

VINYL CHLORIDE - TOXICITY
MEETING OF AM. IND. HYG. ASSOCIATION
WASHINGTON, D.C. - MAY 13-17, 1962

Technical Director

Mr. J. C. Fedoruk

W. A. Knapp

May 28, 1962

1. Pursuant to our recent conversation, the writer attended Thursday afternoon session of subject meeting to hear paper by Dr. David Lester of Yale. This paper reported our results with vinyl chloride which are in sharp contrast to those reported by Torkelson, Oyen and Rowe of Dow Chemical in the INDUSTRIAL HYGIENE JOURNAL, October 1961, pgs. 354-361.
2. In the Dow study the animals (albino rats) were exposed to a maximum concentration of 500 ppm for 4-1/2 months; in our study animals were exposed to 20,000 ppm for 3 months in longest exposure test. Dow reported pathological changes in liver and kidneys, we found only morphological alterations and nothing that could be described as pathological change. Although our study was not as long, the exposure concentration was 40 times their level and injury would have been expected to be much more severe.
3. In view of conflicting results Dr. Lester went to great pains to describe a "double blind" procedure to examine tissues microscopically. Reason for the different result remains unexplained but sufficient doubt has been cast on validity of Dow results so that it is unlikely that present threshold limit value of 500 ppm will be reduced to 100 ppm (or weighted average of 50 ppm) recommended by Dow. Dr., Herbert Stokinger of U.S. Public Health Service and chairman of the ACGIH committee on threshold limit values sat with us and discussed Dr. Lester's paper after presentation; he will recommend continuation of the present value.
4. Other than differences in pathologist's findings which are not uncommon, the only conceivable reason for different results is possible impurities in Dow material. In their article they analyzed their product via gas phase which could reasonably miss liquid phase impurities.

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5. The maintenance of a reasonable threshold limit value for vinyl chloride is important in our development of this material as an aerosol propellant.

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