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INTERNAL
CORRESPONDENCE

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FEB 18 1984

UNION CARBIDE CORPORATION

OLD RIDGEBURY ROAD DANBURY CT 06817

R. N. Wheeler, Jr.

To (Name) **Ms. Martha Friar**
Division **Law Department**
Location **Danbury**
Area **E3-287**

Date **February 12, 1985**
Originating Dept. **Insurance Department**
Area **Danbury - B4-155**

Copy to **Mr. R. N. Wheeler, Jr. LOC: 511**

Subject **NICOLINA SIRECI VS.
CHEMCO, INC., ET AL**

Dear Martha:

In accordance with our recent telephone conversation and in response to Mr. Wheeler's letter of January 16, 1985, listed below are the various UCC liability carriers for the period 1950 through 1981:

Aetna Casualty - 1950 Through April 10, 1970
Various Policy Numbers.

American Motorists Insurance Company (Kemper)
April 10, 1970 through 1981
Policy #02M 578 450

American Motorists Insurance Company
February 1, 1977 through January 1, 1982
Umbrella Policy #0SB 010 120

If you have any questions regarding the above, please do not hesitate to contact us.

Very truly yours,

EDDeLoughy:emd

Insurance Department

UCC
044695



UNION CARBIDE CORPORATION OLD RIDGEBURY ROAD, DANBURY, CT 06817
Corporate Health, Safety and Environmental Affairs Department

March 25, 1985

James V. O'Gara III, Esq.
Kelley, Drye & Warren
101 Park Avenue
New York, New York 10178

Re: Sireci vs. Chemco, Inc., et al
Rohm and Haas "Kydex"

Dear Mr. O'Gara:

Mr. Edwin H. Knauer's letter to you dated March 12, 1985, containing a general description of Rohm and Haas' manufacturing process, is adequate to technically demonstrate to me that use of "Kydex" by Elm Coated Fabrics would not expose its employees to enough vinyl chloride monomer to seriously affect their health. On consulting the plaintiff's complaint, however, the claim is that polyvinyl chloride is a carcinogen. "Kydex" admittedly contains polyvinyl chloride, thus Rohm and Haas is not home free yet.

One thing that disturbs me is that probably all the other defendants, except Union Carbide, could be excused by the same general approach, i.e., they supplied no PVC containing vinyl chloride monomer. This would leave UCC liable for the whole claim.

For your information, I am attaching a portion of a study done by NIOSH, the whole of which was never published. This was provided by James Jones as a favor with the understanding that a final report would someday be published. The Plant M described could be similar to Elm Coated Fabrics. The most disturbing part is that this plant employed 325 people with a total worker role for 25 years of operation, possibly 1100 people (turnover 5% per year). One in four will get cancer from natural causes and if 10% of the cancer cases sue UCC, we are looking at 27 additional claims down the road.

I worry a lot but I'd feel better if we knew who else sold PVC to Elm Coated Fabrics over the years.

Very truly yours,

R. N. Wheeler, Jr.

~~RNM, Jr./maw~~
Attachment

cc: Mr. L. A. Crisorio
Mr. R. Horowitz, Esq.

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DRAFT

WORKER EXPOSURE TO VINYL CHLORIDE
DURING PRODUCTION AND FABRICATION OF
VINYL CHLORIDE AND POLYVINYL CHLORIDE

James H. Jones

with contributions by
W.L. Barnhart, C.R. Toney, and J.B. Devlin
The Bendix Corporation
Launch Support Division
Cocoa Beach, Florida

NIOSH Contract CDC-99-74-50

U.S. Department of Health, Education and Welfare
Public Health Service
Center for Disease Control
National Institute for Occupational Safety and Health
Division of Surveillance, Hazard Evaluations and Field Studies
Cincinnati, Ohio

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The company was constantly revising its production procedures and equipment to take advantage of methods to increase production, lower operating costs, and increase the overall safety of its employees. The main changes that were made to the compounding operations were the changes in the mixing of compound ingredients in two-roll mills to Banbury mixers and then to ribbon-type blenders.

A cafeteria and designated smoking, drinking and eating areas had been provided for the employees. Respirators were not worn in the blender areas.

Figure A-5 shows a flow schematic of the processes used by Plant L to manufacture PVC products.

Plant M

This facility converted PVC resins and other compounding ingredients into calendered film and vinyl-coated supported and unsupported fabrics that were sold to a number of industries.

The company had been manufacturing products since 1947.

The plant normally operated 24 hours per day, 5 to 6 days a week. All manufacturing operations were performed indoors except the offloading of resin from bulk resin trucks to ground level storage silos. Resin from the silos was transferred by an airveyor system to a gravity supply hopper located on the roof of the plant.

The plant employed 325 people; however, only 50 workers were considered to be exposed to VC in their manufacturing operations. The following processes were used by this company to make their PVC products lines:

- bonding, in the lamination of two sheets of vinyl;
- calendering, in the high-speed conversion of a rope of PVC compound into continuous film or sheet stock of controlled width and thickness;
- compounding, in the mixing of PVC resins with plasticizers, stabilizers, fillers, lubricants, and other additives in ribbon-type blenders, and the conversion of the powdered blend into a plastic mass in Banbury mixers (color pigments and granulated trim stock and scrap are added in the Banbury mixers);
- extrusion, in the processing of the Banbury charge through a screen and extruder head to form a rope of PVC compound that is fed to a calender;
- foam making, in the expansion of cast plastisol film in a blowing/curing oven;
- plastisol making, in the compounding of plastisol mixtures used in the film casting line; and thermoforming, in the embossing of designs into PVC film and sheeting. The embossing operation was performed on the calendering lines and the cast film line.

The plant used roof-mounted ventilation fans, exhaust hoods, and ducts to supply fresh air and remove fumes and dust-laden atmospheres. The vented exhausts were passed through an electrostatic precipitator to remove entrained solids prior to venting to the atmosphere. The solids collected in the precipitator were burned as a fuel. Changes had recently been

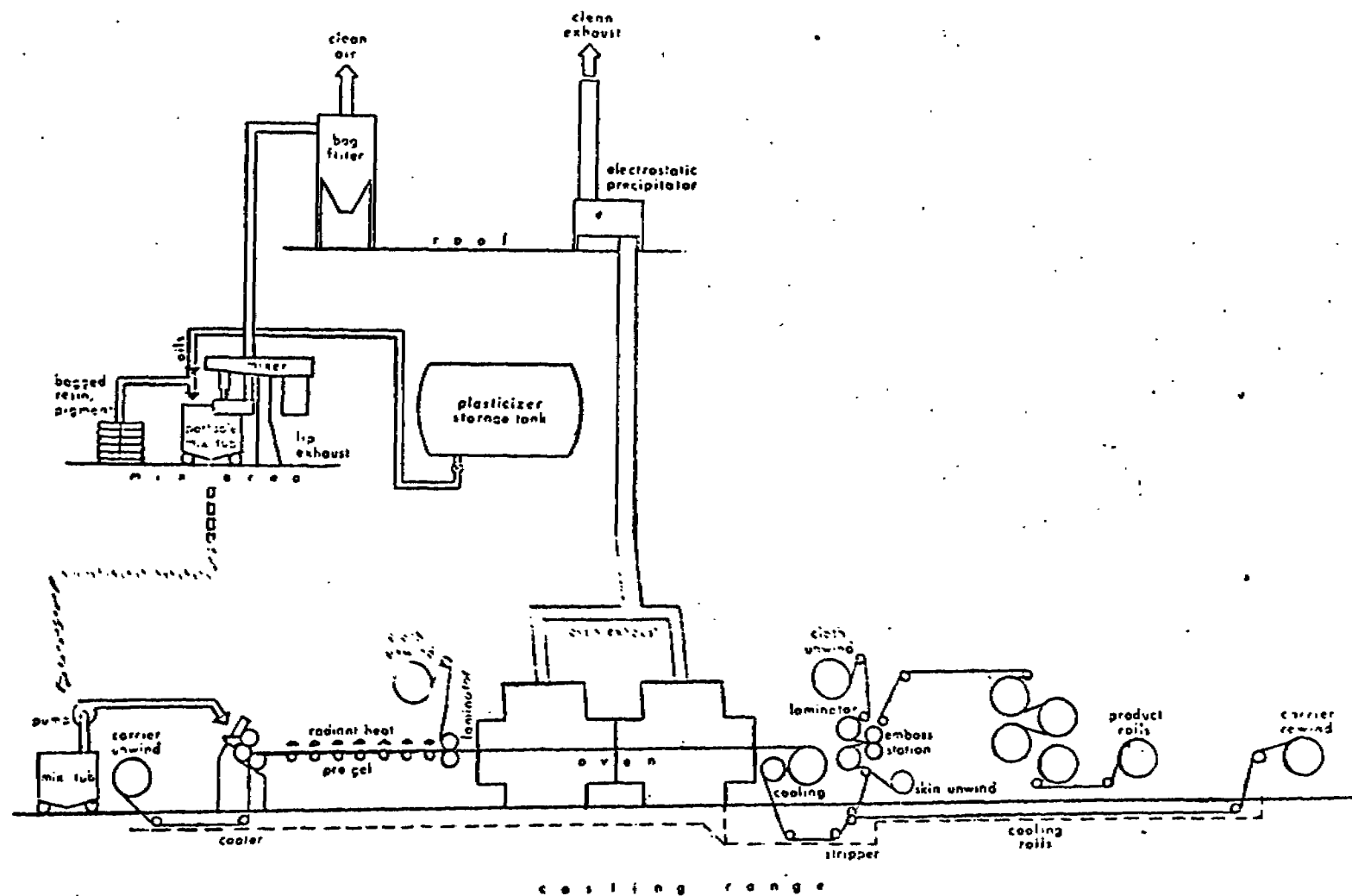


Figure A-6 Flow Schematic, Cast Film Production, Plant

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made to the ventilation system to reduce VC concentrations within the plant were: a 30-horsepower, roof-mounted exhaust fan and duct system were installed on each of the blenders to prevent the excursion of dry-blend compounds into the plant air; shrouded hoods were installed on the mills to reduce emissions; and conveyors to the mills were enclosed. A proposal was in the design stage to enclose the Banbury mixers with a duct system similar to the systems installed on the ribbon blenders.

The company had an active safety program and had recently initiated an area and personal sampling program using the carbon tube method and personal sampling pumps. The analyses of the carbon tubes were performed by an independent laboratory. The employees were informed of safety and health problems through bulletin boards and safety meetings. All employees entering work areas where higher-than-permissible levels of VC had been found or were possible were required to sign a form that listed the specific work area entered, and the time the area was entered and exited. Chemical cartridge type respirators were worn by the employees when working in dusty areas or when higher-than-permissible levels of VC were suspected.

A surveillance program for VC was initiated in November 1974. The results of the survey indicated a VC concentration range of 0.1 to 30.81 ppm based on area sampling over a 4-month period.

Eating, drinking, and smoking were restricted to specified areas or enclosed office areas.

Figure A-6 shows a flow schematic of the cast film production line for Plant M.

Figure A-7 shows a flow schematic of the calendered film lines for Plant M.

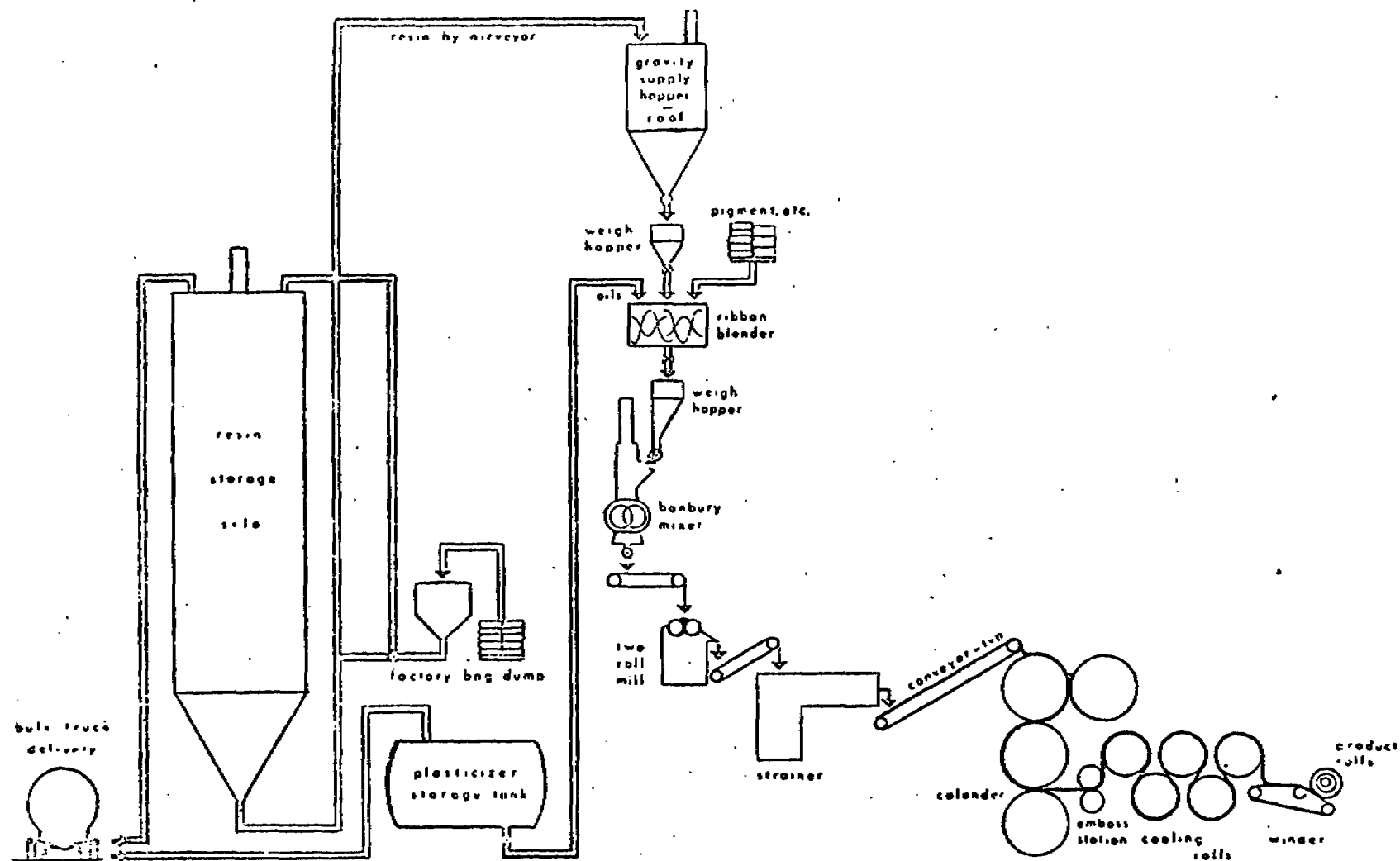


Figure A-7 Flow Schematic, Calendered Film Production, Plant

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Table C-58. Summary of Personal Sampling for Vinyl Chloride at Plant M.

Job	No. of Samples	Range (ppm)		% Samples Not Detectable	Arithmetic		Geometric		95% Confidence limits (from Geo. Mean & Std. Dev.) ppm	
		Low	High		Mean (ppm)	Std. Err. (ppm)	Mean (ppm)	Std. Dev.	Lower	Upper
Calender Personnel	1		0.02	0						
Compounding Personnel	11	<0.01	0.02	82	0.01					

158

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Table C-59. Results of Personal Sampling for Vinyl Chloride at Plant M, April 1975.

Job Title	Date	Shift	Man	Sample Time (min.)	V.C. Conc. (ppm)	8-hour TWA Conc. (ppm)
Calender Operator	4/9/75	1		180 180	0.02 0.02	0.02
Banbury Operator	4/9/75	1		180 180	<0.01 <0.01	<0.01
	4/10/75	1		180 182	<0.01 <0.01	<0.01
Blender Operator	4/9/75	1		180 180	<0.01 <0.01	<0.01
	4/10/75	1		186 174	<0.01 <0.01	<0.01
Color Weighman	4/9/75	1		180 180	<0.01 <0.01	<0.01
Feed Mill Oper.	4/10/75	1		195 167	<0.01 <0.01	<0.01
Mill Operator	4/9/75	1		180 180	<0.01 0.01	<0.01
Mix Mill Operator	4/10/75	1		196 164	0.01 <0.01	<0.01
Plastisol Blender	4/10/75	1	A	185 175	0.02 0.02	0.02

Table C-59 (con'd)

Job Title	Date	Shift	Man	Sample Time (min.)	V.C. Conc. (ppm)	8-hour TWA Conc. (ppm)
Plastisol Blender	4/10/75	1	B	184 176	0.02 0.02	0.02
Tower Worker	4/9/75	1		180 191	<0.01 <0.01	<0.01

Table C-60. Results of Area Sampling for Total Dust at Plant M, April 1975.

Area	Date	Shift	Sample Time (min.)	Total Dust Conc. (mg/m ³)
Banbury Mixer Area	4/9/75	1	15	13
Blender Area	4/9/75	1	15	1.7
Calender Area	4/10/75	1	15	6.7
Cast Film Area	4/10/75	1	15	7.3
Mill Area	4/9/75	1	15	6.7
Mixing Area	4/10/75	1	19	6.7
Plastisol Mixing Room	4/10/75	1	28	7.9

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GEORGE SIEGEL

COUNSEL

*NOT ADMITTED IN NEW YORK

March 18, 1985

Mr. R. N. Wheeler, Esq.
Union Carbide Corporation
P. O. Box 8361
South Charleston, West Virginia 25303

Re: Sireci v. Union Carbide Corporation

Dear Mr. Wheeler:

As we discussed some time ago, I requested counsel for Rohm and Haas to supply information with respect to the manufacturing process used to manufacture Kydex. I am enclosing a copy of a letter I recently received responding to this inquiry. Please let me know if the manufacturing process described constitutes a mixture or polymerization process.

Thank you for your cooperation and assistance in this matter.

Best regards.

Sincerely yours,

Jim
James V. O'Gara

JVO:mlc

Enclosure

UCC
044706

MORRIS & DUFFY
ATTORNEYS AT LAW
233 BROADWAY-SUITE 1800
NEW YORK, N. Y. 10279-0130
—
AREA CODE 212 - 766-1888

March 12, 1985

James V. O'Gara, III, Esq.
Kelley, Drye & Warren, Esqs.
101 Park Avenue
New York, New York 10178

Re: Sireci v. Chemco, Inc., et al

Dear Mr. O'Gara:

At our recent meeting you requested that we advise you as to whether "Kydex", the one polyvinyl chloride product made by Rohm and Haas was manufactured using a mixture or polymerization process.

We have inquired of our client in this regard. The manufacturing process can be described as follows: Dry powders (PVC, acrylic and miscellaneous other ingredients) are blended and fed to an extruder. The extruder heats the blended material and extrudes a solid sheet of material. Rohm and Haas Company does this blending and extruding and sells Kydex as sheet material.

We trust that this satisfies your inquiry. We would now hope that your client will promptly consent to a discontinuance against Rohm and Haas.

Please let me hear from you in this regard by March 22nd.

Very truly yours,



EDWIN H. KNAUER

EHK/ms

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APR 1 1985

R. N. Wheeler, Jr.

UNION CARBIDE CORPORATION P. O. BOX 8361, SOUTH CHARLESTON, WV 25303
Health, Safety & Environmental
Affairs Department

March 15, 1985

James V. O'Gara Esq
Kelly, Drye and Warren
100 Park Avenue
New York, New York 10178

RE: Nicolina Sireci vs Union Carbide Corporation

Dear Mr. O'Gara:

In addition to the toxicity studies on di 2ethyl hexyladipate (NIH 81-1768) and on di 2ethyl hexyl phthalate (NIH 82-1773) I gave you by telephone the attached group of references from MEDLINE and TOXLINE may be of value.

Very truly yours,

R. N. Wheeler, Jr.

attachments

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IS - 0033-8419
AB - CBAC COPYRIGHT: CHEM ABS Visualization of superficial structures with conventional rapid scanners is difficult. A solid flexible PVC (9002-86-2) gelatin slab used as a stand-off material can provide a const. scan distance and thus overcome the problem of poor near field resoln. PVC gelatin expands the capability of the 3-4 MHz transducer to delineate superficial structures. The measured values for attenuation are displayed by least sq. fit lines at 20-90.degree.. At 200.degree. it attenuates .apprx.2.0 dB/cm at 1 mHz. The velocity at 20.degree. is 1440 m/s for PVC gelatin.
RN - 9002-86-2
EM - 8411

57 SI - TOXBIB/82/180897
AU - Chan OY ; Tan KT ; Kwok SF ; Chio LF
AD - Industrial Health Division, Ministry of Labour.
TI - Study on workers exposed to cadmium in alkaline storage battery manufacturing and PVC compounding.
SO - Ann Acad Med Singapore; VOL 11, ISS 1, 1982, P122-9
LA - Eng
CO - AAHSC
IS - 0304-4602
AB - The extent of cadmium exposure was studied in a cadmium-nickel battery factory and 8 PVC factories using cadmium stabilizers in the compounding of PVC. A total of 101 cadmium-exposed workers and 21 control subjects matched by sex, age, ethnic group and smoking history was investigated. Blood and urine cadmium levels were considerably elevated in the battery workers but were not raised in the PVC workers. These findings were consistent with the results of cadmium-in-air assessments. Among the female battery workers, urine cadmium excretion increased significantly with employment time. There was good correlation between blood and urine cadmium levels among the female subjects. A significant association between blood cadmium levels and prevalence of chest pain was also noted among the females. No low molecular weight proteinuria was detected, but two female battery workers had slight albuminuria and one male PVC worker had glucosuria but had abnormal GTT results.
KW - TOXBIB ; Air Pollutants #ANALYSIS
KW - Air Pollutants, Occupational #ANALYSIS
KW - Cadmium Poisoning OCCURRENCE ; Cadmium BLOOD/#METABOLISM/URINE
KW - Female ; Human ; Male ; Occupational Diseases OCCURRENCE
KW - Polyvinyl Chloride ; Singapore
RN - 7440-43-9; 9002-86-2
EM - 8207

95 SI - CIS/83/00732
CC - 130
AU - Gruszcz M
TI - Chronic vinyl chloride poisoning in workers engaged in the production of polyvinyl chloride using the suspension method (1967-1977)
SO - Studia i materiały monograficzne 1982, No.3, p.61-102. Illus. 42 ref.
PT - JOURNAL ARTICLE
LA - Pol
AB - Literature survey is followed by the results of a 16-year study of 330 workers at risk in Polish polymerisation plants: description of the conditions of exposure; composition of the population studied; scope of the study and methods used (medical examinations, radiographies of extremities, ECG, laboratory tests); discussion of results (clinical picture, morbidity, prognosis); conclusions (there is a relation between the degree of acroosteolysis and of pseudosclerotic changes combined with Raynaud's phenomenon on the one hand and the degree of liver damage on the other).
KW - VINYL CHLORIDE ; CHRONIC POISONING ; PLASTICS INDUSTRY
KW - SUSPENSION POLYMERISATION ; LITERATURE SURVEY
KW - OCCUPATIONAL HEALTH SURVEY ; POLAND ; MORBIDITY ; ACROOSTEOLYSIS
KW - LONG-TERM STUDY ; HEPATIC DAMAGE ; ILO
RN - 75-01-4 ; 9002-86-2
EM - 8411

96 SI - TOXBIB/84/210416
AU - Ganning AE ; Brunk U ; Daliner G
AD - Department of Biochemistry, Arrhenius Laboratory, University of Stockholm, Sweden.
TI - Phthalate esters and their effect on the liver.
SO - Hepatology; VOL 4, ISS 3, 1984, P541-7 (REF: 35)
LA - Eng
CD - GBZ
IS - 0270-9139
AB - The advantageous properties of polyvinyl chloride plastics make these materials indispensable at all levels of human life, and there is no reason to believe that the upward trend of their use will change. One third of most polyvinyl chloride plastics consists of plasticizers, mostly phthalate esters, which may migrate out contaminating our environment and consequently our bodies. Experimental results indicate that chronic exposure to phthalic esters may be responsible for a number of adverse health effects. Phthalates change the structure and function of the liver in a profound manner by inducing peroxisomes, mitochondria and enzymes which participate in fatty acid transport and beta-oxidation. Prolonged administration of phthalate esters, in doses comparable to those occurring in human exposures, seems to have an accumulative effect on the liver. Liver biopsies taken from dialysis patients show peroxisome proliferation which again warn of the possibility that human health may be influenced by

plasticizers.

KW - TOXBIB ; Equipment and Supplies
 KW - Fatty Acid Desaturases METABOLISM ; Hemodialysis ; Human
 KW - Intestines METABOLISM ; Kidney METABOLISM ; Lipids METABOLISM
 KW - Liver *DRUG EFFECTS/METABOLISM/ULTRASTRUCTURE ; Lung METABOLISM
 KW - Microscopy, Electron ; Phthalic Acids TOXICITY
 KW - Plasticizers *TOXICITY ; Polyvinyl Chloride TOXICITY
 KW - Proteins METABOLISM ; Review ; Support, Non-U.S. Gov't
 KW - Time Factors ; Tissue Distribution
 RN - 84-75-3 ; 9002-86-2
 EM - 8406

97 SI - CIS/82/01757
 CC - 230
 AU - Goldfarb AS ; Goldgraben GR ; Herrick EC ; Quelltette RP
 AU - Cheremisinoff PN
 TI - Organic chemicals manufacturing hazards
 SO - The Butterworth Group, Borough Green, Sevenoaks, Kent, TN15 6PH, United Kingdom, 1981. 430p. Illus. Bibl.
 PT - MONOGRAPH
 LA - Eng
 AB - This book provides industry background information, descriptions of manufacturing processes, an identification of substances present in the process streams and a discussion of the flammability and toxicity hazards associated with those substances and the processes. It is intended for use by chemical manufacturers, engineers and consultants, industrial chemists, industrial hygienists, environmentalists and pollution control engineers. Sections cover: acetic acid by methanol carbonylation; acetaldehyde by liquid-phase ethylene oxidation; esterification process for acrylic acid esters production; condensation process for DL-methionine production; tetraalkyl lead by lead alkylation; oxychlorination and pyrolysis processes for vinyl chloride production; polymerisation processes for polyvinyl chloride; chlorophenols by chlorination of phenol; vinyl acetate by hydroacetylation.
 KW - CHEMICAL PRODUCTS ; CHEMICAL INDUSTRY ; HAZARD EVALUATION
 KW - TOTAL LOSS CONTROL ; MANUALS ; ACRYLATES ; CHLOROPHENOLS
 KW - CHEMICAL PROCESSES ; ILO
 RN - 514-10-3 ; 75-07-0 ; 79-10-7 ; 7005-18-7 ; 75-01-4 ; 9002-86-2
 RN - 108-05-4 ; 78-00-2
 EM - 8411

98 SI - CIS/84/00326
 CC - 070
 AU - Gonzalez Fernandez A
 TI - Study of membrane filters suitable for use in the MRE dust sampler
 SO - Medicina y seguridad del trabajo Jan.-Mar. 1982, Vol.30, No.117, p.12-16. Illus. 11 ref.
 PT - JOURNAL ARTICLE
 LA - Spa
 AB - In the framework of studies on dust collecting equipment to be approved for use in mines by the General Directorate of Mines in

MH - Russian S.F.S.R. ; Vinyl Chloride/adverse effects
MH - Vinyl Compounds/adverse effects
DA - 830811
DP - 1983 Apr
IS - 0016-9919
TA - Gig Tr Prof Zabol
UI - 83235649
PG - 30-2
ZN - Z1.252.878 ; Z1.542.248.958 ; Z1.950
EA - A
IP - 4
TT - O rasprostranennosti zlokachestvennykh novooobrazovaniy v sredi rabochikh, zaniatykh v proizvodstve vinilkhlorida i polivinilkhlorida.
JC - FQ9
RN - 75-01-4 (Vinyl Chloride) ; 9002-86-2 (Polyvinyl Chloride)
EM - 8310
SO - Gig Tr Prof Zabol 1983 Apr;(4):30-2

31 AU - Fishbein L
TI - Toxicity of the components of poly(vinylchloride) polymers additives.
LA - Eng
MH - Animal ; Chemical Industry ; Flame Retardants/toxicity
MH - Free Radicals ; Heat ; Human ; Mice ; Plasticizers/toxicity
MH - Plastics/toxicity ; *Polyvinyl Chloride ; *Polyvinyls ; Rats
MH - Review
DA - 840530
DP - 1984
IS - 0361-7742
TA - Prog Clin Biol Res
UI - 84194192
PG - 113-36
SO - M
ZN - Z1.107.567.875
RF - 120
VI - 141
JC - PZ5
AA - Author
RN - 9002-86-2 (Polyvinyl Chloride)
EM - 8408
AB - The salient features of the toxicity of a number of additives used in polyvinyl chloride polymers were reviewed with primary emphasis on the toxicity of plasticizers (e.g., diethylhexyl phthalate and its metabolites, butylbenzylphthalate and di(2-ethylhexyl)adipate), heat stabilizers (e.g., organotin and lead stabilizers), blowing agents (e.g., azodicarbonamide), free-radical initiators (e.g., benzoylperoxide, lauroyl peroxide, ter.butylhydroperoxide and di-tert.butylperoxide, and flame retardants (e.g., decabromodiphenyl oxide). The paucity of toxicity data on the vast majority of PVC additives should be stressed.
SO - Prog Clin Biol Res 1984;141:113-36

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32 AU - Fitch CM ; Korones SB
TI - Heat shield reduces water loss.
LA - Eng
MH - Body Temperature ; Heating ; Human ; *Incubators, Infant ; Infant
MH - Infant, Newborn ; *Infant, Premature ; Polyvinyl Chloride
MH - *Water Loss, Insensible
DA - 841105
DP - 1984 Sep
IS - 0003-9888
TA - Arch Dis Child
UI - 85021537
PG - 886-8
SB - A ; M
ZN - Z1.542.363.300
IP - 9
VI - 59
JC - 6XG
AA - Author
RN - 9002-86-2 (Polyvinyl Chloride)
EM - 8501
AB - A heat shield covered by polyvinyl chloride film greatly reduced insensible water loss and radiant energy requirements in 12 preterm infants on a radiant cradle. Measured transmittance of radiant energy emitted by the radiant heater was impeded minimally by various thin film plastics but was blocked significantly by Perspex.
SO - Arch Dis Child 1984 Sep;59(9):886-8

33 AU - Ganning AE ; Brunk U ; Dallner G
TI - Phthalate esters and their effect on the liver.
LA - Eng
MH - Equipment and Supplies ; Fatty Acid Desaturases/metabolism
MH - Hemodialysis ; Human ; Intestines/metabolism ; Kidney/metabolism
MH - Lipids/metabolism ; Liver/*drug effects/metabolism/ultrastructure
MH - Lung/metabolism ; Microscopy, Electron ; Phthalic Acids/toxicity
MH - Plasticizers/*toxicity ; Polyvinyl Chloride/toxicity
MH - Proteins/metabolism ; Review ; Support, Non-U.S. Gov't
MH - Time Factors ; Tissue Distribution
DA - 840713
DP - 1984 May-Jun
IS - 0270-9139
TA - Hepatology
UI - 84210416
PG - 541-7
SB - M
ZN - Z1.107.567.875
IP - 3
RF - 35
VI - 4
JC - 68Z
AA - Author
RN - EC 1.14.99.- (Fatty Acid Desaturases)

- RN - EC 1.3.99.3 (acyl-CoA dehydrogenase)
 RN - 84-75-3 (di-n-hexyl phthalate) ; 9002-86-2 (Polyvinyl Chloride)
 EM - 8409
 AB - The advantageous properties of polyvinyl chloride plastics make these materials indispensable at all levels of human life, and there is no reason to believe that the upward trend of their use will change. One third of most polyvinyl chloride plastics consists of plasticizers, mostly phthalate esters, which may migrate out contaminating our environment and consequently our bodies. Experimental results indicate that chronic exposure to phthalic esters may be responsible for a number of adverse health effects. Phthalates change the structure and function of the liver in a profound manner by inducing peroxisomes, mitochondria and enzymes which participate in fatty acid transport and beta-oxidation. Prolonged administration of phthalate esters, in doses comparable to those occurring in human exposures, seems to have an accumulative effect on the liver. Liver biopsies taken from dialysis patients show peroxisome proliferation which again warn of the possibility that human health may be influenced by plasticizers.
- SO - Hepatology 1984 May-Jun;4(3):541-7
- 34 AU - Garcia LS ; Shimizu RY ; Brewer TC ; Bruckner DA
 TI - Evaluation of intestinal parasite morphology in polyvinyl alcohol preservative: comparison of copper sulfate and mercuric chloride bases for use in Schaudinn fixative.
 LA - Eng
 MH - Comparative Study ; Copper/*pharmacodynamics ; Evaluation Studies
 MH - Feces/microbiology ; Fixatives/*pharmacodynamics ; Human
 MH - Mercury/*pharmacodynamics ; Polyvinyl Alcohol/*pharmacodynamics
 MH - *Preservation, Biological ; Protozoa/*drug effects
 DA - 830909
 DP - 1983 Jun
 IS - 0095-1137
 TA - J Clin Microbiol
 UI - 83266091
 PG - 1092-5
 SB - M
 ZN - Z1.107.567.075
 IP - 6
 VI - 17
 JC - HSM
 AA - Author
 RN - 0 (Schaudinn's fixative) ; 7439-97-6 (Mercury)
 RN - 7440-50-8 (Copper) ; 7487-94-7 (mercuric chloride)
 RN - 7758-98-7 (copper sulfate) ; 9002-89-5 (Polyvinyl Alcohol)
 EM - 8311
 AB - As a result of disposal problems inherent in the use of mercury compounds, many laboratories have considered using copper sulfate as a substitute for mercuric chloride in polyvinyl alcohol (PVA) preservative. The primary use for PVA-preserved specimens is the permanent stained smear, the most important technique for the identification of intestinal protozoa. A comparison of organism

Spain, 6 types of membrane filters suited to the Mines Research Establishment (MRE) dust collector were investigated (cellulose nitrate, glass fibre, PVC, polyamide, gelatin, alginate). Aspects discussed are the effects of humidity, the possibility of dust analysis on the membrane itself, and resistance to airflow. In all these studies, membranes of polyvinyl chloride or glass fibre gave the best results.

KM - MEMBRANE FILTERS ; RESPIRABLE DUST ; MINING INDUSTRY
 KM - FILTRATION SAMPLING ; DUST MEASUREMENT ; SPAIN ; COMPARATIVE STUDY
 KM - INFRARED SPECTROPHOTOMETRY ; DUST ANALYSIS ; ILO
 EM - 8411

99 SI - CIS/84/00441
 CC - 120
 AU - Grasso P ; Mason PL ; Cameron NM ; Sharratt M
 TI - Tissue reaction to the intrapleural injection of polyvinyl chloride powder, α -quartz and titanium dioxide
 SO - Annals of Occupational Hygiene 1983, Vol.27, No.4, p.415-425. Illus. 23 ref.
 PT - JOURNAL ARTICLE
 LA - Eng
 AB - Intrapleural injections of polyvinyl chloride (PVC) powder, α -quartz (known to be highly fibrogenic) and titanium dioxide (known to be biologically inert) were administered to rats. Reaction to PVC powder was very similar to the reaction to titanium dioxide/macrophage accumulation with very little fibrosis. Reaction to α -quartz was, as expected, strong - consisting of the development of fibrous tissue. The conclusion is that PVC powder inhalation would not lead to silicosis-like diseases.
 KM - POLYVINYL CHLORIDE ; RESPIRABLE DUST ; FIBROGENIC EFFECTS
 KM - ANIMAL EXPERIMENTS ; LUNG ; COMPARATIVE STUDY
 KM - CONNECTIVE TISSUE DEVELOPMENT ; ILO
 RN - 9002-86-2 ; 7631-86-9 ; 13463-67-7
 EM - 8411

ONE ARTICLE

100 SI - HEEP/84/09353
 AU - GRASSO P ; MASON PL ; CAMERON NM ; SHARRATT M
 AD - Group Occup. Health Cent., British Petroleum Co. PLC, Chertsey Road, Sunbury-on-Thames, Middlesex TW16 7LN, U.K.
 TI - Tissue reaction to the intrapleural injection of polyvinyl chloride powder, alpha-quartz and titanium dioxide.
 SO - AIN OCCUP HYG; 27 (4). 1983 (RECD. 1984). 415-426.
 LA - ENG
 CD - AOHYA
 AB - HEEP COPYRIGHT: BIOL ABS. A comparative study was conducted to assess the potency of 3 industrial dusts, PVC (polyvinyl chloride), alpha-quartz and TiO2, in producing fibrosis at the site of deposition when administered to rats by the intrapleural and i.p. routes. PVC and TiO2 produced little reaction; this consisted mainly of macrophage accumulation with little fibrosis which reached a peak 1 wk after treatment and showed no evidence of further progress. alpha-Quartz produced a severe reaction

- 214 SI - TOXBIB/84/110648
 AU - Pastorino U ; Berrino F ; Gervasio A ; Pasenti V ; Riboli E
 AU - Crosignani P
 AD - OCD Department of National Cancer Institute, Milan, Italy.
 TI - Proportion of lung cancers due to occupational exposure.
 SO - Int J Cancer; VOL 33, ISS 2, 1984, P231-7
 LA - Eng
 CD - IJCA
 IS - 0020-7136
 AB - The proportions of male lung cancers due to occupational exposure and, respectively, to cigarette smoking in a highly industrialized area of Northern Italy were estimated in a population-based case-control study in 1976-9. Two hundred and four out of the 211 lung cancer cases and 351 controls sampled from the source population were questioned about their occupational and smoking histories. On the basis of the occupational history each subject was classified as probably exposed (+), possibly exposed (?), or unexposed (-) to one or more of the chemicals known to be carcinogenic for the human lung, namely asbestos, polycyclic aromatic hydrocarbons, arsenic, nickel and chromium compounds, BCME, CMME and vinyl chloride. Upon stratification by cigarette smoking, contrasting the occupationally exposed subjects, whether certainly or uncertainly defined, with the unexposed ones, the RR for lung cancer was 2.1 and the occupational etiologic fraction was 0.33 (95% confidence interval 0.19-0.47). The tobacco etiologic fraction was 0.81, while the two exposures together accounted for 89% of the total burden of incident cases. If 33% of all male lung cancers were of occupational aetiology, then this alone would represent 5% of all cancer deaths.
- KW - TOXBIB ; Aged ; Air Pollutants, Occupational * ; Female ; Human
 KW - Italy ; Lung Neoplasms ETIOLOGY/*OCCURRENCE ; Male ; Middle Age
 KW - Occupational Diseases ETIOLOGY/*OCCURRENCE ; Smoking ; Statistics
 KW - Support, Non-U.S. Gov't ; Tobacco Smoke Pollution
 EM - 8404

- 215 SI - CIS/84/00838
 CC - 130
 AU - Pearn JH
 TI - Teratogens and the male - An analysis with special reference to herbicide exposure
 SO - Medical Journal of Australia (9 July 1983, Vol.2, No.1, p.16-20, 44 ref.
 PT - JOURNAL ARTICLE
 LA - Eng
 AB - There are 3 mechanisms by which exposure of the male to toxic substances may cause poor reproductive performance or congenital malformations in his offspring: a direct effect on pituitary-hypothalamic function or male sex hormones; a direct effect on the sperm itself; abnormalities in seminal fluid with secondary abnormalities due to dissolved toxins. Experimental studies with 7 drugs and 5 groups of toxic chemicals are

independent risk factor contributing to IMD development.

RN - 9002-86-2
EM - 8307

209 SI - C15/81/01410
CC - 130
AU - Richards RJ ; Rose FA ; Tetley TD ; Cobb LM ; Hardy CJ
TI - Effects in the rat of inhaling PVC dust at the nuisance dust level (10mg/m³).
SO - Archives of Environmental Health Jan.-Feb. 1981, Vol.36, No.1, p.14-19. Illus. 13 ref.
PT - JOURNAL ARTICLE
LA - Eng
AB - A small number of scattered lung lesions were detected in rats after 15 weeks exposure to polyvinyl chloride (PVC) dust at a concentration of 10mg/m³ for 6h/day and 5 days/week. The lesions remained 15 weeks after exposure to PVC dust had ceased. Few biochemical changes were detected at the alveolar surface in lung tissue or in other organs in PVC-exposed rats. At the nuisance dust level PVC exhibits only weak biological activity.
KW - POLYVINYL CHLORIDE ; BIOLOGICAL EFFECTS ; BIOCHEMISTRY OF THE LUNG
KW - RESPIRABLE DUST ; PLASTICS INDUSTRY ; ANIMAL EXPERIMENTS
KW - BIOCHEMICAL EFFECTS ; ILO
RN - 9002-86-2
EM - 8411

210 SI - NTIS/PB84-182047
AU - Roberts DR
AD - National Inst. for Occupational Safety and Health, Cincinnati, OH. Div. of Surveillance, Hazard Evaluations and Field Studies.
TI - NIOSH-EPA (National Inst. for Occupational Safety and Health/Environmental Protection Agency) Interagency Agreement for the Assessment of Human Health Effects from Exposure to Di-2-(Ethylhexyl) Phthalate (Summary Report).
SO - Govt Reports Announcements & Index (GRA&I), Issue 15, 1984
OO - NTIS/PB84-182047, 17p
PR - NTIS Prices: PC A02/MF A01
AB - TD3: A suitable worker population was sought to conduct a retrospective cohort mortality study for occupational exposure to di-2-(ethylhexyl)phthalate (117817) (DEHP). Companies were contacted regarding annual DEHP consumption or production, types of processes for which DEHP was used, the size of the potentially exposed workforce, and the length of time DEHP had been used. The Society of the Plastics Industry (SPI) stated that the major use of DEHP was as a plasticizer in polyvinyl-chloride (9002862) (PVC) products. The highest potential source of worker exposures was during the formulating and compounding of the plastic resin. Surveys were then conducted of a plastics manufacturer, a PVC plastic sheet processing facility, and two aerosol filter testing facilities. Field monitoring was conducted of worker exposures to DEHP. The authors conclude that the populations exposed to DEHP were too small and not employed long enough to offer a suitable study cohort. Field monitoring showed worker exposures of less

- 227 SI - TOXBIB/83/200908
AU - Smith TJ ; Cafarella JJ ; Chelton C ; Croxley S
AD - Department of Environmental Sciences, Harvard School of Public Health, Boston, MA.
TI - Evaluation of emissions from simulated commercial meat wrapping operations using PVC wrap.
SO - Am Ind Hyg Assoc J; VOL 44, ISS 3, 1983, P176-83
LA - Eng
CD - AIHAA
IS - 0002-8894
KW - TOXBIB ; Aerosols ; Air Pollutants *TOXICITY
KW - Air Pollutants, Occupational *TOXICITY ; Meat ; Human
KW - Meat-Packing Industry * ; Polyvinyl Chloride *TOXICITY
KW - Polyvinyls *TOXICITY ; Support, Non-U.S. Gov't
KW - Support, U.S. Gov't, P.H.S.
RN - 9002-86-2
EM - 8307
- 228 SI - TOXBIB/84/073858
AU - Soufar CA ; Gauld S
AD - Institute of Occupational Medicine, Edinburgh.
TI - Clinical studies of workers exposed to polyvinylchloride dust.
SO - Thorax; VOL 38, ISS 11, 1983, P834-9
LA - Eng
CD - THORA
IS - 0040-6376
AB - A previous study showed that exposure of workers to polyvinylchloride (PVC) dust was associated with the presence of small rounded opacities in the chest radiograph, and also with a small average reduction of the forced expiratory volume in one second (FEV1). Studies have now been carried out on selected men to determine the clinical importance of the presence of small rounded opacities and also to identify any clinical or physiological features associated with PVC dust exposure. Among 28 men with small rounded opacities, complaints of persistent bronchial mucous hypersecretion were more common (nine men) than among 29 men of similar age, smoking habits, and dust exposures (one man, p less than 0.01), and there was a suggestion that the physical sign of late inspiratory crackles was more frequent among men with opacities (seven of 27 men) than the other men (two of 28 men, p less than 0.05). The average lung function of men with opacities was only trivially lower than that of the comparative group and the difference between the groups was not significant. In further studies 13 non-smokers with the highest PVC dust exposure and lowest FEV1 (adjusted for age, height, weight, and dust exposure) were examined. None had an observed FEV1 less than 80% of the predicted value for age and height, and these men did not differ in symptoms, signs, or lung function from non-smokers with low dust exposure and similarly low FEV1. In a similar study of 18 smokers with the highest PVC dust exposures and lowest adjusted FEV1, some men had an observed FEV1 well below 80% of predicted values for non-smokers, but with one

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are small particle powders containing very little free monomer. Bulk PVC resins are similar to suspension PVC resins, though the particles tend to be more porous. Solution PVC resins are smaller in particle size than suspension PVC with high porosity particles containing essentially no free monomer. The variety of PVC resin products does not lend itself to broad generalizations concerning health hazards. In studying occupational hazards the particular PVC process and the product must be considered and identified in the study.

KM - TOXBIB ; Chemical Industry * ; Human ; Particle Size
 KM - Polyvinyl Chloride *ADVERSE EFFECTS ; Polyvinyls *ADVERSE EFFECTS
 KM - Risk ; Vinyl Chloride ADVERSE EFFECTS
 RN - 75-01-4; 9002-86-2
 EM - 8206

- 269 SI - TOXBIB/85/062087
 AU - Wilkinson RR
 AD - Midwest Research Institute, Kansas City, Missouri.
 TI - Technoeconomic and environmental assessment of industrial organotin compounds.
 SO - Neurotoxicology (Park Forest IL); VOL 5, ISS 2, 1984, P141-58
 LA - Eng
 CD - NRTXD
 IS - 0161-813X
 AB - Current uses of organotins include heat stabilizers for polyvinyl chloride (PVC), catalysts for polyurethane foam and silicone rubber, biocides, and animal health products. Domestic production consumption in 1982 is about 28 million pounds, and overall growth is estimated at 7 percent per year. Physical properties of organotins, including solubility in water, octanol-water partition coefficients, and Freundlich adsorption isotherm constants, are not well characterized. Analytical methods for tin in environmental and biological matrices involve concentration, separation, and identification by chromatography, spectrometry, and spectroscopy. Environmental fate and effects of organotins are not well understood. Degradation reactions may yield a complex set of products, including inorganic tin oxide. The effects of exposure of workers and release of organotins to the environment at point sources have been documented. Nonpoint sources of environmental exposure include discard and sanitary landfill disposal of plastics and direct release of biocides to aquatic or marine environments. Other dissipative uses of organotins which pose potential human risk include PVC food wrapping and bottles and rigid potable water pipe. The long term health effects of low level exposure to organotins are not known. Toxic metal cycling in the environment, including biomethylation of inorganic tin by naturally occurring bacteria, is of rising concern.
- KM - TOXBIB ; Chemistry ; Chromatography, Gas ; Economics
 KM - Environmental Exposure ; Environmental Pollution ; Human
 KM - Kinetics ; Occupational Diseases CHEMICALLY INDUCED
 KM - Organotin Compounds */ANALYSIS/POISONING ; Refuse Disposal
 KM - Support, U.S. Gov't, Non-P.H.S.

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