

CHEMICAL HAZARDS

- 750 Plastics. The Toxicology of Synthetic Resins. R. H. Wilson and W. E. McCormick. *A.M.A. Arch. Ind. Health* 21, 536-548 (June 1960).

This presentation is the third revision of a paper originally written in 1954 (*Ind. Med. & Surg.* 23, 479 (1954)). It represents a compilation of the literature concerning the toxicological properties of synthetic resins. While not all-inclusive, the bibliography can be used as a reference for the investigator of the toxicology of plastics. The second revision was presented in November, 1955 (*Ind. Med. & Surg.* 24, 491 (1955)). The authors discuss the subject under the following headings: acrylic resins, alkyd resins, amino (urea and melamine) resins, cellulose plastic materials, coumarone-indene resins, epoxies, fluorocarbons, nylon, phenolic resins, polyethylene, polyester resins, silicones, polyethylene, vinyl resins, and polyurethanes. There are 114 references to the subject in the bibliography.

- 751 Toxicity of Diborane in High Concentrations. A. R. Stumpe. *A.M.A. Arch. Ind. Health* 21, 519-524 (June 1960).

Toxic signs and pathological evidence of severe pulmonary damage were observed in golden hamsters after inhalation of relatively high concentrations of diborane. As the concentration of diborane was increased from 50 ppm (58 mg. per cu. m.) to 600 ppm (696 mg. per cu. m.), the mean survival time for exposed hamsters decreased. Also noted was a progressive narrowing of the time interval for all exposed animals to die. However, concentrations in excess of 600 ppm (696 mg. per cu. m.) elicited no further reduction in the minimum, maximum, or mean exposure times for death. Additional toxicopathological studies are necessary for a complete understanding of the mechanism of action of diborane. In view of diborane's extreme toxicity it becomes imperative that future aircraft and rockets utilizing the boranes as high-energy fuels be designed to provide the utmost protection against accidental cabin air contamination.

-- Author's summary

- 752 The Toxicology of Boron Hydrides. G. J. Lovinskas. CWL-TM-27-7. Chemical Warfare Labs., Army Chemical Center, Md. 28 pp. (Dec. 1956).

A subacute and chronic inhalation study was conducted with pentaborane. The acute study, at 1.0 ppm, resulted in the death of several animals within 4 weeks (20 exposures). The chronic study was conducted at 0.2 ppm of pentaborane for approximately 6 months. During this period, the animals showed a loss of appetite, weight loss, apathy, docility, decreased physical activity, and muscle tremors. Less frequently observed were an increase in pain, impaired mobility of the limbs, and signs of eye and nasal irritation. The exposed rats showed an elevated hematocrit. The exposed dogs showed signs of liver damage as measured by the bromsulphalein test. While no marked impairment of excretory ability was observed, the exposed dogs frequently showed blood levels of the dye in excess of 10% and 5% for 2 and 45 minutes respectively. All of the other tests gave values within normal limits. It is concluded that, where the possibility of prolonged and repeated exposure to this chemical exists, adequate ventilation be provided to keep the concentration of pentaborane below 0.2 ppm.

-- Nuclear Sci. Abstr.