ; BRAIN NEOPLASMS ; GASTROINTESTINAL NEOPLASMS ; LARYNGEAL

- NEOPLASMS ; SKIN NEOPLASMS ; GENITAL NEOPLASMS, MALE ; PANCREATIC
NEOPLASMS ; LYMPHOMA ; PROSTATIC NEOPLASMS ; BLADDER NEOPLASMS
RN - 75-01-4 ; 7440-38-2 ; 71-43-2 ; 7440-47-3 ; 1332-21-4 ; 7440-02-0
- 54
AU - INFANTE PF
SO - ENVIRON. HEALTH PERSPECT. 1981, 41() 89-94
TI - OBSERVATIONS OF THE SITE-SPECIFIC CARCINOGENICITY OF VINYL CHLORIDE
TO HUMANS.
AB - EIS: Epidemiology Information System
KW - VINYL CHLORIDE ; ADENOCARCINOMA ; CHEMICALLY INDUCED ; ANGIOSARCOMA
; BRAIN NEOPLASMS ; CARCINOMA ; EPIDEMIOLOGIC METHODS ; HUMAN ;
LEUKEMIA ; LIVER NEOPLASMS ; LUNG NEOPLASMS ; NEOPLASMS ;
OCCUPATIONAL DISEASES ; ORGAN SPECIFICITY ; ADVERSE EFFECTS ; VINYL
COMPOUNDS
RN - 75-01-4
- 55
AU - BINNS CH
SO - J. SOC. OCCUP. MED. 1979, 29(4) 134-141
TI - VINYL CHLORIDE: A REVIEW.
AB - EIS: Epidemiology Information System
KW - POLYVINYL CHLORIDE ; VINYL CHLORIDE ; ABNORMALITIES, DRUG-INDUCED ;
ANGIOSARCOMA ; CHEMICALLY INDUCED ; ANIMAL ; BRAIN NEOPLASMS ;
CHROMOSOME ABERRATIONS ; FEMALE ; HUMAN ; LIVER CIRRHOSIS ; LIVER
NEOPLASMS ; LUNG NEOPLASMS ; MALE ; MICE ; MUTATION ; DRUG EFFECTS ;
OCCUPATIONAL DISEASES ; OSTEOLYSIS ; PNEUMOCONIOSIS ; ETIOLOGY ;
POISONING ; POLYVINYLS ; PREGNANCY ; REVIEW ; VINYL COMPOUNDS
RN - 9002-86-2 ; 75-01-4
- 56
AU - O'Donoghue JL
SO - Neurotoxicity of Industrial and Commercial Chemicals, J. L.
O'Donoghue, Editor; CRC Press, Inc., Boca Raton, Florida, Vol. 2,
pages 99-126, 221 references, 1985
TI - Aliphatic Halogenated Hydrocarbons, Alcohols, and Acids and
Thioacids
AB - The toxic effects of aliphatic chlorinated, brominated, fluorinated
and iodinated hydrocarbons, alcohols, acids, and thioacids, were
reviewed, with emphasis on their action at the level of the central
nervous system in both man and experimental animals as well as their
metabolism and effects on other organs. According to available
evidence, 2-chloropropionic-acid (598787), 2-bromopropionic-acid
(598721), 2-bromobutyric-acid (80580), 1-bromopropionic-acid, and
1-bromopentane induced identical cerebellar granule cell necrosis
and had about the same toxic action in other organs;
2-mercaptopropionic-acid also induced identical granule cell damage.
Methyl-iodide (74884), methyl-bromide (74953), methyl-chloride
(74839) and methyl-chloride (75003) were also shown to induce signs,
symptoms or lesions of the cerebellum in both humans and
experimental animals. The toxic effects of vinyl-chloride (75014),
carbon-tetrachloride (56235), trichlorotrifluoroethane (76131),
trichloroethylene (79016), allyl-chloride (107051),
dichloroacetic-acid (79436) and 3-mercaptopropionic-acid (107960)
were also reviewed. The author concludes that many of the compounds
have an apparent affinity for the cerebellum.
KW - DCN-158155 ; Chlorinated hydrocarbons ; Brominated hydrocarbons ;
Fluorinated hydrocarbons ; Chlorinated ethanes ; Chlorinated
ethylenes ; Aliphatic hydrocarbons ; Toxicology ; Neurotoxicity ;

- Fumigants
- RN - 598-78-7; 598-72-1; 80-58-0; 74-88-4; 74-95-3; 74-83-9; 75-00-3;
75-01-4; 56-23-5; 76-13-1; 79-01-6; 107-05-1; 79-43-6; 107-96-0
- 57
- AU - Purchase IFH
- SO - Risk Quantitation and Regulatory Policy. 19 Banbury Report. Hoel, D. G., R. A. Merrill, and F. P. Perera, Editors; Cold Spring Harbor, New York, Cold Spring Harbor Laboratory, pages 175-186, 23 references, 1985
- TI - Carcinogenic Risk Assessment: A Toxicologist's View
- AB - A scheme for risk management is presented and discussed. Major components of risk management are: Hazard identification, hazard assessment, risk assessment, risk evaluation, and control measures. Carcinogenic risk assessment begins with an assessment of the hazard and relates it to actual circumstances of exposure. This requires an estimate of the hazard at doses well below those which are of practical use in laboratory experiments, judgement of the relevance of the hazard to man, and a projection of its magnitude. Low dose extrapolation by mathematical models fails to take into account complexities of biological processes and frequently relies on inadequate experimental data. Epidemiological studies on about 50,000 exposed people have confirmed that vinyl-chloride (75014) (VC) produces angiosarcoma of the liver and brain tumors, but have not provided adequate information on dose response due to lack of accurate exposure data. Present evidence suggests that the VC dose in man to produce a risk of 10^{-6} is likely to be in excess of 100 parts per billion. Observations on the metabolism and carcinogenic effect of trichloroethylene (79016) indicate that the compound is carcinogenic by a nongenetic mechanism, which involves stimulation of hepatic peroxisomes. Recent evidence indicates that clear thresholds may be present for genotoxic carcinogens. For nongenotoxic carcinogens, the threshold may be determined by establishing a limit for the primary toxic event. Data derived from human observations provide the most relevant risk estimation. Overall risk assessment is obtained by integration of data from experimental work, epidemiology, and extent of exposure.
- KW - DCN-152015 ; Biohazards ; Hazardous materials ; Risk analysis ; Risk factors ; Carcinogenesis ; Dose response ; Chemical properties ; Toxicology
- RN - 75-01-4; 79-01-6
- 58
- AU - Bi W ; Wang Y ; Huang M ; Meng D
- SO - Ecotoxicology and Environmental Safety, Vol. 10, No. 3, pages 281-289, 9 references, 1985
- TI - Effect Of Vinyl Chloride On Testis In Rats
- AB - The effects of exposure to vinyl-chloride (75014) (VC) on testicular lesions were studied in 300 male adult Wistar-rats. Animals were exposed via inhalation to 0, 10, 100, or 300 parts per million (ppm) VC for 6 hours per day, 6 days per week, up to 12 months. Animals were serially sacrificed at 3, 6, or 12 months of treatment, while the remainder were sacrificed after 18 months. Autopsies were performed, and testes, lungs, liver, heart, kidneys, spleen, and brain were examined visually and microscopically for focal and generalized lesions and hemorrhage. Pathological changes to the testes were graded according to the number of damaged testicular seminiferous tubules counted under the microscope. After VC exposure, the organ and body weight ratio for the kidney, liver,

spleen, and heart were increased, but those of the testis were decreased in month 6. The weights of testes were decreased and damage to the testicular seminiferous tubules was observed at incidence rates of 18.9, 29.7, 36.5, and 56.0 percent in the control, 10, 100, and 3,000ppm groups, respectively. The authors conclude that there is an obvious dose/response relation between the concentration of VC and the incidence of testis damage in exposed rats.

KW - DCN-146856 ; Biological effects ; Exposure levels ; Reproductive system ; Brain function ; Microscopic analysis ; Toxic materials ; Inhalants ; Dose response ; Pathology

RN - 75-01-4

59

AU - Moss AR

SO - Journal of Toxicology and Environmental Health, Vol. 16, No. 5, pages 703-711, 31 references, 1985

TI - Occupational Exposure And Brain Tumors

AB - Epidemiological and laboratory evidence of brain tumors caused by occupational exposure to carcinogens is reviewed. Brain tumors, and the glioma series tumors in particular, are considered likely suspects in the search for occupationally related tumors. Some evidence of an excess of brain tumors has been reported for rubber workers, chemists, workers exposed to vinyl-chloride (75014), and petrochemical workers. A NIOSH study published in 1976 observed a significantly increased relative risk for brain tumors among vinyl-chloride workers exposed more than 15 years. To date, vinyl-chloride is the only occupational chemical carcinogen identified as a central nervous system carcinogen. The excess risk of brain tumors might not have been recognized had they not been discovered in the study of the rarer angiosarcoma of the liver associated with vinyl-chloride exposure. Several studies have given reasonably clear indications of an association between petrochemical exposure and brain cancer. No specific causative factor has been identified. No occupational nervous system carcinogen has been identified for the rubber industry or for chemists. Recent studies show that nuclear fabrication workers also appear at increased risk of brain tumors as well as increased risk of melanoma. The author concludes that a coherent program of research is required for the petrochemical and nuclear fabrication industries where increased risk of brain tumors appears associated with occupation.

KW - DCN-144839 ; Occupational hazards ; Tumorigens ; Industrial exposures ; Exposure levels ; Carcinogenesis ; Workplace studies ; Brain function ; Environmental factors ; Cancer ; Epidemiology ; Health hazards

RN - 75-01-4

60

AU - James RC

SO - Industrial Toxicology: Safety and Health Applications in the Workplace, Williams, P. L., and J. L. Burson, Editors; Van Nostrand Reinhold Company, New York, pages 230-259, 15 references, 1985

TI - The Toxic Effects Of Organic Solvents

AB - General toxicities of the major classes of organic solvents are reviewed and structure/function relationships are examined. The two most common toxic effects of organic chemicals are depression of central nervous system activity and irritation of membranes and tissues, which may be accompanied by hepatotoxicity, nephrotoxicity, and cardiac arrhythmias induced by a sensitization of the heart to

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catecholamines. In general, the symptomatology of any particular hydrocarbon poisoning often provides little data on the specific solvent in question. The toxic properties of aliphatic organic solvents, both saturated and unsaturated, are described. It is noted that the unsaturated double bond in the hexene and heptene series apparently abolishes the neurotoxic effects observed with chronic hexane or heptane exposure, a change that could be related to an alteration in the metabolism of the olefinic compounds. The toxic properties of alicyclic solvents are noted. Aromatic hydrocarbon solvents are described and the distinguishing characteristics of the coma induced by such substances as benzene (71432) are considered. The toxicity of toluene (108883) and the xylenes is also described. The general toxicology of polycyclic aromatic hydrocarbons, their metabolites, tissue distribution, and metabolism as well as teratogenicity and carcinogenicity are discussed. The comparative toxicity of alcohols is examined and symptoms of poisoning by methanol (67561), ethanol (64175), and other alcohols are given. Irritating effects of aldehydes, their sensitizing properties, and mutagenic effects are discussed with attention given to formaldehyde (50000), acetaldehyde (75070), acrolein (107028), chloral (75876), and chloral-hydrate (302170). The toxic properties of ketones, including acetone (67641) and methylisopropenylketone (814788) are examined. Toxic properties of carboxylic acids, esters, ethers, phenols, halogenated alkanes, particularly vinyl-chloride (75014), amides, aliphatic nitro compounds, and nitriles are discussed. The corrosive properties of amine substituted chemicals, their absorption, methemoglobin formation, and sensitizing functions are reported.

- KW - DCN-143220 ; Toxic materials ; Neurotoxic effects ; Health hazards ; Metabolic study ; Hepatotoxicity ; Chemical properties ; Carcinogens ; Nephrotoxicity ; Biological effects
- RN - 71-43-2; 108-88-3; 67-56-1; 64-17-5; 50-00-0; 75-07-0; 107-02-8; 75-87-6; 302-17-0; 67-64-1; 814-78-8; 75-01-4

61

- AU - Kahn H
- SO - Scandinavian Journal of Work, Environment and Health, Vol. 11, No. 4, pages 241-248, 61 references, 1985
- TI - Research Results Of Soviet Scientists In Some Problems Of Occupational Medicine: Review Of The Years 1981-1984
- AB - Occupational medicine in Russia is reviewed. Maximum allowable concentrations in work zone air for new industrial toxic substances need to be established. These limits often consider mutagenic, teratogenic, and other biological effects. Special attention is being paid to substances that can be absorbed through the skin and to combined effects such as simultaneous exposure to carbon-monoxide (630080) and vibration. Occupational physiology and psychology studies are becoming more common. These have application in the early diagnosis of some types of industrial poisoning such as that due to chromium compounds. Studies of occupational pathology are becoming of greater interest. These have helped define vibration disease hypertension, which is thought to occur in as many as 20 percent of exposed workers. Diseases of the nervous system have been studied in miners of the far north. These diseases account for over 40 percent of the deaths in this group. Studies that deal with the mutagenicity of hazardous industrial substances or with the effect of these factors on reproduction are examined. Studies on the effect of methyl-methacrylate (80626) and vinyl-chloride (75014) on the sexuality of male workers indicate that sexual disturbances

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may be of use in early diagnosis. The author concludes that the rapid development of science and technology has broadened the problems of occupational health, making information exchanges between countries extremely important.

- KW - DCN-140607 ; Physiological measurements ; Industrial hazards ; Industrial exposures ; Physiology ; Industrial environment ; Industrial hygiene ; Workplace studies
RN - 630-08-0; 80-62-6; 75-01-4

62

- AU - Carpentier P ; Vila A ; Reymond F ; Puech AM ; Laperrousaz P ; Dimitriou R ; Franco A ; Maillion JM
SO - Archives des maladies professionnelles de médecine du travail et de sécurité sociale 1985, Vol.46, No.7-8, p.459-463. Illus. 18 ref.
TI - Chronic vinyl chloride poisoning and Raynaud's phenomenon
AB - Physiopathology of Raynaud's phenomenon in 11 subjects with vinyl chloride disease. Results of various tests were compared with those of exposed subjects without Raynaud's phenomenon and with those of unexposed controls. While capillaroscopy showed no significant anomalies, plethysmography revealed a greater degree of cold-induced vasoconstriction among the exposed workers (with or without Raynaud's phenomenon) than among the controls. In particular, electrophysiological tests showed changes in peripheral nerve conduction velocity along the median and cubital nerves in exposed subjects with Raynaud's phenomenon, which is evidence for peripheral nerve dysfunction in vinyl chloride disease. This dysfunction might have a role in the physiopathology of Raynaud's phenomenon in this condition.
KW - RAYNAUD'S PHENOMENON ; CHRONIC POISONING ; VINYL CHLORIDE ; PLETHYSMOGRAPHY ; NERVOUS CONDUCTION ; NERVOUS FUNCTION TESTS ; DISEASES OF AUTONOMIC NERVOUS SYSTEM ; ILO
RN - 75-01-4

63

- AU - Holmberg B
SO - Progress in Clinical and Biological Research, Industrial Hazards of Plastics and Synthetic Elastomers, Vol. 141, Jarvisalo, J., P. Pfaffli, and H. Vainio, Editors; pages 99-112, 71 references, 1984
TI - The Toxicology Of Monomers Of The Polyvinyl Plastic Series
AB - The toxicology of monomers of the polyvinyl plastic series is reviewed. The polyvinyl series of thermoplastics is of great commercial and technical importance. Vinyl-chloride (75014) is widely produced for plastic production. Its acute toxicity is low in terms of lethality. The primary acute effect is central nervous system depression. Vinyl-chloride is rapidly absorbed by the lungs and is readily metabolized. It is mutagenic and is certainly a multipotential carcinogenic. Animal studies indicate that blood vessels are target tissues, a finding corroborated by human data showing skin capillary changes, Raynaud's phenomenon and acroosteolysis among workers exposed to polyvinyl-chloride (9002862). Liver involvement in chronic vinyl-chloride exposure was recognized later than the immediate effects of central nervous system depression and acroosteolysis. Occupational standards in many countries for vinyl-chloride exposure have been lowered in view of the tumors, particularly of the liver, associated with long term exposure. Vinylidene-chloride (75354), a vinyl-chloride copolymer, has considerable commercial importance as well. As a liquid it is irritating to the skin. The vapor can cause nasal irritation. Although not teratogenic in rats and rabbits, vinylidene-chloride is

mutagenic to Salmonella after microsomal activation and is mutagenic in some other cell types. In mice, rats and hamsters it is carcinogenic. Data on human populations is limited and no conclusions can yet be drawn about long term hazards. Vinyl-acetate (108054) is used in production of homopolymers and copolymers, and in synthesis of other chemicals. The acute toxicity is more moderate, and mutagenicity and carcinogenicity have not been demonstrated in animals. Vinylcyclohexene-dioxide is, however, a suspected carcinogen.

KW - DCN-146671 ; Toxic materials ; Hazardous materials ; Health hazards ; Liver function ; Skin exposure ; Chemical properties ; Exposure levels ; Industrial exposures ; Hepatotoxicity ; Inhalants ; Biological effects

RN - 75-01-4; 9002-86-2; 75-35-4; 108-05-4

64

AU - Hemminki K ; Lindbohm M-L ; Hemminki T ; Vainio H

SO - Progress in Clinical and Biological Research, Industrial Hazards of Plastics and Synthetic Elastomers, Vol. 141, Jarvisalo, J., P. Pfaffli, and H. Vainio, Editors; pages 79-87, 10 references, 1984

TI - Reproductive Hazards And Plastics Industry

AB - The effects of occupational exposures within the plastics industry on the reproductive system are reviewed. Paternal exposure to vinyl-chloride (75014) has resulted in increased rates of spontaneous abortions. Higher than average prevalence rates of malformations in offspring of plastics workers have been observed. Female workers exposed to styrene (100425) have had more spontaneous abortions than the average, and offspring with central nervous system malformations. Significantly more spontaneous abortions have occurred in a group of females exposed to ethylene-oxide (75218). Unpublished studies of plastics industry workers support the published findings. Because the plastics industry is likely to expand in the future, a special research effort is needed to evaluate the health effects of commonly used substances in the industry. Reproductive epidemiology has the potential of detecting occupational hazards with reasonable accuracy, relatively shortly after exposure. However, because reproductive epidemiology is a new discipline, it may be compounded by unknown selection mechanisms relating to pregnancy and employment that need to be resolved before causal relationships can be established.

KW - DCN-146528 ; Health hazards ; Epidemiology ; Occupational hazards ; Biological effects ; Reproductive effects ; Industrial environment ; Workplace studies ; Analytical methods ; Clinical symptoms ; Exposure levels

RN - 75-01-4; 100-42-5; 75-21-8

65

AU - Langauer-Lewowicka H ; Kurzbauer H ; Byczkowska Z ; Wocka-Marek T

SO - International Archives of Occupational and Environmental Health, Vol. 52, No. 2, pages 151-157, 21 references, 1983

TI - Vinyl Chloride Disease Neurological Disturbances

AB - The neurologic effects from vinyl-chloride (75014) (VC) exposure were evaluated among humans. A group of 155 males and 45 females employed for 1 to 25 years in a facility producing VC (SIC-2869) by the emulsion method was tested for neurological abnormalities. Laboratory tests for serum protein concentration, cholinesterase, thymol, glutamate-pyruvate-transaminase (GPT), and gamma-glutamyl-transpeptidase (gamma GTP) were performed. Reports of narcotic states were used to estimate air concentrations of VC.

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Smoking and alcohol habits were noted. Twenty nine percent of the workers had no complaints nor organic changes in the nervous system, 27 percent had asthenovegetative syndrome, and 44 percent had both asthenovegetative syndrome and organic neurological disorders. Many had headaches during the work day. Those with organic changes had pyramidal signs, cerebellar disturbances and trigeminal neuropathy, and three had extrapyramidal disturbances. There was an increase in gamma GTP among workers with neurological symptoms. No differences in serum protein concentration, GPT, thymol concentration, nor cholinesterase were found between the symptomatic and asymptomatic groups. Smoking and alcohol abuse was more frequent among workers without symptoms. About one half of the workers with neurological disease had been exposed to high VC concentration, based on the report of narcotic symptoms. The authors conclude that neurological troubles can develop from VC exposure.

KW - DCN-142247 ; Industrial chemicals ; Polymers ; Plastics ; Neurotoxic effects ; Occupational exposure ; Employee exposure ; Biological effects ; Medical research ; Medical surveys ; Physiological chemistry ; Enzyme activity

RN - 75-01-4

66

AU - Austin SG ; Schnatter AR

SO - Journal of Occupational Medicine, Vol. 25, No. 4, pages 313-320, 10 references, 1983

TI - A Case-Control Study Of Chemical Exposures And Brain Tumors In Petrochemical Workers

AB - The relationship between occupational chemical exposure and death due to brain tumors was investigated among petrochemical workers. Cases of 21 workers who died of primary brain tumors were compared to a group of workers who died of other neoplasms and a group whose deaths were unrelated to cancer. Exposure to benzene (71432), ethylene-dichloride (107062), ethylene-oxide (75218), diethyl-sulfate (64675), and vinyl-chloride (75014) was determined based on job. A group of 37 other chemicals to which four brain tumor cases had been exposed was studied. The proportion of cases exposed to a chemical was compared to the proportion of comparisons exposed to the same chemical. The proportion of glioma cases was calculated. A slightly higher proportion of brain tumor cases than comparisons were employed fewer than 10 years. Cases and comparisons were similar in year of hire, payroll status, and race. Fewer cases survived to 70 years of age. Exposure determinations could not be made for about 55 percent of the cases and about 59 percent of comparisons. Analyses using hourly workers, who are more likely to be exposed than salaried workers, indicated little difference between cases and comparisons. There appeared to be less frequent exposure to the 37 other chemicals among cases than comparisons. ~~X~~ The authors conclude that there is no evidence that exposures to the chemicals studied are related to brain tumor deaths.

KW - DCN-141124 ; Humans ; Employee exposure ; Quantitative analysis ; Disease incidence ; Industrial medicine ; Industrial chemicals ; Cancer rate ; Mortality surveys ; Risk analysis ; Toxicopathology

RN - 71-43-2; 107-06-2; 75-21-8; 64-67-5; 75-01-4

67

AU - Nicholson WJ ; Henneberger PK ; Seidman H

SO - Industrial Hazards of Plastics and Synthetic Elastomers, Jarvisalo, J., P. Pfaffli, and H. Vainio, Editors; Alan R. Liss, Inc., New

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- York, pages 155-175, 53 references, 1984
- TI - Occupational Hazards In The VC-PVC Industry
- AB - Occupational hazards in the vinyl-chloride (75014) (VC) polyvinyl-chloride (9002862) (PVC) industry are reviewed. Mortality studies of VC workers, examining 12 independent cohorts, show standardized mortality ratios (SMRs) for cancer of all sites ranging from 81 to 230 and SMRs for liver cancer ranging from 167 to 2,500. Hemangiosarcomas are reported in 8 of the 12 studies. Evidence for lung cancer is less clear, with SMRs for respiratory cancers in these studies ranging from 35 to 289. Cancers of the brain and central nervous system are significantly elevated in a number of the studies, although results differ considerably across studies. For lung, brain and central nervous system cancers, data from animals is equivocal. Follow up studies to determine whether a high risk of liver cancer continues, following significant exposure reductions made in 1974 when the link with VC was first recognized, show that the risk of neoplastic VC disease continues undiminished. Morbidity and clinical findings among VC exposed workers are described. Raynauds phenomenon, acroosteolysis, scleroderma like skin lesions, hepatomegaly and splenomegaly with non cirrhotic hepatic fibrosis, and severe portal hypertension are reported in association with past heavy VC exposures. Increased frequency of chromosome abnormalities in the lymphocyte cultures of VC workers are reported, but later sampling suggests decreased chromosomal abnormalities attributable to decreased exposures. In the PVC processing industry, documentation of only two hemangiosarcomas is reported. A proportionate mortality study of 4,341 deaths of former employees of 17 PVC facilities shows an excess in total cancer mortality in white males and females and an excess of breast cancer in females. Pulmonary deficits, X-ray abnormalities and perhaps lung cancer are associated with VC/PVC exposures. The authors conclude that studies of VC production workers suggest an enormously elevated risk of liver malignancies and the possibility of an increased risk of brain and central nervous system tumors. Engineering controls during polymer drying, bagging, and usage are warranted.
- KW - DCN-139854 ; Cancer ; Mortality data ; Industrial processes ; Polymers ; Exposure levels ; Accident potential ; Plasticizing ; Elastic properties ; Quantitative analysis ; Industrial engineering ; Accident prevention
- RN - 75-01-4; 9002-86-2
- 68
- AU - Holmberg B
- SO - Industrial Hazards of Plastics and Synthetic Elastomers, Jarvisalo, J., P. Pfaffli, and H. Vainio, Editors; Alan R. Liss, Inc., New York, pages 99-112, 72 references, 1984
- TI - The Toxicology Of Monomers Of The Polyvinyl Plastic Series
- AB - Studies on the toxicity of monomers of the polyvinyl plastic series are reviewed. Substances within the polyvinyl series include: polyvinyl-chloride (9002862); vinyl-chloride (75014) copolymers; polyvinylidene-chloride (9002851); polyvinyl-acetate (9003207); polyvinyl-alcohol (9002895); polyvinyl acetals; and polyvinyl ethers. The acute toxicity of vinyl-chloride is low in terms of lethality, but the agent is rapidly absorbed by the lung. Vinyl-chloride is both mutagenic and poses a carcinogenic risk to those exposed to the substance. Vinylidene-chloride has been found to irritate the skin and nasal passages of animals and is also considered carcinogenic in animals. Data on human populations is limited. Vinyl-acetate has affected livers, blood, and central

nervous systems of test animals. Vinyl-acetate has also been a nasal and eye irritant to humans. Vinylcyclohexene-dioxide (106876) is of low acute toxicity for test animals. Irritations of the skin, respiratory system, and the eyes have been observed. Although limited studies are available, the toxicological information on this agent suggests low exposure limits. Vinylcyclohexene-dioxide is a suspected carcinogen.

- KW - DCN-139316 ; Toxic effects ; Industrial hygiene ; Plastics ; Synthetic fibers ; Exposure limits ; Industrial hazards ; Plasticizers ; Elastic properties ; Synthetic materials ; Chemical analysis ; Toxic materials
- RN - 9002-86-2; 75-01-4; 9002-85-1; 9003-20-7; 9002-89-5; 106-87-6
- 69
- AU - Kalmaz EE ; Kalmaz GD
- SO - Regulatory Toxicology and Pharmacology, Vol. 4, No. 1, pages 13-27, 81 references, 1984
- TI - Carcinogenicity And Epidemiological Profile Analysis Of Vinyl Chloride And Polyvinyl Chloride
- AB - Carcinogenicity caused by vinyl-chloride (75014) and polyvinyl-chloride (9002862) exposure is reviewed. Vinyl-chloride and polyvinyl-chloride are among the most widely used synthetic organic chemicals. In the workplace, the production processes, the final product, and other materials used for production must be considered before valid toxicological and health effects can be assessed. Exposure in work environments is generally at higher concentrations than that which occurs in the general environment. A historical perspective of the carcinogenicity of vinyl-chloride and polyvinyl-chloride is given. Studies have indicated that workers in synthetic chemicals industries are susceptible to the toxicity and carcinogenicity of these chemicals. Bioassays demonstrate that vinyl-chloride and polyvinyl-chloride induced cancer is seen in the lung, liver, brain, and lymphatic system. Mutagenicity studies in humans and microorganisms demonstrate clearly that vinyl-chloride is a potent mutagen. Recent studies of liver cancer patients who were occupationally exposed to vinyl-chloride are summarized. The incidences of lung cancer and other complications in humans are described; mortality from lung and breast cancer of workers exposed to vinyl-chloride and polyvinyl-chloride is examined. The synthetic chemicals industry employs thousands of workers and these workers are exposed on an average to 0.1 milligram vinyl-chloride or polyvinyl-chloride per cubic meter of air.
- KW - DCN-138627 ; Carcinogenesis ; Quantitative analysis ; Cancer ; Biology ; Toxicology ; Analytical models ; Toxic materials ; Epidemiology ; Biological effects ; Analytical instruments ; Toxic effects
- RN - 75-01-4; 9002-86-2
- 70
- AU - Falk H
- SO - Environmental and Occupational Medicine, pages 579-588, 79 references, 1983
- TI - Vinyl Chloride And Polyvinyl Chloride
- AB - Medical and epidemiological findings involving vinyl-chloride (75014) (VC) and polyvinyl-chloride (9002862) (PVC) are reviewed. PVC is used in building and construction, home furnishings, recreational products, packaging, apparel, and transportation materials. Two very uncommon diseases, acroosteolysis and hepatic angiosarcoma, are linked to workers involved with PVC

polymerization. In acroosteolysis, the main symptoms include Raynaud's phenomenon, osteolysis in the terminal phalanges, and thickening of the skin or raised nodules on the hands and forearm. Acroosteolysis occurs primarily in workers involved in the manual cleaning of reactors. Recent reports have identified some systemic changes in skin, bones, and the sacroiliac joint. Vascular changes in the digital arteries of the hand are also associated with acroosteolysis, including narrowing of the lumen and partial or total occlusion. Hepatomegaly in VC workers is associated with abnormalities of liver function tests. The earliest findings in the precursor stage are areas of combined hyperplasia of hepatocytes and sinusoidal cells associated with an excess of reticulin and sinusoidal dilation. Exposure to PVC dust has resulted in deterioration of lung function, slight abnormalities of the chest radiograph, and complaints of slight dyspnea. Cytogenetic studies indicate increased frequencies of chromosomal aberrations of peripheral lymphocytes from VC exposed workers. High rates of congenital anomalies of the central nervous system have been reported in communities with PVC polymerization facilities. Other effects reported include hypertension changes and symptoms such as headaches and fatigue. Cases of hepatic angiosarcoma have been reported in individuals exposed to lesser concentrations of VC than PVC polymerization workers. Studies on animals have identified a multiplicity of tumors, in addition to hepatic angiosarcoma, following exposure to VC. OSHA requires that worker exposure to VC not exceed 1 part per million during an 8 hour time weighted average.

- KW - DCN-137809 ; Lung irritants ; Occupational exposure ; Industrial chemicals ; Health standards ; Gas detectors ; Exposure levels ; Lung lesions ; Toxicology ; Workers ; Industrial emissions ; Airborne particles
- RN - 75-01-4; 9002-86-2
- 71
- AU - Heinrichs WL
- SO - Clinical Obstetrics and Gynecology, Vol. 26, No. 2, pages 429-436, 16 references, 1983
- TI - Reproductive Hazards Of The Workplace And The Home
- AB - Chemicals that adversely interfere with human reproductive processes and that may be present in the home or workplace are discussed. Confirmation through animal studies of reproductive effects is also given. Discussed are alcohol (64175), aminopterin (54626), anesthetic gases, carbon-disulfide (75150), DDT (50293), dibromo-chloropropane (96128), diethylstilbestrol (56531) (DES), diphenylhydantoin (57410) (DPH), ethylene-dibromide (106934), hexachlorobenzene (118741), kepone (143500), lead (7439921) and other smelter emissions, methylmercury (22967926), polychlorinated biphenyls (PCBs), thalidomide (50351), cigarette smoke, vinyl-chloride (75014), and warfarin (81812). Chemicals of heavy metals and halogenated hydrocarbons frequently affect various reproductive processes. The substances discussed most commonly increased the number of abortions. They included aminopterin, anesthetic gases, carbon-disulfide, DES, vinyl-chloride, cigarette smoke, pesticides, lead, various laboratory chemicals, and DPH. Reduced birth weight can be caused by alcohol, anesthetic gases, lead, pesticides, and PCBs. Carbon-disulfide, DDT, DES, lead, warfarin, and cigarette smoking contribute to premature births. Other chemicals can cause such problems as stillbirth, congenital malformations, libido or erection failure, azoospermia, testicular

- atrophy, decreased fertility, skeletal and central nervous system anomalies, menstrual disorders, and increased infant death rates.
- KW - DCN-136019 ; Pregnancy ; Health hazards ; Health surveys ; Trace substances ; Trace analysis ; Work environment ; Chemical analysis ; Workplace studies ; Trace metals ; Occupational hazards ; Environmental contamination
- RN - 64-17-5; 54-62-6; 75-15-0; 50-29-3; 96-12-8; 56-53-1; 57-41-0; 106-93-4; 118-74-1; 143-50-0; 7439-92-1; 22967-92-6; 50-35-1; 75-01-4; 81-81-2
- 72
- AU - Barhad B
- SO - Encyclopaedia of Occupational Health and Safety, Vol. 2, pages 1646-1649, 6 references, 1983
- TI - Petrochemicals
- AB - Health risks associated with exposure to petrochemicals are reviewed. The high pressures employed in certain petrochemical processes constitute a considerable fire and explosion hazard. The high temperatures encountered in other petrochemical processes may increase human susceptibility to toxic substance exposure. This hazard is compounded by the presence of impurities in atmospheric pollutants released by petrochemical processes. Experimental toxicology has demonstrated that peripheral neuropathies result from exposure to n-hexane (110543), methylbutylacetone, acrylamide (79061), and a mixture of n-hexane and toluene (108883). Occupational exposure to other substances contained in petrochemicals, such as vinyl-chloride (75014), benzene (71432), and bis-(chloromethyl)-ether, also produces a carcinogenic effect. Petrochemical exposure may result in mutagenicity; however, the disease most commonly encountered among petrochemical workers is allergic or mycotic dermatitis. Protective equipment geared to suit the individual requirements of a given work place should be issued. Workers should also receive preemployment and periodic medical examinations, adapted to the nature and degree of the hazard. Any contraindication of proximity to toxic substances should receive special attention.
- KW - DCN-135702 ; Industrial chemicals ; Organic chemicals ; Toxic effects ; Safety research ; Petroleum products ; Neurotoxic effects ; Protective measures ; Safety measures ; Medical monitoring ; Ventilation systems ; Air contamination
- RN - 110-54-3; 79-06-1; 108-88-3; 75-01-4; 71-43-2
- 73
- AU - Walles SAS ; Holmberg B
- SO - Cancer Letters, Vol. 25, No. 1, pages 13-18, 24 references, 1984
- TI - Induction Of Single-Strand Breaks In DNA Of Mice After Inhalation Of Vinyl Chloride
- AB - Vinyl-chloride (75014) induced single strand breaks in DNA were investigated in mice. Female NMRI-mice were exposed 6 hours a day, 5 days a week, to 500 parts per million vinyl-chloride. Animals were killed 2 or 18 hours after exposure and cells from liver, kidney, lung, spleen, and brain were examined for single strand breaks. Mice killed 2 hours after an exposure of 117 hours showed increased single strand breaks in the lungs, liver, and kidney, but not in the brain. A plateau was reached for the kidney and lungs after 80 and 120 hours of exposure, respectively. The livers showed a slight increase of single strand breaks throughout the exposure period. The spleen showed a statistically significant increase in single strand breaks only at 234 hours. The number of single strand

- breaks after 234 hours of exposure was similar for kidney, lungs, and liver. Mice killed 18 hours after vinyl-chloride exposure showed normal single strand break values for kidneys, lung, and liver at 36 hours. After 114 and 231 hours of exposure the single strand break value for kidney, lung, and liver remained elevated, even 18 hours after exposure had ended. Brain single strand break values were increased for 18 hours after 114 hours of vinyl-chloride exposure. The single strand break values in brain at other exposure periods were inconsistent. The authors conclude that the lung is the most sensitive organ for vinyl-chloride carcinogenicity in mice.
- KW - DCN-132971 ; Halogenated compounds ; Nucleic acids ; Kidney damage ; Tumorigenesis ; Quantitative analysis ; Kidneys ; Animal studies ; Liver ; Toxicology ; Tumorigens ; Tumors
- RN - 75-01-4
- 74
- AU - Wagoner JK
- SO - Environmental Health Perspectives, Vol. 52, pages 61-66, 41 references, 1983
- TI - Toxicity Of Vinyl Chloride And Poly(Vinyl Chloride): A Critical Review
- AB - The toxicity of vinyl-chloride (75014) (VC) and polyvinylchloride (9002862) (PVC) is reviewed. Adenomas and adenocarcinomas of the lung, angiosarcomas of the liver and other sites, lymphomas, mammary carcinomas, neuroblastomas of the brain, and other tumors have been induced in mice, rats, and hamsters exposed by inhalation to VC. Studies have shown an increased risk of liver angiosarcoma and cancers of other sites among employees of VC polymerization facilities. Indirect modes of exposure to VC have been shown to be associated with an excess risk of cancer. Liver angiosarcoma has been reported in individuals living less than 2 miles from facilities polymerizing VC or fabricating PVC. Experimental bioassay and epidemiological studies have shown high agreement for carcinogenicity of VC, specifically for liver angiosarcoma. The excess of liver angiosarcoma has been shown to persist from polymerization of VC to residences near such facilities. Experimental and epidemiological data indicate that PVC dust is probably associated with both neoplastic and non neoplastic respiratory effects.
- KW - DCN-126801 ; Plastics ; Adenocarcinomas ; Carcinogenicity ; Liver cancer ; Brain tumors ; Lung cancer ; Risk factors ; Occupational exposure ; Industrial emissions
- RN - 75-01-4; 9002-86-2
- 75
- AU - THERIAULT GP ; GOULET L
- SO - GEOGR MED; 13:25-34,1983
- TI - MALFORMATIONS IN A RESIDENTIAL COMMUNITY NEAR A VINYL CHLORIDE FACTORY
- AB - ETIC/ORNL
- KW - NERVOUS SYSTEM ; SENSE ORGANS ; CRANIUM AND FACE ; CARDIOVASCULAR SYSTEM ; RESPIRATORY SYSTEM ; DIGESTIVE SYSTEM ; UROGENITAL SYSTEM ; GENETICS ; VIABILITY, FERTILITY, AND MORTALITY ; ENDOCRINE SYSTEM ; MUSCULOSKELETAL SYSTEM ; VINYL CHLORIDE ; INDUSTRIAL PROXIMITY ; SEX ; YEAR ; MAMMAL,HUMAN ; HOMO SAPIENS
- RN - 75-01-4
- 76
- AU - HEMMINKI K ; LINDBOHN ML ; HEMMINKI T ; VAINIO H

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Neurotoxicology of Vinyl Chloride

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- SO - PROG CLIN BIOL RES; 141:79-87,1984
 TI - REPRODUCTIVE HAZARDS AND PLASTICS INDUSTRY, IN: INDUSTRIAL HAZARDS OF PLASTICS AND SYNTHETIC ELASTOMERS
 AB - ETIC/ORNL
 KW - VIABILITY, FERTILITY, AND MORTALITY ; MUSCULOSKELETAL SYSTEM ; CRANIUM AND FACE ; NERVOUS SYSTEM ; DIGESTIVE SYSTEM ; CARDIOVASCULAR SYSTEM ; OCCUPATION, PLASTIC INDUSTRY ; OCCUPATION, PHARMACEUTICAL INDUSTRY ; OCCUPATION, LAUNDRY ; AGE ; YEAR ; OCCUPATION, RAYON INDUSTRY ; VINYL CHLORIDE ; STYRENE ; ETHYLENE OXIDE ; MAMMAL, HUMAN ; FEMALE ; HOMO SAPIENS
 RN - 75-01-4; 100-42-5; 75-21-8
- 77
 AU - PONCELET F ; DUVERGER-VAN BOGAERT M ; LAMBOTTE-VANDEPAER M ; DE MEESTER C
 SO - MUTAGEN CARCINOGEN TERATOGEN IND POLLUT; 205-279,1984
 TI - MUTAGENICITY, CARCINOGENICITY, AND TERATOGENICITY OF INDUSTRIALLY IMPORTANT MONOMERS
 AB - ETIC/ORNL SEE: CA 100-97706
 KW - VIABILITY, FERTILITY, AND MORTALITY ; SENSE ORGANS ; CRANIUM AND FACE ; MUSCULOSKELETAL SYSTEM ; UROGENITAL SYSTEM ; NERVOUS SYSTEM ; GROWTH ; REPRODUCTIVE TOXICOLOGY ; VINYL CHLORIDE ; ACRYLONITRILE ; STYRENE ; VINYLIDENE CHLORIDE ; CHLOROBUTADIENE ; HEXACHLOROBUTADIENE
 RN - 75-01-4; 107-13-1; 100-42-5; 75-35-4; 126-99-8; 87-68-3
- 78
 AU - THERIAULT G ; ITURRA H ; GINGRAS S
 SO - TERATOLOGY; 27:359-370,1983
 TI - EVALUATION OF THE ASSOCIATION BETWEEN BIRTH DEFECTS AND EXPOSURE TO AMBIENT VINYL CHLORIDE
 AB - ETIC/ORNL SEE: BA 76-86226
 KW - VIABILITY, FERTILITY, AND MORTALITY ; MUSCULOSKELETAL SYSTEM ; CARDIOVASCULAR SYSTEM ; NERVOUS SYSTEM ; UROGENITAL SYSTEM ; RESPIRATORY SYSTEM ; SENSE ORGANS ; DIGESTIVE SYSTEM ; VINYL CHLORIDE ; INDUSTRIAL PROXIMITY ; SEASON ; YEAR ; MAMMAL, HUMAN ; HOMO SAPIENS
 RN - 75-01-4
- 79
 AU - Makarov IA
 SO - Gigiena truda i professional'nye zabolevaniya June 1984, No.6, p.19-23. 9 ref.
 TI - Sexual disorders in male workers occupationally exposed to methyl methacrylate and vinyl chloride
 AB - Questionnaire surveys of 198 workers in the plastics industry and 95 controls were supplemented with hormone assays in the case of 32 plastics workers and 10 controls. Both methyl methacrylate and vinyl chloride inhibit sexual activity. Vinyl chloride seems to act primarily via the central nervous system, while methyl methacrylate acts on the sex organs; both compounds produce toxic hypogonadism. Sexual dysfunction was seen in conjunction with other occupational diseases due to exposure to the monomers. The effects of methyl methacrylate disappear 1-2 years after cessation of exposure without special treatment; workers exposed to vinyl chloride should be treated with a testosterone preparation.
 KW - PLASTICS INDUSTRY ; METHYL METHACRYLATE ; VINYL CHLORIDE ; SEXUAL DISORDERS ; GONADOTROPIC EFFECTS ; NEURO-ENDOCRINE EFFECTS ; HORMONE THERAPY ; IMPOTENCE ; ILO

RN - 80-62-6 ; 75-01-4

80

AU - Rom WN ; Renzetti AD ; Lee JS ; Archer VE

SO - Little, Brown and Co., Medical Division, 34 Beacon Street, Boston, MA 02106, USA, 1983. 1015p. Illus. Over 4,000 ref. Index.

TI - Environmental and occupational medicine

AB - This textbook in 3 parts provides a clinical approach to occupational medicine. Part I covers environmental and occupational diseases by organ systems and includes discussions on the discipline of environmental and occupational disease; occupations that can be hazardous; tests used in the recognition, evaluation and treatment of occupational health problems. Part II covers various potentially hazardous environmental and occupational exposures including toxic metals, organic chemicals, radiation; aspects of the physical environment that can be harmful, e.g. noise, temperature and lighting. Part III covers legal aspects of the regulation and control of environmental and occupational diseases and exposures including information on the labour unions' perspective, workers' compensation, ethics in occupational medicine and the passage of legislation designed to maintain standards of occupational health and safety. New frontiers in occupational medicine are also discussed.

KW - OCCUPATIONAL DISEASES ; OCCUPATIONAL MEDICINE ; TOXICOLOGY ; HARMFUL SUBSTANCES ; MANUALS ; HISTORY ; STATISTICAL ASPECTS ; MUTAGENS ; CARCINOGENS ; GENETIC EFFECTS ; DIAGNOSIS ; LUNG DISEASES ; PNEUMOCONIOSIS ; ASBESTOSIS ; SILICOSIS ; BYSSINOSIS ; EXTRINSIC ALLERGIC ALVEOLITIS ; ASTHMA ; BRONCHITIS ; SKIN DISEASES ; DISEASES OF NERVOUS SYSTEM ; MUSCULOSKELETAL DISEASES ; HEART DISEASES ; INFECTIOUS DISEASES ; HAEMIC AND LYMPHATIC DISEASES ; GASTROINTESTINAL DISEASES ; GENITO-URINARY SYSTEM DISEASES ; MENTAL STRESS ; ORGANIC SOLVENTS ; POLYCYCLIC HYDROCARBONS ; PESTICIDES ; HALOGENATED ETHERS ; CHEMICAL PRODUCTS ; NITROSO AMINES ; NITROGLYCERINES ; INHALATION ANAESTHETICS ; IONISING RADIATION ; NON-IONISING RADIATION ; URANIUM MINING ; NOISE ; WORK IN PRESSURISED ATMOSPHERE ; ACCELERATION ; HIGH ALTITUDE ; HOT WORKPLACES ; ILO

RN - 7439-92-1 ; 7439-97-6 ; 7440-43-9 ; 7440-38-2 ; 7440-41-7 ; 7440-47-3 ; 7439-96-5 ; 7440-02-0 ; 96-12-8 ; 75-01-4 ; 9002-86-2 ; 79-06-1 ; 107-13-1 ; 584-84-9 ; 75-15-0 ; 106-99-0 ; 100-42-5 ; 87-86-5 ; 75-21-8

81

AU - Langauer-Lewowicka H ; Kurzbauer H ; Byczkowska Z ; Wocka-Marek T

SO - International Archives of Occupational and Environmental Health July 1983, Vol.52, No.2, p.151-157. 21 ref.

TI - Vinyl chloride disease - Neurological disturbances

AB - Of 200 workers producing polyvinyl chloride by the emulsion method, 54 had no signs or symptoms of nervous system disorders, 58 exhibited autonomic asthenia, and 88 a variety of syndromes and disturbances of the central nervous system. The commonest symptoms were headache, nervousness, decrease in physical strength, loss of memory, sleep disturbances and somnolence. Scleroderma-like skin changes were found in 10 subjects, of whom only 6 had neurological disturbances. Neurological findings were dose-related. Acroparaesthesia, Raynaud's syndrome, and elevated serum :-glutamic transpeptidase activity were significantly more frequent in workers with neurological disturbances. 62% of the latter, compared with 24% of those without symptoms, reported euphoric or narcotic states

R&S 002185

after exposure. Neurological disturbances may be related to short exposure to peak concentrations. It is suggested that the neurological disturbances are both toxic effects and secondary to adverse vascular effects

- KW - VINYL CHLORIDE ; NEUROTOXIC EFFECTS ; DISEASES OF AUTONOMIC NERVOUS SYSTEM ; CHEMICAL INDUSTRY ; LONG-TERM EXPOSURE ; DOSE-RESPONSE RELATIONSHIP ; DISEASES OF PERIPHERAL NERVOUS SYSTEM ; DISEASES OF CENTRAL NERVOUS SYSTEM ; SKIN DISEASES ; RAYNAUD'S PHENOMENON ; SHORT-TERM EXPOSURE ; ILO

RN - 75-01-4

82

- AU - WALLS S AS ; HOLMBERG B

SO - CANCER LETT; 25 (1). 1984 (RECD. 1985). 13-18.

AD - Unit Occupational Toxicology, Res. Dep., Natl. Board Occupational Safety Health, S-171 84 Solna, Swed.

TI - Induction of single-strand breaks in DNA of mice after inhalation of vinyl chloride.

AB - HEEP COPYRIGHT: BIOL ABS. Female mice were exposed to 500 ppm vinyl chloride (VC) for 6 h/day 5 days/wk for 1-8 wk. Groups of mice were killed at different times during this period. DNA damage, expressed as single-strand breaks (SSB), was studied in liver, kidneys, lungs, spleen and brain. The level of SSB increased in liver, kidneys, spleen and lungs with time of exposure and reached a plateau for kidneys and lungs after 80 and 120 h of exposure. In spleen there was only a slight increase in the SSB, and in brain no detectable increase was found.

RN - 75-01-4

83

- AU - MALTONI C ; ET AL

SO - MALTONI, C. ET AL. (ED.). ARCHIVES OF RESEARCH ON INDUSTRIAL CARCINOGENESIS, VOL. 2. EXPERIMENTAL RESEARCH ON VINYL CHLORIDE CARCINOGENESIS. V+533P. PRINCETON SCIENTIFIC PUBLISHERS, INC.: PRINCETON, N.J., USA. ILLUS. ISBN 0-911131-36-1.; 0 (0). 1984. V+533P.

TI - ARCHIVES OF RESEARCH ON INDUSTRIAL CARCINOGENESIS VOL. 2. EXPERIMENTAL RESEARCH ON VINYL CHLORIDE CARCINOGENESIS

AB - HEEP COPYRIGHT: BIOL ABS. RRM BOOK HUMAN WORKER ANIMAL LIVER CANCER PULMONARY ADENOMA LEUKEMIA BRAIN TUMOR EMBRYOTOXICITY MUTAGEN

RN - 75-01-4

84

- AU - LANGAUER-LEWOWICKA H ; KURZBAUER H ; BYCZKOWSKA Z ; WOCKA-MAREK T

SO - INT ARCH OCCUP ENVIRON HEALTH; 52 (2). 1983. 151-158.

AD - Institute of Occupational Medicine in the Mining and Metallurgical Industry, ul. Bieruta 12, PL-41-200 Sosnowiec, Poland.

TI - Vinyl chloride disease: Neurological disturbances.

AB - HEEP COPYRIGHT: BIOL ABS. In a plant producing vinyl chloride by the emulsion method 200 workers who were exposed to vinyl chloride for 1-25 yr (mean 14), 58 (i.e., 29%) were free of complaints and nervous disturbances. An asthenoautonomic syndrome was found in 54 (i.e., 27%) and in 88 (i.e., 44%) in combination with positive neurological findings, i.e., pyramidal syndromes (in 52), cerebellar disturbances (in 38), trigeminal neuropathy (in 24) and extrapyramidal symptoms (in 3), and in various combinations: pyramidal + cerebellar in 12, trigeminal + pyramidal in 7, trigeminal + cerebellar in 5. Headaches (48%), nervousness (26%), decrease in physical strength (16%), loss of memory (14%), sleeping

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disturbances and somnolence were the most frequent complaints. Scleroderma-like skin changes were found in 10 subjects, but only 6 had any neurological disturbances. Occupational exposure to vinyl chloride was lower in workers without neurological findings. Frequency of the arterial hypertension was the same in both groups; acroparesthesias, Raynaud's syndrome and increased gammaGTP (gamma-glutamyltranspeptidase) serum activity were significantly more frequent in workers with neurological disturbances. Sixty-two percent of the neurologically positive group (62%) and 24% of the negative group reported euphoric or narcotic states after exposure. This probably indicated episodic exposures to high concentrations of vinyl chloride. This difference pointed to a possibility that neurological disturbances may have been related to short exposures to peak concentrations. The neurological injury may have been a direct neurotoxic effect of vinyl chloride and secondary to vascular disorders.

RN - 75-01-4

85

AU - AUSTIN SG ; SCHNATTER AR

SO - J OCCUP MED; 25 (4). 1983. 313-320.

AD - Dep. Epidemiol., Union Carbide Corp., Old Ridgebury Road, Danbury, Conn. 06817.

TI - A case-control study of chemical exposures and brain tumors in petrochemical workers.

AB - HEEP COPYRIGHT: BIOL ABS. The relationship between chemical exposures and deaths attributable to primary brain tumors among employees of a Texas, (USA) petrochemical plant was investigated. Cases consisted of 21 deaths in which the underlying cause was confirmed as a primary brain tumor. Two control groups of 80 employees each were randomly selected from 450 decedents known to the company in June, 1979. Potential exposures while employed were compared between cases and controls for 5 known or suspect carcinogens (benzene, ethylene dichloride, ethylene oxide, diethyl sulfate, vinyl chloride). Exposure potentials were also compared for an additional 37 chemicals to which at least 4 cases were potentially exposed. Overall and 15 yr latency analyses were performed. The proportion of cases exposed to the 5 potentially carcinogenic chemicals (including vinyl chloride) were lower than or consistent with the proportion of exposed controls. No statistically significant differences between the proportions of cases and controls exposed to the 37 other chemicals were found.

RN - 107-06-2; 75-21-8; 75-01-4; 71-43-2; 64-67-5

86

AU - WARD JM ; RICE JM

SO - SELIKOFF, I. J. AND E. C. HAMMOND (ED.). ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, VOL. 381. BRAIN TUMORS IN THE CHEMICAL INDUSTRY; WORKSHOP, NEW YORK, N.Y., USA, OCT. 27-28, 1980. XI+364P. NEW YORK ACADEMY OF SCIENCES: NEW YORK, N.Y., USA. ILLUS. PAPER. ISBN 0-89766-152-4(PAPER); ISBN 0-89766-151-6(CLOTH).; 0 (0). 1982. P304-319.

TI - NATURALLY OCCURRING AND CHEMICALLY INDUCED BRAIN TUMORS OF RATS AND MICE IN CARCINOGENESIS BIOASSAYS

AB - HEEP COPYRIGHT: BIOL ABS. HUMAN NASAL EPITHELIUM OLFACTORY LOBE CARCINOMA

RN - 52731-41-6; 40626-95-7; 28895-91-2; 23315-05-1; 13860-69-0; 13256-32-1; 10309-79-2; 7227-91-0; 1335-32-6; 1120-71-4; 869-01-2; 759-73-9; 671-16-9; 621-64-7; 542-88-1; 503-29-7; 503-28-6;

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123-91-1; 120-71-8; 107-13-1; 106-93-4; 106-89-8; 96-12-8; 90-04-0;
77-78-1; 75-01-4; 66-27-3; 62-75-9; 62-50-0; 53-96-3

87

- AU - Moss AR
SO - J Toxicol Environ Health; VOL 16, ISS 5, 1985, P703-11
TI - Occupational exposure and brain tumors.
AB - Epidemiological evidence of an occupational risk of brain cancer has been reported in four industries where chemical exposures are likely, most recently in a series of prospective studies in the petrochemical industry. However, only in the case of vinyl chloride exposure has an occupational central nervous system carcinogen been identified. This report reviews the convergence of epidemiological and laboratory evidence that established the occupational carcinogenicity of vinyl chloride, and discusses in detail the current evidence for an occupational risk of brain tumors in the petrochemical industry.
KW - TOXBIB ; Animal ; Brain Neoplasms *CHEMICALLY INDUCED ; Chemical Industry * ; Environmental Exposure ; Female ; Glioma *CHEMICALLY INDUCED ; Human ; Male ; Occupational Diseases *CHEMICALLY INDUCED ; Support, U.S. Gov't, P.H.S. ; Vinyl Chloride *TOXICITY ; Vinyl Compounds *TOXICITY
RN - 75-01-4

88

- AU - Kellerov:a V
SO - J Hyg Epidemiol Microbiol Immunol; VOL 29, ISS 4, 1985, P337-46
TI - Electroencephalographic findings in workers exposed to benzene.
AB - Preventive EEG examination was carried out in 40 workers significantly exposed to benzene. The EEG findings were compared with those of a control group of 48 healthy persons, a group of 110 workers significantly exposed to toluene and xylene and a group of 236 workers exposed to vinyl chloride. The individuals exposed to benzene exhibited 22.5% of abnormal and 45% threshold findings, the abnormalities being episodic, diffuse or a combination of the two. The effect of benzene entailed a frequent (32.5%) occurrence of a characteristic frequency lability. Sleep phenomena were found in a total of 60% cases (37.5% cases reached stage 1 B3 while 15% reached stage 2 according to Roth [14]). The rapid onset of deeper sleep stages (in 30% cases) is considered typical for benzene exposure. The photic driving response often had an extended frequency range (a total of 61.1%, to beta frequencies only in 30.55%, to both beta and theta frequencies also in 30.55% of cases). The different EEG features characteristic of the neurotoxic action of various types of organic solvents make possible a more efficient diagnostics of the effects of these chemicals on the CNS.
KW - TOXBIB ; Adult ; Air Pollutants, Occupational *TOXICITY ; Benzene *TOXICITY ; Brain *DRUG EFFECTS ; Electroencephalography ; Female ; Human ; Male ; Middle Age ; Sleep DRUG EFFECTS ; Toluene TOXICITY ; Vinyl Chloride TOXICITY ; Xylenes TOXICITY
RN - 108-88-3; 71-43-2; 75-01-4

89

- AU - Halama J ; Becker-Stone S ; Halama JM
SO - Radiologe; VOL 25, ISS 1, 1985, P22-9
TI - [Hemangiosarcoma of the liver in workers of the PVC industry and other VC-induced diseases with angiologic-dermatologic, hepatologic, radiologic and neurologic symptoms]
AB - Occupational diseases resulting from exposure to vinyl chloride (VC)

- include angiosarcoma of the liver and other neoplasms. Among workers exposed to VC we have found capillary abnormalities in the extremities, with scleroderma and Raynaud syndrome, acro-osteolysis, neurological and psychiatric diseases and chromosome abnormalities, as well as abnormal liver metabolism and haematological findings.
- KW - TOXBIB ; Adult ; Case Report ; Chemical Industry ; English Abstract ; Hemangiosarcoma *CHEMICALLY INDUCED/RADIOGRAPHY ; Human ; Liver Neoplasms *CHEMICALLY INDUCED/RADIOGRAPHY ; Male ; Middle Age ; Nervous System Diseases *CHEMICALLY INDUCED ; Occupational Diseases *CHEMICALLY INDUCED/RADIOGRAPHY ; Organic Mental Disorders, Substance-Induced ETIOLOGY ; Osteolysis CHEMICALLY INDUCED ; Polyvinyl Chloride *ADVERSE EFFECTS ; Polyvinyls *ADVERSE EFFECTS ; Raynaud's Disease CHEMICALLY INDUCED ; Risk ; Scleroderma, Systemic CHEMICALLY INDUCED ; Skin Diseases *CHEMICALLY INDUCED ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS
- RN - 75-01-4; 9002-86-2
- 90
- AU - Walles SA ; Holmberg B
- SO - Cancer Lett; VOL 25, ISS 1, 1984, P13-8
- TI - Induction of single-strand breaks in DNA of mice after inhalation of vinyl chloride.
- AB - Female mice were exposed to 500 ppm vinyl chloride (VC) for 6 h/day 5 days/week for 1-8 weeks. Groups of mice were killed at different times during this period. DNA damage, expressed as single-strand breaks (SSB), was studied in liver, kidneys, lungs, spleen and brain. The level of SSB increased in liver, kidneys, spleen and lungs with time of exposure and reached a plateau for kidneys and lungs after 80 and 120 h of exposure. In spleen there was only a slight increase in the SSB, and in brain no detectable increase was found.
- KW - TOXBIB ; Animal ; Brain DRUG EFFECTS/METABOLISM ; DNA, Single-Stranded *METABOLISM ; Environmental Exposure ; Female ; Kidney DRUG EFFECTS/METABOLISM ; Liver DRUG EFFECTS/METABOLISM ; Lung DRUG EFFECTS/METABOLISM ; Mice ; Mice, Inbred Strains ; Spleen DRUG EFFECTS/METABOLISM ; Time Factors ; Vinyl Chloride *PHARMACOLOGY ; Vinyl Compounds *PHARMACOLOGY
- RN - 75-01-4
- 91
- AU - Kalmaz EE ; Kalmaz GD
- SO - Regul Toxicol Pharmacol; VOL 4, ISS 1, 1984, P13-27 (REF: 81)
- TI - Carcinogenicity and epidemiological profile analysis of vinyl chloride and polyvinyl chloride.
- AB - The carcinogenicity of vinyl chloride and polyvinyl chloride (VC/PVC) is reviewed with specific attention to the gaps in knowledge for risk estimation and epidemiological presentation of the available data. Although experimental studies have demonstrated the carcinogenicity and mutagenicity of VC/PVC in general, the epidemiologic studies available for review do not include an assessment of carcinogenic risk among humans exposed to these chemicals. This conclusion is based on the observation that the majority of cohort studies reviewed lacked sufficient statistical power because of small sample sizes. Further, in epidemiological studies, individuals were not followed over an adequate period of time during which cancer could become clinically manifest.
- KW - TOXBIB ; Animal ; Brain Neoplasms CHEMICALLY INDUCED ; Breast Neoplasms MORTALITY ; Carcinogens, Environmental * ; Chemistry ; Epidemiologic Methods ; Human ; Leukemia CHEMICALLY INDUCED ; Liver

Neoplasms CHEMICALLY INDUCED ; Lung Neoplasms CHEMICALLY INDUCED ;
Mutagens ; Occupational Diseases CHEMICALLY INDUCED/EPIDEMIOLOGY ;
Polyvinyl Chloride POISONING/*TOXICITY ; Polyvinyls *TOXICITY ;
Reproduction DRUG EFFECTS ; Review ; Teratogens ; United States ;
Vinyl Chloride POISONING/*TOXICITY ; Vinyl Compounds *TOXICITY

RN - 75-01-4; 9002-86-2

92

AU - Nicholson WJ ; Henneberger PK ; Seidman H

SO - Prog Clin Biol Res; VOL 141, 1984, P155-75

TI - Occupational hazards in the VC-PVC industry.

AB - Overall, the results of the analysis of 12 studies of VC production and polymerization workers demonstrate an enormously elevated risk of liver malignancies, the possibility of a twofold increased risk of brain and central nervous system tumors and perhaps, also, of malignancies of the lymphatic and hematopoietic system. However, the role of other agents cannot be excluded in the etiology of nonhepatic malignancies. Bronchogenic carcinoma does not appear to be increased from exposures to VC monomer, although a relationship to PVC dust was suggested in one study. These conclusions must be considered in light of limited data on workers followed more than 25 years from onset of exposure. Considering the numbers of observed and expected deaths in all studies, it would appear that the excess of malignancies at nonhepatic sites is less than the excess of liver tumors. Data presented elsewhere in this volume (Nicholson and Henneberger, 1983) suggest that exposure reductions in 1974 may have virtually eliminated the VC-associated risk of liver cancer if the current U.S. standard is met. To the extent that VC exposure is associated with other cancers, a similar risk reduction would be expected. Raynaud's phenomenon, acroosteolysis, scleroderma-like skin lesions, hepato- and splenomegaly with noncirrhotic hepatic fibrosis, and severe portal hypertension have been associated with past heavy exposures to VC. Evidence exists that the liver disease and portal hypertension may progress following cessation of exposure. However, all of the above syndromes were found largely in heavily exposed individuals. Their occurrence would be much less likely in workers exposed only to concentrations currently allowed. Pulmonary deficits, X-ray abnormalities, and, perhaps, lung cancer have been associated with VC/PVC exposure. Because of the possible contribution of PVC dust to these findings, engineering controls during polymer drying, bagging and usage are warranted.

KW - TOXBIB ; Chemical Industry * ; Hepatitis, Toxic EPIDEMIOLOGY ; Human ; Lung Neoplasms CHEMICALLY INDUCED/EPIDEMIOLOGY ; Neoplasms CHEMICALLY INDUCED/EPIDEMIOLOGY ; Occupational Diseases CHEMICALLY INDUCED/*EPIDEMIOLOGY/MORTALITY ; Polyvinyl Chloride *POISONING ; Polyvinyls *POISONING ; Vinyl Chloride *POISONING ; Vinyl Compounds *POISONING

RN - 75-01-4; 9002-86-2

93

AU - Wagoner JK

SO - Environ Health Perspect; VOL 52, 1983, P61-6 (REF: 41)

TI - Toxicity of vinyl chloride and poly(vinyl chloride): a critical review.

AB - In 1974, vinyl chloride (VC) was first reported in the open scientific literature to induce angiosarcoma of the liver both in humans and in animals. Additional research has now demonstrated the carcinogenicity of VC to other organs and at lower concentrations. The target organs for VC now clearly include the liver, brain and

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the lung, and probably the lymphohematopoietic system. The evidence for a carcinogenic risk has been extended to jobs associated with poly(vinyl chloride) exposure. Cases of liver angiosarcoma have been reported among individuals employed in PVC fabrication facilities and an epidemiological study has demonstrated a significant association between exposure to PVC dust and the risk of lung cancer mortality. Cases of angiosarcoma of the liver also have been reported among individuals living in near proximity to vinyl chloride-poly(vinyl chloride) plants. An association between PVC dust and pneumoconiosis also has been demonstrated. On the basis of findings, prudent control of PVC dust in the industrial setting is indicated.

KW - TOXBIB ; Environmental Exposure ; Hemangiosarcoma CHEMICALLY INDUCED ; Human ; Liver Neoplasms CHEMICALLY INDUCED ; Lung Neoplasms CHEMICALLY INDUCED ; Male ; Middle Age ; Neoplasms *CHEMICALLY INDUCED ; Occupational Diseases *CHEMICALLY INDUCED ; Pneumoconiosis ETIOLOGY ; Polyvinyl Chloride *ADVERSE EFFECTS ; Polyvinyls *ADVERSE EFFECTS ; Review ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS

RN - 75-01-4; 9002-86-2

94

AU - Langauer-Lewowicka H ; Kurzbauer H ; Byczkowska Z ; Wocka-Marek T

SO - Int Arch Occup Environ Health; VOL 52, ISS 2, 1983, P151-7

TI - Vinyl chloride disease-neurological disturbances.

AB - In a plant producing vinyl chloride by the emulsion method 200 workers who were exposed to vinyl chloride for 1 to 25 yr (mean 14), 58 (i.e. 29%) were free of complaints and nervous disturbances. An astheno-autonomic syndrome was found in 54 (i.e. 27%) and in 88 (i.e. 44%) in combination with positive neurological findings, i.e. pyramidal syndromes (in 52), cerebellar disturbances (in 38), trigeminal neuropathy (in 24) and extrapyramidal symptoms (in 3), in various combinations - pyramidal + cerebellar in 12, trigeminal + pyramidal in 7, trigeminal + cerebellar in 5. Headaches (48%), nervousness (26%), decrease in physical strength (16%), loss of memory (14%), sleeping disturbances and somnolence were the most frequent complaints. Scleroderma-like skin changes were found in ten subjects, but only six of them had any neurological disturbances. Occupational exposure to vinyl chloride was lower in workers without neurological findings. Frequency of the arterial hypertension was the same in both groups, whereas acroparesthesias, Raynaud's syndrome, and increased gamma GTP serum activity were significantly more frequent in workers with neurological disturbances. Sixty-two per cent of the neurologically positive group and only 24% of the negative group reported euphoric or narcotic states after exposure. This probably indicates episodic exposures to high concentrations of vinyl chloride. This difference points to a possibility that neurological disturbances may be related to short exposures to peak concentrations. The neurological injury may be both a direct neurotoxic effect of vinyl chloride and secondary to vascular disorders.

KW - TOXBIB ; Adult ; Air Pollutants, Occupational ANALYSIS ; Alcoholism COMPLICATIONS ; Blood Proteins METABOLISM ; Female ; Human ; Male ; Middle Age ; Nervous System Diseases *CHEMICALLY INDUCED ; Occupational Diseases *CHEMICALLY INDUCED ; Smoking ; Trigeminal Nerve DRUG EFFECTS ; Vinyl Chloride *ADVERSE EFFECTS/ANALYSIS ; Vinyl Compounds *ADVERSE EFFECTS

RN - 75-01-4

R&S 002191

95

- AU - Kellervova V
SO - Cesk Neurol Neurochir; VOL 46, ISS 2, 1983, P71-6
TI - [EEG tracings of workers exposed to vinyl chloride]
KW - TOXBIB ; Adolescence ; Adult ; Central Nervous System Diseases
*CHEMICALLY INDUCED/*DIAGNOSIS ; Electroencephalography * ; English
Abstract ; Female ; Human ; Male ; Middle Age ; Occupational
Diseases CHEMICALLY INDUCED/*DIAGNOSIS ; Vinyl Chloride *ADVERSE
EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS
RN - 75-01-4

96

- AU - Wagoner JK ; Infante PF ; Apfeldorf RB
SO - Occupational Cancer and Carcinogenesis, Vainio, H., M. Sorsa, and K.
Hemminki, Editors; Hemisphere Publishing Corporation, Washington,
D.C., pages 181-187, 23 references, 1981
TI - Toxicity Of Vinyl Chloride And Polyvinyl Chloride As Seen Through
Epidemiologic Observations
AB - The toxic effects of vinyl-chloride (75014) (VC) and
polyvinyl-chloride (9002862) (PVC) as determined by epidemiologic
studies are described. Several epidemiologic investigations have
indicated that occupational exposure to VC is associated with
increased risk of angiosarcoma of the liver. Studies of rats
administered PVC powder in their diet resulted in changes in the
liver. An excess of central nervous system cancer among VC workers
has been reported. In nine of ten cases, the cancer was classified
as glioblastoma. Inhalation of PVC dust has been associated with
pneumoconiosis. The results of X-rayed workers in a PVC production
factory suggest that PVC exposure for 5 years or more causes signs
of pneumoconiosis. None of the workers in areas without PVC dust
had pneumoconiosis. Lung cancer excesses have been associated with
both VC and PVC dust exposure. Some studies suggest that lymphatic
system cancers can be found among VC workers. The authors conclude
that further studies are needed. In the meanwhile PVC needs to be
controlled.
KW - DCN-139405 ; Lung ; Air monitoring ; Pulmonary disorders ;
Physiology ; Toxic effects ; Carcinomas ; Analytical models ; Toxic
materials ; Cancer ; Chemical analysis ; Physiological measurements
RN - 75-01-4; 9002-86-2

97

- AU - Landrigan PJ ; Rinsky RA ; Waxweiler RJ
SO - Proceedings of the Seventh Alaska Health Congress, May 6-8, 1982,
Energy, Health, and the Environment. The Health Impact of
Petrochemical Development, pages 84-96, 7 references, 1982
TI - Epidemiologic Assessment Of Occupational Illness Caused By Exposures
To Petrochemicals
AB - Four epidemiological surveys in the petrochemical industry were
reported. The first assessed the leukemia mortality of 1,006 rubber
hydrochloride (7647010) workers (SIC-2822) who had been exposed to
benzene (71432). The second study investigated the incidence of
brain tumor deaths among petrochemical workers (SIC-2911) who
produced ethylene-oxide (75218), vinyl-chloride (75014), acetates,
and ethylene-amines. The third study examined the occurrence of
acute peripheral neuropathy among workers at a facility that
produced plastic coated fabrics (SIC-2295). In the fourth study,
infertility of male pesticide workers (SIC-0721) who had been
exposed to dibromochloropropane (96128) was examined. Seven
leukemia deaths occurred among the rubber hydrochloride workers,

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where 1.25 deaths were expected. Twenty two brain tumor deaths occurred where 10.7 were expected among the petrochemical workers. Forty eight cases of acute peripheral neuropathy occurred among the workers at the plastic coated fabrics plant, and the cases were concentrated in the prints department where there had been in use a print solvent containing methyl-butyl-ketone (591786). Of the male pesticide workers, 13.1 were found to be azoospermic, as opposed to the expected 2.9 percent. Although the unexposed workers showed no symptoms of severe oligospermia, 16.8 percent of the exposed workers were found to have this condition. The authors conclude that these petrochemicals caused diseases or conditions relating to the occupation of the exposed subjects. Epidemiology is useful in evaluating occupational diseases caused by petrochemicals.

- KW - DCN-137385 ; NIOSH Author ; Medical research ; Medical surveys ; Disease incidence ; Risk analysis ; Occupational exposure ; Industrial chemicals ; Toxicopathology ; Mortality surveys ; Quantitative analysis ; Industrial medicine
RN - 7647-01-0; 71-43-2; 75-21-8; 75-01-4; 96-12-8; 591-78-6

98

- AU - BERGMAN K
SO - ARCH TOXICOL; 49:117-129,1982
TI - REACTIONS OF VINYL CHLORIDE WITH RNA AND DNA OF VARIOUS MOUSE TISSUES IN VIVO
AB - EMIC/ORNL SEE: CA 96-117063
KW - EN,DNA ALKYLATION ; VINYL CHLORIDE ; MAMMAL,MOUSE ; SOMATIC CELLS,SPLEEN ; SOMATIC CELLS,LIVER ; SOMATIC CELLS,BRAIN ; SOMATIC CELLS,KIDNEY ; SOMATIC CELLS,LUNG ; SOMATIC CELLS,PANCREAS ; SOMATIC CELLS,TESTIS ; GERM CELLS ; MALE ; MUS,NMRI
RN - 75-01-4

99

- AU - YASUDA M
SO - GEKKAN YAKUJI; 23:2283-2289,1981
TI - FETAL ANOMALIES FROM CHEMICAL SUBSTANCES
AB - ETIC/ORNL SEE: CA 96-63693
KW - VIABILITY, FERTILITY, AND MORTALITY ; MUSCULOSKELETAL SYSTEM ; GROWTH ; CRANIUM AND FACE ; NERVOUS SYSTEM ; METALS ; ANABASINE ; MYCOTOXINS ; PESTICIDES ; FOOD ADDITIVES ; FUNGICIDES ; COSMETICS ; SOLVENTS ; VINYL CHLORIDE ; POLYCHLORINATED BIPHENYLS ; POLYBROMINATED BIPHENYLS ; AIR POLLUTION
RN - 494-52-0; 75-01-4

100

- AU - THERIAULT GP ; ITURRA H ; GINGRAS S
SO - REPORT; (EPA 600/S1-81-057):6 PP,1981
TI - ASSOCIATION BETWEEN BIRTH DEFECTS AND EXPOSURE TO AMBIENT VINYL CHLORIDE
AB - ETIC/ORNL
KW - VIABILITY, FERTILITY, AND MORTALITY ; MUSCULOSKELETAL SYSTEM ; CARDIOVASCULAR SYSTEM ; NERVOUS SYSTEM ; UROGENITAL SYSTEM ; SENSE ORGANS ; RESPIRATORY SYSTEM ; YEAR ; OCCUPATION ; INDUSTRIAL PROXIMITY ; VINYL CHLORIDE ; SEASON ; MAMMAL,HUMAN ; HOMO SAPIENS
RN - 75-01-4

101

- AU - HATCH M ; KLINE J ; STEIN Z
SO - ENVIRON HEALTH PERSPECT; 41:195-201,1981
TI - POWER CONSIDERATIONS IN STUDIES OF REPRODUCTIVE EFFECTS OF VINYL

CHLORIDE AND SOME STRUCTURAL ANALOGS

- AB - ETIC/ORNL
KW - NERVOUS SYSTEM ; VIABILITY, FERTILITY, AND MORTALITY ; REPRODUCTIVE TOXICOLOGY ; ETHYLENE DIBROMIDE ; EPICHLOROHYDRIN ; VINYL CHLORIDE
RN - 106-93-4; 106-89-8; 75-01-4

102

- AU - CLEMMESSEN J
SO - MUTAT RES; 98:97-100,1982
TI - MUTAGENICITY AND TERATOGENICITY OF VINYL CHLORIDE MONOMER (VCM): EPIDEMIOLOGICAL EVIDENCE
AB - ETIC/ORNL
KW - VIABILITY, FERTILITY, AND MORTALITY ; NERVOUS SYSTEM ; VINYL CHLORIDE MONOMER ; OCCUPATION, PLASTIC INDUSTRY
RN - 75-01-4

103

- AU - JOHN JA ; SMITH FA ; SCHWETZ BA
SO - ENVIRON HEALTH PERSPECT; 41:171-177,1981
TI - VINYL CHLORIDE: INHALATION TERATOLOGY STUDY IN MICE, RATS AND RABBITS
AB - ETIC/ORNL SEE: CA 96-137688
KW - VIABILITY, FERTILITY, AND MORTALITY ; GROWTH ; CRANIUM AND FACE ; SENSE ORGANS ; CARDIOVASCULAR SYSTEM ; HEMIC AND LYMPHATIC SYSTEMS ; UROGENITAL SYSTEM ; NERVOUS SYSTEM ; DRUG INTERACTIONS ; VINYL CHLORIDE MONOMER ; ETHANOL ; MAMMAL, MOUSE ; MAMMAL, RAT ; MAMMAL, RABBIT ; FEMALE ; MUS, CF1 ; RATTUS, SPRAGUE-DAWLEY ; ORYCTOLAGUS, NEW ZEALAND WHITE
RN - 75-01-4; 64-17-5

104

- AU - Greiser E ; Reinl W ; Weber H
SO - Zentralblatt f:ur Arbeitsmedizin, Arbeitsschutz, Prophylaxe und Ergonomie Feb. 1982, Vol.32, No.2, p.44-62. 20 ref.
TI - Vinyl chloride exposure and mortality in German chemical workers in comparison to mortality of unexposed chemical workers and PVC fabricators
AB - Report of an epidemiological study of 7,021 workers in vinyl chloride (VC) production, 4,910 workers not exposed to VC, and 3,943 workers in polyvinyl chloride fabrication. The two exposed populationns showed an elevated total mortality level, due to tumours of the lymphatic and haematopoietic systems, cerebral malignancies, cardiac ischaemia and, especially, malignant hepatic tumours. Given the latency period of the malignant tumours and the high number of hepatic haemangiosarcomas, continued monitoring of the exposed population will be necessary.
KW - VINYL CHLORIDE ; POLYVINYL CHLORIDE ; MORTALITY ; NEOPLASMS ; PLASTICS INDUSTRY ; GERMANY (FED.REP.) ; EPIDEMIOLOGIC STUDY ; LONG-TERM STUDY ; LIVER TUMOUR ; BRAIN CANCER ; LYMPHOSARCOMA ; ANGIOSARCOMA ; ILO
RN - 75-01-4 ; 9002-86-2

105

- AU - Maltoni C ; Ciliberti A ; Carretti D
SO - Ann N Y Acad Sci; VOL 381, 1982, P216-49
TI - Experimental contributions in identifying brain potential carcinogens in the petrochemical industry.
KW - TOXBIB ; Acrylonitrile ; Animal ; Brain Neoplasms *CHEMICALLY INDUCED ; Carcinogens * ; Chemical Industry * ; Dichloroethylenes ;

R&S 002194

Ethylene Dichlorides ; Female ; Male ; Neoplasms, Experimental
CHEMICALLY INDUCED ; Occupational Diseases *CHEMICALLY INDUCED ;
Petroleum * ; Rats ; Rats, Inbred Strains ; Vinyl Chloride

RN - 107-13-1; 75-01-4

106

AU - Infante PF

SO - Environ Health Perspect; VOL 41, 1981, P89-94

TI - Observations of the site-specific carcinogenicity of vinyl chloride to humans.

AB - A review of epidemiologic studies of workers exposed to vinyl chloride (VC) was conducted. Some of these studies comprised small cohorts and thus were insensitive in the evaluation of carcinogenic response for sites that do not demonstrate a high relative risk. Other larger studies used methodology and design that precluded an interpretation of the results. Such limitations were acknowledged by some authors. Use of restrictive disease rubrics also lead to the submerging of sites that would have demonstrated significant excesses. For example, some investigators analyzed data for liver cancer deaths with the broad category of digestive system cancer deaths, while others combined data for CNS cancer deaths with the broad category of "other and unspecified cancer,;" and most studies analyzed information for lymphatic and hematopoietic system cancer deaths with all data combined. Only four of eight studies reviewed could demonstrate a significant excess of liver cancer among VC-exposed workers--a site confirmed in humans by 1974. In contrast, five of eight studies appear to demonstrate a significant excess of CNS cancer mortality. Workers exposed to VC also demonstrate a significant excess of mortality for lung cancer, while the data for lymphatic and hematopoietic system cancer are suggestive. Interpretation of cancer of the latter systems may have been clarified if investigators had not analyzed their data by broad disease classifications.

KW - TOXBIB ; Adenocarcinoma CHEMICALLY INDUCED ; Brain Neoplasms CHEMICALLY INDUCED ; Carcinoma CHEMICALLY INDUCED ; Epidemiologic Methods ; Hemangiosarcoma CHEMICALLY INDUCED ; Human ; Leukemia CHEMICALLY INDUCED ; Liver Neoplasms CHEMICALLY INDUCED ; Lung Neoplasms CHEMICALLY INDUCED ; Neoplasms *CHEMICALLY INDUCED ; Occupational Diseases *CHEMICALLY INDUCED ; Organ Specificity ; Support, U.S. Gov't, Non-P.H.S. ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS

RN - 75-01-4

107

AU - Cooper WC

SO - Environ Health Perspect; VOL 41, 1981, P101-6

TI - Epidemiologic study of vinyl chloride workers: mortality through December 31, 1972.

AB - A population of 10,173 men, employed in 37 plants, was identified as having worked for at least one year in jobs involving probable exposure to vinyl chloride monomer (VCM) prior to January 1, 1973. Of the 9677 men whose vital status was determined, 707 were known to have died. For 699, death certificates were obtained. The standardized mortality ratio (SMR) for all causes was 89, that for all malignancies was 104. The only type of malignancy found in significant excess was in the category of malignant neoplasms of the brain and other parts of the nervous system; 12 deaths occurred where 5.9 were expected, for an adjusted SMR of 203. There were slight but inconclusive upward trends in all malignancies, and for

R&S 002195

malignancies of the respiratory tract, digestive tract, and central nervous system associated with reported levels of maximum exposure to VCM. When groups in whom less than 20 years had elapsed from the first exposure were compared with those with 20 or more elapsed years, and 25 or more elapsed years, no significantly different SMR's were detected for major primary sites of malignancy. Plans for an updated study of mortality, to include deaths in the period 1973-1979 are briefly discussed.

- KW - TOXBIB ; Brain Neoplasms CHEMICALLY INDUCED/MORTALITY ; Follow-Up Studies ; Hemangiosarcoma CHEMICALLY INDUCED/MORTALITY ; Human ; Liver Neoplasms CHEMICALLY INDUCED/MORTALITY ; Male ; Neoplasms CHEMICALLY INDUCED/*MORTALITY ; Occupational Diseases CHEMICALLY INDUCED/*MORTALITY ; Support, Non-U.S. Gov't ; Time Factors ; United States ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS
- RN - 75-01-4

108

- AU - Si:nczuk-Walczak H ; G:uszc M
- SO - Med Pr; VOL 33, ISS 5-6, 1982, P349-54
- TI - [Various aspects of the clinical and electroencephalographic studies in workers chronically exposed to vinyl chloride]
- AB - The paper presents evaluation of the nervous system and bioelectric functioning of the brain (EEG) in 114 workers aged 20-62, employed in significant exposure to vinyl chloride for 1-28 years, on average--7.5 +/- 4.0. Clinical symptoms of the nervous system occurred in form of peripheral--vegetative syndrome with accompanying vasomotor disturbances of Raynaud syndrome type EEG yielded 39 (34,2%) correct and 75 (65,8%) incorrect records. Among incorrect records most frequent (32.5%) were low-voltage and flat records; of this--those with fast spindled activity and frequent changes typical for reduced wakefulness. The nature of clinical symptoms and EEG disturbances may point to the contribution of hypothalamus in the pathomechanism of changes in those chronically exposed to vinyl chloride.
- KW - TOXBIB ; Action Potentials DRUG EFFECTS ; Adult ; Air Pollutants *POISONING ; Air Pollutants, Occupational *POISONING ; Arm INNERVATION ; Brain *PHYSIOPATHOLOGY ; Electroencephalography ; English Abstract ; Human ; Leg INNERVATION ; Male ; Middle Age ; Paresthesia *CHEMICALLY INDUCED ; Raynaud's Disease *CHEMICALLY INDUCED ; Time Factors ; Vinyl Chloride *POISONING ; Vinyl Compounds *POISONING
- RN - 75-01-4

109

- AU - Langauer-Lewowicka H
- SO - Med Pr; VOL 33, ISS 1-3, 1982, P113-7
- TI - [Chronic toxic encephalopathies]
- AB - The aim of this report is to present the clinical picture of some chronic occupational encephalopathies and evolution of neurological disturbances. Of 177 diagnosed encephalopathies, 103 were induced by heavy metals (Mn, Hg, Pb) and 48 by organic solvents. Of 200 persons exposed to vinyl chloride, neurological signs were found in 26 cases. In manganose poisoning heavy encephalopathy with pyramidal and extrapyramidal disturbances proved to be progressive, in mercury chronic intoxication cerebellar symptoms and sensitive neuropathy were the most frequent. In some cases these neurological changes were either persistent or progressive or regressive. In chronic lead poisoning slight pyramidal and deliberative signs and sensitive

R&S 002196

polyneuropathy seemed to be the most typical. Chronic encephalopathy due to organic solvents was mostly subacute at the beginning, then a variety of clinical symptoms as well as partial or total regression were observed. Slight cerebellar signs and trigeminal sensitive neuropathy were the most frequent neurological findings in those exposed to vinyl chloride.

- KW - TOXBIB ; Basal Ganglia Diseases *CHEMICALLY INDUCED ; Chronic Disease ; English Abstract ; Human ; Lead Poisoning DIAGNOSIS ; Manganese POISONING ; Mercury Poisoning DIAGNOSIS ; Occupational Diseases *CHEMICALLY INDUCED ; Polyneuritis *CHEMICALLY INDUCED ; Solvents POISONING ; Vinyl Chloride POISONING
RN - 7439-96-5; 75-01-4

110

- AU - Emmerich KH ; Norpoth K
SO - J Cancer Res Clin Oncol; VOL 102, ISS 1, 1981, P1-11
TI - Malignant tumors after chronic exposure to vinyl chloride.
AB - Correlations between exposure to vinyl chloride and the development of malignant tumors in the liver have been known since 1974 and have been confirmed by many an experimental investigation. Based on the evaluation of mortality statistics from nine different countries an increased incidence of malignant tumors of the lung, the gastrointestinal tract, and the central nervous system (CNS), and of malignant lymphomas is documented in connection with exposure to vinyl chloride. Statistically significant increases, however, are only found in the incidence of malignant liver tumors. Metabolism and toxicology of vinyl chloride are discussed in detail.
KW - TOXBIB ; Animal ; Chromosome Aberrations ; Female ; Hamsters ; Human ; Kinetics ; Liver Neoplasms CHEMICALLY INDUCED ; Male ; Mice ; Neoplasms *CHEMICALLY INDUCED ; Occupational Diseases *CHEMICALLY INDUCED ; Rats ; Rats, Inbred Strains ; Vinyl Chloride *ADVERSE EFFECTS/METABOLISM ; Vinyl Compounds *ADVERSE EFFECTS
RN - 75-01-4

111

- AU - Beaumont JJ ; Breslow NE
SO - Am J Epidemiol; VOL 114, ISS 5, 1981, P725-34 (REF: 16)
TI - Power considerations in epidemiologic studies of vinyl chloride workers.
AB - Nine retrospective mortality studies of workers exposed to vinyl chloride were reviewed to determine whether differences in their hypothesis testing results might be due to differences in statistical power. Where possible, the power of each study was calculated for cancer of the lung, brain and liver. When power was taken into consideration, the results for liver and brain cancer were found to be consistent with an etiologic role for vinyl chloride. For lung cancer, the data were not consistent with an etiologic role in that two studies with very high power yielded negative results.
KW - TOXBIB ; Brain Neoplasms CHEMICALLY INDUCED/MORTALITY ; Epidemiologic Methods ; Human ; Liver Neoplasms CHEMICALLY INDUCED/MORTALITY ; Lung Neoplasms CHEMICALLY INDUCED/MORTALITY ; Occupational Diseases *CHEMICALLY INDUCED/MORTALITY ; Retrospective Studies ; Review ; Statistics * ; Vinyl Chloride *POISONING ; Vinyl Compounds *POISONING
RN - 75-01-4

112

- AU - St:yblou:a V ; Lambi V ; Chumcal O ; Kellerov:a V ; Pa:skov:a V ;

R&S 002197

- V:itovcov:a J ; Zlab L
- SO - J Hyg Epidemiol Microbiol Immunol; VOL 25, ISS 3, 1981, P233-43
- TI - Neurological changes in vinyl chloride-exposed workers.
- KW - TOXBIB ; Adolescence ; Adult ; Electroencephalography ; Female ; Human ; Male ; Middle Age ; Nervous System Diseases *CHEMICALLY INDUCED/DIAGNOSIS ; Occupational Diseases *CHEMICALLY INDUCED/DIAGNOSIS ; Time Factors ; Vinyl Chloride *ADVERSE EFFECTS ; Vinyl Compounds *ADVERSE EFFECTS
- RN - 75-01-4
- 113
- AU - BERGMAN K
- SO - ARCH TOXICOL; 49 (2). 1982. 117-130.
- AD - Toxicol. Lab., National Food Administration, Box 622, S-751 26 Uppsala, Sweden.
- TI - Reactions of vinyl chloride with RNA and DNA of various mouse tissues in vivo.
- AB - HEEP COPYRIGHT: BIOL ABS. The irreversible binding of ¹⁴C-vinyl chloride metabolites to RNA and DNA of mouse brain, lung, liver, kidney, spleen, pancreas and testes after a single i.p. injection was studied. Hydrolysates of nucleic acids from selected organs were separated on Aminex A6 for quantitation of alkylation products. Radioactivity in nucleic acids was registered in all organs with the exception of brain. RNA from spleen, pancreas and liver and DNA from spleen and liver contained the highest amounts of radioactivity. In nucleic acids from spleen and pancreas, organs of high metabolic activity, the entire radioactivity was metabolically incorporated as Cl-fragments. In RNA of kidney and liver a large part of the radioactivity was present as incorporated Cl-fragments but 3,N4-ethenocytidine (in kidney), and 1,N6-ethenoadenosine and 1,N6-ethenoadenine (in kidney and liver) were identified as alkylation products. In liver DNA incorporation of Cl-fragments was insignificant, indicating different interactions of vinyl chloride metabolites (Cl-fragments and alkylating products) with RNA and DNA. The elution profiles of radioactivity in hydrolysates of liver DNA were dominated by an alkylation product of unknown structure (probably a derivative of deoxyguanosine). Possibly 1,N6-ethenodeoxyadenosine and 1,N6-ethenoadenine were also present in liver DNA. Results were consistent with the ability of vinyl chloride to act as a multipotent carcinogen by alkylation of DNA in several tissues.
- RN - 75-01-4
- 114
- AU - COOPER WC
- SO - CONFERENCE TO REEVALUATE THE TOXICITY OF VINYL CHLORIDE MONOMER, POLY(VINYL CHLORIDE) AND STRUCTURAL ANALOGS, BETHESDA, MD., USA, MAR. 20-21, 1980. ENVIRON HEALTH PERSPECT; 41 (0). 1981 (RECD. 1982). 101-106.
- TI - EPIDEMIOLOGIC STUDY OF VINYL CHLORIDE WORKERS MORTALITY THROUGH DEC. 31 1972
- AB - HEEP COPYRIGHT: BIOL ABS. HUMAN RESPIRATORY TRACT MALIGNANCY DIGESTIVE TRACT MALIGNANCY BRAIN NEOPLASM USA
- RN - 75-01-4
- 115
- AU - INFANTE PF
- SO - CONFERENCE TO REEVALUATE THE TOXICITY OF VINYL CHLORIDE MONOMER, POLY(VINYL CHLORIDE) AND STRUCTURAL ANALOGS, BETHESDA, MD., USA,

MAR. 20-21, 1980. ENVIRON HEALTH PERSPECT; 41 (0). 1981 (RECD. 1982). 89-94.

TI - OBSERVATIONS OF THE SITE SPECIFIC CARCINOGENICITY OF VINYL CHLORIDE TO HUMANS

AB - HEEP COPYRIGHT: BIOL ABS. LIVER CANCER LUNG CANCER CENTRAL NERVOUS SYSTEM CANCER LYMPHATIC CANCER LEUKEMIA OCCUPATIONAL HAZARD

RN - 75-01-4

116

AU - BEAUMONT JJ ; BRESLOW NE

SO - 14TH ANNUAL MEETING OF THE SOCIETY FOR EPIDEMIOLOGIC RESEARCH, SNOWBIRD, UTAH, USA, JUNE 17-19, 1981. AM J EPIDEMIOL; 114 (3). 1981. 438.

TI - POWER CONSIDERATIONS IN EPIDEMIOLOGIC STUDIES OF VINYL CHLORIDE WORKERS

AB - HEEP COPYRIGHT: BIOL ABS. ABSTRACT HUMAN LUNG BRAIN LIVER CANCER MORTALITY

RN - 75-01-4

117

AU - EMMERICH KH ; NORPOTH K

SO - J CANCER RES CLIN ONCOL; 102 (1). 1981 (RECD. 1982). 1-12.

AD - Inst. Pathol., Univ. Muenster, Domagkstr. 17, D-4400 Muenster, W. Ger.

TI - Malignant tumors after chronic exposure to vinyl chloride.

AB - HEEP COPYRIGHT: BIOL ABS. Correlations between exposure to vinyl chloride and the development of malignant tumors in the liver have been known since 1974 and have been confirmed by many experimental investigations. Based on the evaluation of (human) mortality statistics from 9 different countries an increased incidence of malignant tumors of the lung, the gastrointestinal tract and the central nervous system (CNS) and of malignant lymphomas is documented in connection with exposure to vinyl chloride. Statistically significant increases were only found in the incidence of malignant liver tumors. Metabolism and toxicology of vinyl chloride are discussed in detail.

RN - 75-01-4

118

AU - BEAUMONT JJ ; BRESLOW NE

SO - AM J EPIDEMIOL; 114 (5). 1981. 725-734.

AD - Industrywide Studies Branch F-8, National Institute for Occupational Safety and Health, 4676 Columbia Parkway, Cincinnati, OH 45226.

TI - Power considerations in epidemiologic studies of vinyl chloride workers.

AB - HEEP COPYRIGHT: BIOL ABS. Nine retrospective mortality studies of workers exposed to vinyl chloride were reviewed to determine whether differences in their hypothesis testing results might be due to differences in statistical power. Where possible, the power of each study was calculated for cancer of the lung, brain and liver. When power was taken into consideration, the results for liver and brain cancer were consistent with an etiologic role for vinyl chloride. For lung cancer, the data were not consistent with an etiologic role, in that 2 studies with very high power yielded negative results.

RN - 75-01-4

SS 14 /C?

USER:

R&S 002199

disp
PROG:

SEARCH FORMULATION BEGINNING AT SS 1 :
((VINYL CHLORIDE (MH) OR VINYL CHLORIDE (KW)))
-- 562 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 2 :
(SS 1 OR VINYL CHLORIDE: (KW)) -- 573 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 3 :
(SS 2 OR 75-01-4) -- 1,479 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 4 :
(ALL NEUROPATH: OR ALL ELECTROPHYSIOL:) -- 5,837 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 5 :
(ALL NEUROPHYSIOL: OR ALL NERVOUS:) -- 33,701 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 6 :
(CNS) -- 2,964 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 7 :
(BRAIN OR BRAINS OR BRAIN :) -- 23,058 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 8 :
((EVOKED POTENTIAL (KW) OR EVOKED POTENTIALS (MH)))
-- 444 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 9 :
(SS 8 OR EVOKED POTENTIAL: (KW)) -- 1,013 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 10 :
(SS 4 OR SS 5 OR SS 6 OR SS 8 OR SS 9)
-- 39,476 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 11 :
(SS 3 AND SS 7) -- 61 ITEMS FOUND IN TOXLINE

SEARCH FORMULATION BEGINNING AT SS 12 :
(SS 3 AND SS 10) -- 79 ITEMS FOUND IN TOXLINE

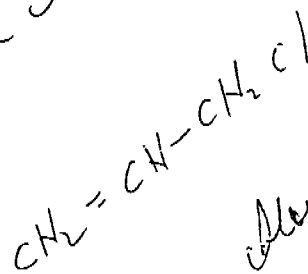
SEARCH FORMULATION BEGINNING AT SS 13 :
(SS 11 OR SS 12) -- 118 ITEMS FOUND IN TOXLINE

R&S 002200

Allyl chloride has not
undergone scrutiny as a
sensitizing chemical

Allyl chloride has not
undergone scrutiny as a
sensitizing chemical

Allyl chloride $\rightarrow$ polynuclear



allyl chloride $\rightarrow$ is an alkene $\rightarrow$ polynuclear

toluene diene

— dichloromethane

polynuclear
N-phenyl
chloride

in relation to reaction
products of allyl
chloride with
aromatic system
Trigonal
sees $\rightarrow$ ability to
have been
missed