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Biochemical Research Laboratory

The Dow Chemical Company

RESULTS OF REPEATED EXPOSURE OF LABORATORY ANIMALS TO VARIOUS CONCENTRATIONS OF 1,2-DIBROMO-3-CHLOROPROPANE

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PROBLEM

1,2-Dibromo-3-Chloropropane has been tested as a soil fumigant where it has shown considerable promise as a nematocide. Previous studies in this laboratory have shown that this material has a moderate to high acute oral toxicity. The oral LD₅₀'s for the species tested lie in range of 0.06 gm/kg of chicks to 0.41 for mice. It is readily absorbed through the skin being moderately toxic by this route; the LD₅₀ for rabbits was found to be 0.5 gm/kg. It is slightly irritating to the eyes. Inhalation studies showed that this material was high in toxicity by this route also. The estimated LC₅₀'s were as follows:

2 hour exposure	300 ppm
4 hour exposure	150 ppm
8 hour exposure	65 ppm

For report see T3.5-68-2 signed 6-23-55.

The effect of repeated vapor exposures was needed to provide data upon which to base conclusions regarding the hazards of the proposed use of manufacturing and of handling. These studies were undertaken to provide such data.

EXHIBIT 21

HUMAN ODOR TESTS

An analyzed concentration of 1.7 ppm of 1,2-dibromo-3-chloropropane was maintained in a 130 cu. ft. chamber long enough to permit two human volunteers to test the resultant atmosphere for odors of the chemical. Both volunteers reported independently a definite, not unpleasant, odor.

C. SIGNIFICANCE OF RESULTS

These data indicate that 1,2-dibromo-3-chloropropane is high in toxicity from repeated inhalation. Although a "no effect" level was not established, the data do indicate that such a level must be less than 12 ppm for repeated seven-hour daily exposures. In view of the severity of the effects observed, at this level, a tentative hygiene standard of 1 ppm is suggested. Further experimental data must be obtained before such a standard can be set with confidence, however.

These data also show that lung, liver, and kidney effects may be expected. Testicular atrophy may result from prolonged, repeated exposure. However, the first signs of exposure may well be a general feeling of ill health accompanied by a gradual loss of weight.