

First Aid: If this chemical gets into the eyes, irrigate immediately. If this chemical contacts the skin, flush with water immediately. If a person breathes in large amounts of this chemical, move the exposed person to fresh air at once and perform artificial respiration. When this chemical has been swallowed, get medical attention. Give large quantities of salt water and induce vomiting. Do not make an unconscious person vomit.

Personal Protective Methods: Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear eye protection to prevent any reasonable probability of eye contact. Employees should wash promptly when skin is wet or contaminated. Remove clothing immediately if wet or contaminated to avoid flammability hazard.

Respirator Selection:

1,000 ppm: CCROVF/GMOV/SAF/SCBAF

2,000 ppm: SAF:PD,PP,CF

Escape: GMOV/SCBA

Disposal Method Suggested: Incineration.

References

- (1) See Reference (A-61).
- (2) Sax, N.I., Ed., *Dangerous Properties of Industrial Materials Report*, 1, No. 2, 35-37, New York, Van Nostrand Reinhold Co. (1980).
- (3) See Reference (A-60).
- (4) United Nations Environment Programme, *IRPTC Legal File 1983*, Vol. 1, pp VII/28-9, Geneva, Switzerland, International Register of Potentially Toxic Chemicals (1984).

Ethyl Alcohol

~~ETHYL ALCOHOL~~

Description: $\text{CH}_3\text{CH}_2\text{OH}$, ethyl alcohol, is a colorless, volatile, flammable liquid boiling at 78° to 79°C .

Code Numbers: CAS 64-17-5 RTECS KQ6300000 UN 1170

DOT Designation: Flammable liquid.

Synonyms: Ethanol, grain alcohol, spirit of wine, cologne spirit, ethyl hydroxide, ethyl hydrate.

Potential Exposures: Ethyl alcohol is used in the chemical synthesis of a wide variety of compounds such as acetaldehyde, ethyl ether, ethyl chloride, and butadiene. It is a solvent or processing agent in the manufacture of pharmaceuticals, plastics, lacquers, polishes, plasticizers, perfumes, cosmetics, rubber accelerators, explosives, synthetic resins, nitrocellulose, adhesives, inks, and preservatives. It is also used as an antifreeze and as a fuel. It is an intermediate in the manufacture of many drugs (A-41) and pesticides (A-32).

Permissible Exposure Limits in Air: The Federal standard and the 1983/84 ACGIH TWA value is 1,000 ppm ($1,900\text{ mg/m}^3$). There is no tentative STEL value.

Determination in Air: Collection by charcoal tube, analysis by gas liquid chromatography (A-10).

Permissible Concentration in Water: No criteria set, but EPA (A-37) has suggested a permissible ambient goal of $26,000\ \mu\text{g/l}$ based on health effects.

Routes of Entry: Inhalation of vapor and percutaneous absorption, ingestion, eye and skin contact.

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33, Vol. 1, pp VII/28- toxic Chemicals (1984).

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Harmful Effects and Symptoms: *Local* — Mild irritation of eye and nose occurs at very high concentrations. The liquid can defat the skin, producing a dermatitis characterized by drying and fissuring.

Systemic — Prolonged inhalation of high concentrations, besides the local effect on the eyes and upper respiratory tract, may produce headache, drowsiness, tremors, and fatigue. Tolerance may be a factor in individual response to a given air concentration.

Bizarre symptoms (other than typical manifestations of intoxication) may result from the denaturants often present in industrial ethyl alcohol. Ethyl alcohol may act as an adjuvant, increasing the toxicity of other inhaled, absorbed, or ingested chemical agents. An exception is methanol where ethyl alcohol counteracts methanol toxicity.

Medical Surveillance: Look for chronic irritation of mucous membranes and signs of chronic alcoholism in regular physical examinations. Ethyl alcohol can readily be determined in blood, urine, and expired air.

First Aid: Irrigate eyes with water.

Personal Protective Methods: Personal protective equipment is recommended where skin contact may occur.

Disposal Method Suggested: Incineration.

References

- (1) Sax, N.I., Ed., *Dangerous Properties of Industrial Materials Report*, 1, No. 7, 55-57, New York, Van Nostrand Reinhold Co. (1981).
- (2) See Reference (A-60).
- (3) Parmeggiani, L., Ed., *Encyclopedia of Occupational Health & Safety*, Third Edition, Vol. 1, pp 790-92, Geneva, International Labour Office (1983).

ETHYLAMINE

- Hazardous substance (EPA)

Description: $C_2H_5NH_2$ is a colorless liquid or gas with a strong ammonia-like odor. It boils at 15° to 16°C.

Code Numbers: CAS 75-04-7 RTECS KH2100000 UN 1036

DOT Designation: Flammable gas.

Synonyms: Ethylamine (anhydrous), aminoethane, monoethylamine.

Potential Exposure: Monoethylamine (MEA) is used as an intermediate in the manufacture of the following chemicals: triazine herbicides (A-32), 1,3-diethylthiourea (a corrosion inhibitor), ethylaminoethanol, 4-ethylmorpholine (urethane foam catalyst), ethyl isocyanate, and dimethylolethyltriazone (agent used in wash-and-wear fabrics). The cuprous chloride salts of MEA are used in the refining of petroleum and vegetable oil.

Incompatibilities: Strong acids, strong oxidizers.

Permissible Exposure Limits in Air: The Federal standard and the 1983/84 ACGIH TWA value is 10 ppm (18 mg/m³). There are no STEL values proposed. The IDLH level is 4,000 ppm.

Determination in Air: Adsorption on silica, workup with H₂SO₄ using