

ELEMENTS OF INDUSTRIAL TOXICOLOGY

the intact skin in significant amounts, and does not seem to have any effect on the central nervous system. In animal experiments, continued feeding of diets containing methoxychlor in toxic concentration leads to loss of weight in the animals by their voluntary restriction of food intake and also to fatty infiltration of the liver in the manner of the chlorinated hydrocarbons.

Methyl acetate is widely used as a low-boiling solvent in the perfume, cosmetic, and paint industries. It is irritating to the mucous membranes of the eyes and the respiratory passage.

Animal studies indicate that there may be general poisoning and long-lasting after-effects when methyl acetate is inhaled in concentrations below that which produces narcosis. If exposure is serious, pulmonary edema and hemorrhages may occur, along with injury to the blood vessels.

Symptoms of exposure are eye inflammation, nervousness, chest tightness, heart palpitation, exhaustion, and shortness of breath.

See *Hygienic Guide*.

Methyl alcohol—see Methanol.

Methyl bromide is widely used as a fire extinguishing agent and as a fumigant.

An efficient fire extinguishing material, it has been installed in fixed systems in a number of aircraft and naval vessels, particularly in Great Britain where several cases of poisoning have been reported. Numerous poisoning cases also have occurred in the use of the material in fumigation and in industry.

The minimum concentrations which will produce mild poisoning are low. One investigator recorded 22 cases of skin irritation and 31 cases of mild systemic effects among 80 persons working during a two-week period at the filling and sealing of methyl bromide ampules. Concentrations of airborne methyl bromide were regularly determined around this operation and were generally below 35 ppm. The skin lesions resulted from exposure to small quantities of the liquid while it was being handled under a hood.

The liquid is a strong skin irritant. Skin contact can produce severe dermatitis, blisters, itching, and slow-healing burns.

No particular irritation is caused by breathing methyl bromide in quantities sufficient to produce systemic toxicity. The effects are not seen for a few hours to two or three days after the exposure. In mild systemic poisoning the most common complaints are lack of appetite, nausea, and headache. Dizziness and blurring of vision are also common. In more severe poisoning, there may be hallucinations and slurring of speech.

Methyl bromide is also a powerful irritant to the lungs and in severe poisoning will produce secretion of liquid into the lungs and thus interfere with breathing.

See *Halogenated hydrocarbons and Hygienic Guide*.

Methyl Cellosolve—see Ethylene glycol monomethyl ether.

Methyl chloride has been widely used as a refrigerant and a number of cases of severe intoxication have occurred from small leaks in large refrigeration systems. There have also been a number of industrial cases. The effects follow a fairly standard pattern with dizziness, weakness, blurred vision, loss of muscular coordination, and drowsiness in all instances. Loss of appetite, disturbances of sleep, and confusion are also common complaints.

Methyl chloride is retained to some extent in the brain, heart, liver, stomach, spleen, kidneys, muscle, and blood, and regularly produces edema of the lungs, degeneration of the liver and kidneys, and some damage to the heart. The mechanism of its action, however, is not yet understood.

It possesses no warning properties and since those who are becoming intoxicated may become so confused that they are not able to protect themselves, this material must be handled with the greatest of care.

Since methyl chloride is a low-boiling liquid normally handled under pressure, severe skin injuries—freezing and blisters—may occur if the skin is brought into contact with a leak.

See *Halogenated hydrocarbons and Hygienic Guide*.

Methyl chloroform (1,1,1-trichloroethane) closely resembles carbon tetrachloride in its solvent action and its rate of evaporation, but is much less toxic. Like trichloroethylene, it tends to attack the central nervous