



DOW CHEMICAL U.S.A.

April 15, 1987

LOUISIANA DIVISION
P. O. BOX 150
PLAQUEMINE, LOUISIANA 70765-0150
504 288-8000

I. H. Contacts

cc: Mike Nevill, 3502-E
Henry Bell, 4701
Dr. Currier, 2303
Lester Poirrier, 4109
Ray Kemp, 4109

1,1,1-TRICHLOROETHANE TOX STUDY

The attached telex was recently received from Midland. It concerns a recent animal study where exposure was to an aerosol rather than a vapor. In the study, rats died at lower levels (1375 - 12000 ppm) than in previous studies. However, the levels causing death were well above the current TLV of 350 ppm. It is believed that the increased toxicity was related to the aerosol droplets.

Please pass this information along to your plant maintenance people and review any operations in your area where 1,1,1-trichloroethane (Chlorothene®) is used as a fine mist or spray to make sure exposures are being kept below the TLV.

Bill

William E. Ledford
Industrial Hygiene

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Included in 1986 IH Review

31 MARCH 1987

ACUTE TOXICITY -- 1,1,1-TRICHLOROETHANE

PRELIMINARY RESULTS OF ACUTE INHALATION STUDIES OF AEROSOLIZED 1,1,1-TRICHLOROETHANE, SPONSORED BY THE 3M CORPORATION, HAVE COME TO OUR ATTENTION. THIS INFORMATION HAS BEEN SUBMITTED TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY.

RATS WERE EXPOSED FOR 4 HOURS BY INHALATION TO 1,1,1-TRICHLOROETHANE WHICH WAS INTRODUCED INTO THE CHAMBER IN AEROSOL FORM. RATS DIED AT ALL LEVELS TESTED, 7510 TO 65,500 MG/CU. METER. EARLIER STUDIES OF 1,1,1-TRICHLOROETHANE, CARRIED OUT IN A SIMILAR WAY SHOWED LOWER TOXICITY WITH AN LC50 OF ABOUT 76,400 MG/CU. METER. FURTHERMORE, A DOW STUDY OF FULLY VAPORIZED 1,1,1-TRICHLOROETHANE WHERE ANIMALS WERE EXPOSED EVEN LONGER, 7 HOURS, GAVE AN LC50 OF 77,800 MG/CU. METER (14,250 PPM).

IT IS NOT CLEAR WHY THERE IS SO MUCH DIFFERENCE BETWEEN THE MOST RECENT AND THE EARLIER STUDIES. IT MAY BE BECAUSE OF THE WAY THE MATERIAL WAS DISPENSED, LEADING TO HIGHER LEVELS OF AEROSOLIZED DROPLETS OF 1,1,1-TRICHLOROETHANE. WE ARE NOT SUGGESTING ANY CHANGES IN WORK PRACTICES AT THIS TIME. HOWEVER, WORK SITUATIONS WHERE AEROSOLS OF 1,1,1-TRICHLOROETHANE MAY BE ENCOUNTERED SHOULD BE REVIEWED TO ENSURE EXPOSURES TO THE MATERIAL ARE MAINTAINED BELOW THE CURRENT ACGIH TLV OF 350 PPM (1900 MG/CU. METER).

ADDITIONAL STUDIES OF 1,1,1-TRICHLOROETHANE TO RESOLVE THESE DIFFERENCES IN APPARENT TOXICITY ARE BEING PLANNED AND CARRIED OUT. YOU WILL BE KEPT INFORMED OF ADDITIONAL INFORMATION AS IT BECOMES AVAILABLE.

L. W. RAMPY
DIRECTOR, INDUSTRIAL HYGIENE
517/636-6260

J. M. LANHAM
CHIEF MEDICAL OFFICER
517/636-210

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