

Dangerous Properties of Industrial Materials

Fifth Edition

N. IRVING SAX

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TOXICITY SCALE

NONE = No harm via exposures of normal use; harmful only due to overwhelming dose or unusual conditions.

LOW = Causes readily reversible tissue changes which disappear after exposure stops; causes some discomfort.

MOD = May cause reversible or irreversible changes to exposed tissue, not permanent injury or death; can cause considerable discomfort.

HIGH = Capable of causing death or permanent injury due to the exposures of normal use; incapacitating and poisonous; requires special handling.

UNKNOWN (uk) (u) = Insufficient data or experience recorded or available to permit a statement.

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GLUTARIC ANHYDRIDE. Syns: *pentanedioic acid anhydride*, *1,3-propane dicarboxylic acid anhydride*.

Sol in benzene and toluene, highly sol in water on complete hydrolysis. $C_7H_{10}O_5$, mw: 114.1, bp: 144°-146° @ 13 mm, d: 0.989.

Acute tox data: Oral LD_{50} (rat) = 4460 mg/kg; dermal LD_{50} (rabbit) = 1780 mg/kg. [3]

THR = MOD via oral and dermal routes.

GLUTARONITRILE. Syn: *pentanedinitrile*. Colorless liquid, sol in water, insol in ether. $CN(CH_2)_3CN$, mw: 94.1, d: 0.989 @ 15°/4°, mp: -29°, bp: 286.4°.

THR = No data. See also nitriles.

GLYCERIN DICHLOROHYDRIN. Insol in water. $CH_2ClCHClCH_2OH$, mw: 129, d: 1.4, bp: 360° F, flash p: 200° F.

Acute tox data: Oral LD_{50} (rat) = 150 mg/kg; inhal LC_{50} (rat) = 125 ppm for 4 hrs; ip LD_{50} (mouse) = 73 mg/kg; sc LD_{50} (mouse) = 5 mg/kg. [3]

THR = HIGH via oral, inhal, ip and sc routes.

Fire Hazard: Low, when exposed to heat or flame.

To Fight Fire: Alcohol foam, mist, spray, dry chemical.

GLYCERINE. Syns: *1,2,3-propanetriol*, *glycerol*. Colorless or pale yellow liquid, odorless, syrupy, sweet and warm taste. $CH_2OHCHOHCH_2OH$, mw: 92.09, mp: 17.9 (solidifies @ a much lower temp.), bp: 290°, ulc: 10-20, flash p: 320° F, d: 1.260 @ 20°/4°, autoign. temp.: 698° F, vap. press: 0.0025 mm @ 50°, vap. d: 3.17.

Acute tox data: Oral LD_{50} (mouse) = 470 mg/kg; sc LD_{50} (mouse) = 10,000 mg/kg; iv LD_{50} (mouse) = 4250 mg/kg. [3]

THR = MOD via oral, sc and iv routes. In the form of mist it is an inhal-irr. A general purpose food additive. [109] It migrates to food from packaging materials.

Fire Hazard: Low, when exposed to heat, flame or powerful oxidizers. Can react violently with acetic anhydride, (aniline + nitrobenzene), $Ca(OCl)_2$, CrO_3 , Cr_2O_3 , (F_2 + PbO), ($HClO_4$ + PbO), $KMnO_4$, K_2O_2 , $AgClO_4$, Na_2O_2 . [19]

To Fight Fire: Alcohol foam, CO_2 , dry chemical.

GLYCERIN PITCH. A (S) carc. [14]

GLYCEROL. See glycerine.

GLYCEROL ESTER OF WOOD ROSIN.

THR = U. Used as a food additive permitted in food for human consumption. [109]

GLYCEROL MONOSTEARATE. See glyceryl monostearate.

GLYCOL PERCHLORATES.

THR = HIGH and violently unstable. [19]

GLYCEROL TRICHLOROHYDRIN. See 1,2,3-trichloropropane.

GLYCEROL TRINITRATE. See nitroglycerine.

GLYCERYL DIACETATE. Syn: *diacetin*. Colorless liquid, very sol in water. $C_7H_{12}O_5$, mw: 176.2, d: 1.178 @ 15°/15°, bp: 280°, mp: 40°.

Acute tox data: sc LD_{50} (rat) = 4000 mg/kg; sc LD_{50} (mouse) = 2500 mg/kg. [3]

THR = MOD via sc route. Probably MOD via other routes as well.

GLYCERYL MONOACETATE. Syns: *monoacetin*, *acetin*. Colorless, very hygroscopic liquid, characteristic odor. $C_5H_{10}O_4$, mw: 134.2, d: 1.206 @ 20°/4°, bp: 158° @ 17 mm.

Acute tox data = sc LD_{50} (rat) = 5500 mg/kg; sc LD_{50} (mouse) = 3500 mg/kg. [3]

THR = MOD via sc routes. An irr to skin, eyes and mu mem.

GLYCERYL MONOFLUOROACETATE. $C_3H_5O_2F$, mw: 152.1.

Acute tox data: sc LD_{50} (mouse) = 12 mg/kg. [3]

THR = HIGH via sc route. Probably other routes also.

GLYCERYL MONOSTEARATE. Syns: *g.m.s.*, *glycerol monostearate*, *monostearin*. Pure white- or cream-colored wax-like solid, faint odor, sol in (hot) alcohol, oils and hydrocarbons.

$(C_{17}H_{33})COOCH_2CHOHCH_2OH$, mw: 358, mp: 58°-59°, d: 0.97.

Acute tox data: ip LD_{50} (mouse) = 200 mg/kg. [3]

THR = HIGH via ip route. Probably HIGH via other routes. A general purpose food additive. [109]

GLYCERYL TRIACETATE. Syn: *triacetin*.

$(C_5H_9)(OOCCH_3)_3$, mw: 218.2, mp: -78°, bp: 258°. flash p: 280° F (COC), d: 1.161, autoign. temp.: 812° F, vap. d: 7.52.

Acute tox data: Oral LD_{50} (rat) = 3000 mg/kg; sc LD_{50} (rat) = 2800 mg/kg; ip LD_{50} (mouse) = 1400 mg/kg; iv LD_{50} (mouse) = 1600 mg/kg. [3]

THR = MOD via oral, sc, ip and iv routes. Used as a general food additive. [109]

Fire Hazard: Slight, when exposed to heat, flame or powerful oxidizers.

To Fight Fire: Alcohol foam, water, CO_2 , dry chemical.

GLYCERYL TRIBUTYRATE. See tributyrin.

GLYCERYL TRINITRATE. See nitroglycerin.

GLYCERYL TRISTEARATE. $C_{57}H_{110}O_6$, mw: 891.7. THR = An exper neo via sc route. [3]

GLYCIDALDEHYDE. Syn: *2,3-epoxypropand.* $C_3H_4O_2$, mw: 72.1, bp: 113°, d: 1.140 @ 20°/4°. Colorless liquid.