



**Dow U.S.A.**

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

Building B-101

## OCCUPATIONAL HEALTH SUMMARY REPORT

LOCATION: **CHLORINATED ETHANE PRODUCTS  
CONTRACTORS**

PERIOD COVERED: July 8 -12, 1991

MEDICAL: C. K. Browdy MD 11-8-91  
C. K. Browdy, M.D. Date  
Occupational Health Associate

INDUSTRIAL HYGIENE: M. A. Blue 11-13-91  
M. A. Blue Date  
Industrial Hygienist

APPROVED: Tom Lipps 11-13-91  
T. E. Lipps, M.D. Date  
Director, Occupational Health

REVIEWED: H. Janke Sr. 11-20-91  
H. Janke, Sr. Date  
Superintendent

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

REV  
8(E)

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## OCCUPATIONAL HEALTH SUMMARY REPORT

This is a voluntary participation program. Four individuals have been identified as having one or more years work experience in the Chlorinated Ethane Products area. Four individuals were examined between July 8-12, 1991, for a 100% participation rate.

The Chemical and Physical Agent Inventories (CPAI) for Chlorinated Ethanes products (CEP), CEP Maintenance, CHLOROTHENE\* 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 (SiO<sub>2</sub>), 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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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 four audiograms done. There were no standard threshold shifts as defined by the OSHA Noise Standard.

One individual has 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 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. One individual of the four tested had minimal elevation of two of the five liver enzyme tests done. This individual has a medical reason for these minimal elevations.

Attachment

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ATTACHMENT

November 11, 1991

**MEDICAL LIMITATION OF RESPIRATOR USAGE**

may wear a respirator for escape only.

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

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