



Dow U.S.A.

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

REV
8(E)

Building B-101

OCCUPATIONAL HEALTH SUMMARY REPORT

LOCATION: **CHLORINATED ETHANE PRODUCTS**

PERIOD COVERED: May 13 - September 18, 1991

MEDICAL:

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

10-16-91
Date

INDUSTRIAL HYGIENE:

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

10-16-91
Date

APPROVED:

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

10-17-91
Date

REVIEWED:

H. Janke
H. Janke, Sr.
Superintendent

10-23-91
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 85. Twenty-three individuals have current information and were not examined at this time. Sixty-one individuals were examined between May 13, 1991, and September 18, 1991, for a 98% 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 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, 1,1-dichloroethane, 1,1,1,2-tetrachloroethane, vinylidene chloride, chlorine, ethylene dichloride, methyl chloroform (technical), Prelete, Aerothene TT Inhibitor, CHLOROTHENE* Industrial Solvent, CHLOROTHENE* SM, DOWCLEN* LS Solvent, Aerothene TT, ethyl chloride, 1,4-dioxane, vinyl chloride, 1,1,1-trichloroethane, asbestos, cristobalite (SiO₂), quartz; and noise. Based on a review of current Industrial Hygiene monitoring data described below, the Boilermaker/Welder and Painter job classifications are followed on the Noise Medical Surveillance Requirement (MSR). The Control C Operators, PRG Control C Operators, and the Control B Operators will be followed by liver profiles because of 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)

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R&S 150965

were used during the opening of the MEHQ additive pot and half face air purifying respirators with OVAG cartridges were used during vinylidene chloride drumming. After the monitoring data was received, the use of full face airline respirators was implemented for vinylidene chloride drumming.

The 1988 Noise Survey is summarized in I. H. Report No. A24-3126CN. Personal eight-hour time-weighted average exposures were less than 85 decibels on the A-scale for all monitored job classifications except the Painters and Boilermaker/Welders. The Painters and Boilermaker/Welders are in the Texas Operations Hearing Conservation Program.

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

There were forty-three audiograms done. There was one standard threshold shift as defined by the OSHA Noise Standard. This individual is not in the Texas Operations Hearing Conservation Program.

Eight individuals have limitation of respirator usage based on initial screening of the medical examination data. Please see the attached list 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. Five individuals of the 51 tested had minimal elevation of one or more of the five liver enzyme tests done. Two individuals had moderate elevation of one or more of the five liver enzyme tests done. These two individuals

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R&S150966

were not in a job classification whose potential exposure exceeded the acceptable Industrial Hygiene guideline for vinylidene chloride. They have been restricted from exposure to chlorinated hydrocarbons.

Individuals with life-style factors that are amenable to medical or dietary intervention include the following: ten smokers, twenty-eight individuals who are overweight, one individual with uncontrolled hypertension, and twenty-one individuals with elevated cholesterol levels. Please contact the Up-With-Life Program (238-4334) for assistance in modification of these life-style risk factors.

Attachment

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ATTACHMENT

October 15, 1991

MEDICAL LIMITATION OF RESPIRATOR USAGE

The following eight individuals may wear respirators for escape only:

The following 77 individuals have no medical limitation of respirator usage:

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R&S 150968

Attachment

Page 2

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R8S150969

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R&S150970