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8(E)

Building B-101

The Dow Chemical Company
2301 N. Brazosport Blvd
Freeport, Texas 77541-3257

OCCUPATIONAL HEALTH SUMMARY REPORT

LOCATION: CHLORINATED ETHANE PRODUCTS

PERIOD COVERED: July 8 - September 23, 1992

MEDICAL:

C. K. Browdy MD
C. K. Browdy, M.D.
Occupational Health Associate

10-22-92
Date

INDUSTRIAL HYGIENE:

M. A. Blue
M. A. Blue
Industrial Hygienist

10-27-92
Date

APPROVED:

Tom Lipps
T. E. Lipps, M.D.
Director, Occupational Health

11/2/92
Date

REVIEWED:

H. Janke
H. Janke
Superintendent

11/2/92
Date

cc: D. E. Cragar
J. H. Saunders, M.D.
J. H. Lippman
Summary File

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OCCUPATIONAL HEALTH SUMMARY REPORT

This is a voluntary participation program. The group population is eighty. Thirty-four individuals have current information and were not examined at this time. Forty-six individuals were examined between July 8, 1992, and September 23, 1992, for a 100% participation rate.

The Chemical and Physical Agent Inventories (CPAI) for Chlorinated Ethanes products (CEP), CEP Maintenance, CHLOROETHENE* Solvents, CEP Process Development Lab, Beta Tri/Vinylidene, and CEP Unit Services show that the chemical and physical agents of greatest concern are vinyl chloride, chlorine, 1,1,2,2-tetrachloroethane, ethylene dichloride, 1,1-dichloroethane, 1,1,1,2-tetrachloroethane, vinylidene chloride, methyl chloroform (technical), Prelete, AEROTHENE* TT Inhibitor, CHLOROTHENE* Industrial Solvent, CHLOROTHENE* SM, DOWCLEN* LS Solvent, AEROTHENE* TT, ethyl chloride, 1,4-dioxane, 1,1,2-trichloroethane, 1,1,1-trichloroethane, asbestos, cristobalite (SIO₂), quartz, kerosene, ethanol, and noise. The Control C Operators, PRG Control C Operators, and the Control B Operators will be followed by liver profiles because of potential exposure to vinylidene chloride above the Threshold Limit Value for two years. The remaining job classifications will be followed on the periodic core examination.

The 1990 Industrial Hygiene monitoring data is summarized in I. H. Report No. A24-3447-90C. Eight-hour time-weighted average exposures for vinyl chloride, vinylidene chloride, 1,1-dichloroethane, 1,1,1-trichloroethane, ethylene dichloride, 1,1,2-trichloroethane, 1,1,1,2-tetrachloroethane, and 1,1,2,2-tetrachloroethane were well below the recommended exposure guidelines. Short-term personal exposures were monitored during specific job activities including vinylidene chloride drumming and tank car loading procedures, line openings, and methyl ether hydroquinone (MEHQ) addition. Exposures were within acceptable guidelines for all chemicals except vinylidene chloride. The acceptable guideline for vinylidene chloride was exceeded during vinylidene chloride drumming and tank car loading, filter changing, and during MEHQ addition. Full face air purifying respirators with organic vapor/acid gas cartridges (OVAG) were used during the opening of the MEHQ additive pot and half face air purifying respirators with OVAG cartridges were used during

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vinylidene chloride drumming. After the monitoring data was received, the use of full face airline respirators was implemented for vinylidene chloride drumming.

The 1991 Noise Survey is summarized in I. H. Report No. A24-3758-91N. Personal eight-hour time-weighted average exposures were less than 85 decibels on the A-scale for all monitored job classifications. These job classifications are not in the Texas Operations Hearing Conservation Program.

There are 19 TSCA 8(d) chemicals present. They are 1,1,2-trichloroethane, 1,1-dichloroethane, asbestos, 1,3-dioxolane, hexachlorobutadiene, ethyl chloride, perchloroethylene, 1,1,2,2-tetrachloroethane, chloroform, ethylene dichloride, dimethoxymethane, 1,1,1-trichloroethane, methylene chloride, 1,1,1,2-tetrachloroethane, hydroquinone, phenol, toluene, methyl ethyl ketone, and methyl isobutyl ketone.

There were thirty-nine audiograms done. There were two standard threshold shifts as defined by the OSHA Noise Standard. These individuals are not in the Texas Operations Hearing Conservation Program.

Five individuals have limitation of respirator usage based on initial screening of the medical examination data. Please see Attachment A for medical limitation of respirator usage. If these medical restrictions interfere with an individual's job requirements, further evaluation at the Occupational Health Department should be arranged to fully assess the need for medical limitation of respirator usage.

The liver is considered the main target organ for vinylidene chloride and the other chlorinated hydrocarbons present. Six individuals of the 45 tested had minimal elevation of one or two of the five liver enzyme tests done. One individual had mild elevation of all five of the liver enzyme tests done. This individual was not in a job classification whose potential exposure exceeded the acceptable Industrial Hygiene guideline for vinylidene chloride or any of the other chlorinated hydrocarbons.

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There were three reports of incidents. Two were chemical exposures and one was a musculoskeletal injury.

Individuals with life-style factors that are amenable to medical or dietary intervention include the following: ten smokers, thirty-four individuals who are overweight, eleven individuals with uncontrolled hypertension, and nineteen individuals with elevated cholesterol levels. Please see Attachment B for a graphic representation of this data. Please contact the Up-With-Life Program (238-4334) for assistance in modification of these life-style risk factors.

Attachments

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October 22, 1992

MEDICAL LIMITATION OF RESPIRATOR USAGE

The following four individuals may wear respirators for escape only:

may wear a positive-pressure supplied-air (airline) respirator or a negative-pressure respirator. He may not use a self-contained breathing apparatus (SCBA) for other than escape.

The following seventy-five individuals have no medical limitation of respirator usage:

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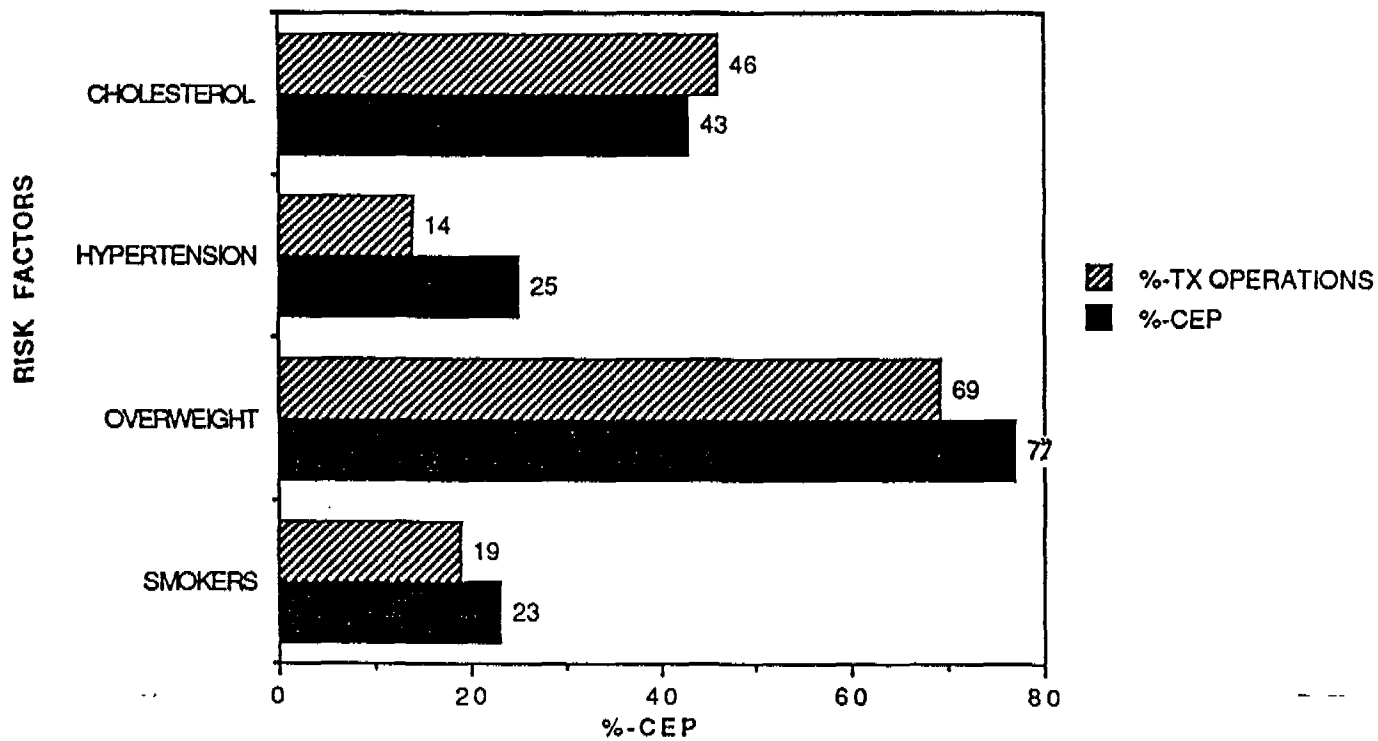
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ATTACHMENT B

OCTOBER 22, 1992

Data from "CEP 10/92 DATA"



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