

38—Industrial Toxicology

apparatus with full face piece should be used under severe exposure conditions such as would be encountered in moderate spills or equipment failures

Because ethyl acrylate may penetrate the skin and cause dermatitis and possibly sensitization, all skin areas should be protected against intermittent contact with the liquid. Impervious clothing including gloves of rubber, neoprene or certain plastics should be worn and should be cleaned on both sides after each usage

Because ethyl acrylate is a flammable liquid with a low flash point, it should be stored and handled away from excessive heat, flame, and sparks

In the case of over-exposure, the victim should be removed to an uncontaminated atmosphere and administered artificial respiration. In all cases emergency treatment should be instituted promptly and a physician summoned

Ethylamine is a volatile material with an ammonia-like odor which is identical in its effects with diethylamine. Quantitatively, ethylamine is probably slightly less irritating, but probably not enough to make any practical difference

Ethylbenzene (phenylethane) is a chemical intermediate and lacquer diluent and is often found in appreciable quantities in commercial petroleum solvents. For both acute and chronic exposures, its health hazard is moderate. Absorption is mainly by inhalation, and eye irritation begins at about 200 ppm. Higher concentrations produce tearing of the eyes, nasal irritation, and narcosis

Ethylbenzene is considered the most severe skin irritant of the benzene series, although it does not have the deleterious effect on the blood-forming organs that benzene does. No report of injury from industrial use has been recorded. Animal studies of chronic vapor inhalation show no significant effects

Ethyl bromide (bromoethane) is one of the less toxic halogenated hydrocarbons. It is used as an anesthetic for minor surgery to some extent. Inhalation in high concentrations (5 to 10 percent) or for a long time in low concentration (0.3 percent) will produce

lung irritation and edema and injury to the liver and kidneys

Ethyl chloride (chloroethane) is similar in its effects to ethyl bromide but considerably less toxic. It is used as an anesthetic or analgesic for minor surgery, both by refrigeration and by general anesthesia

Ethylene chlorohydrin is used as a solvent for resins and lacquers, as a chemical intermediate, and in agriculture to reduce the dormant period of potatoes. It has produced fatal poisonings. It is dangerous, especially because it is not irritating to inhale, and is rapidly absorbed through the skin either as the pure liquid or from water solution. Since this material is both soluble in, and dissolves in rubber, it is absorbed by rubber gloves and penetrates them so that they offer no protection from the liquid or its solution in water and may, in fact, be an added hazard. The lethal dose for a man is certainly not more than 5 ml when held in contact with the skin. Inhalation of 2 ppm of ethylene chlorohydrin for one hour, repeated once, was fatal for rats according to one report

Ethylenediamine is an extremely hygroscopic liquid which fumes in air. It can be recognized by its ammonia-like odor. It presents a moderate health hazard for both acute and chronic exposures

Its effects are primarily irritation of the mucous membranes and skin. The liquid causes immediate skin damage with blistering. Skin and respiratory sensitization may follow exposure to low vapor concentrations

Ethylene dibromide—see 1,2-Dibromoethane.

Ethylene dichloride—see 1,2-Dichloroethane.

Ethylene glycol, because of its low vapor pressure, is not an inhalation hazard in industry. Serious poisonings have resulted from either inadvertent or intentional drinking of glycol-base antifreeze. It severely damages the kidneys and injures the brain, mainly because it is catabolized to oxalic acid and precipitates calcium oxalate in the kidneys and