

## CLIP, Chemical Laboratory Information Profile

"Only when you know the hazards, can you take the necessary precautionary measures."

**Glycerol****CAS No.: 56-81-5**

Synonyms: Glycerin, 1,2,3,-propanetriol

**Physical Properties**

Colorless, odorless, hygroscopic, viscous, combustible liquid.  
 Vapor pressure at 20 °C: negligible  
 Melting point: 18 °C  
 Boiling point: 290 °C

**Exposure Limits**

OSHA PEL: 5 mg/m<sup>3</sup> (as mist)  
 ACGIH TLV: 10 mg/m<sup>3</sup> (as mist)

**Hazardous Characteristics**

Overall toxicity	Flammability	Destructive to skin/eye	Absorbed through skin	Sensitizer?	Self-reactive?	Incompatible with:
1	1	1	0	No	No	Nitric acid, halogens, potassium permanganate, other oxidizing agents; also potassium triiodide, sodium borohydride.*

0: None (or very low); 1: Slight; 2: Moderate; 3: High; 4: Severe.

**\*Reactivity Hazards**

The reaction of glycerin with an incompatible substance is usually violent; glycerin has three reactive centers, is a viscous liquid in intimate contact with the other species, and has a high boiling point. Consequently, the released heat tends to be retained, thus driving the temperature higher with a resultant increase in the violence of the reaction. See Bretherick's *Handbook of Reactive Chemical Hazards* for details and for other incompatibilities.

Cited as known to be or reasonably anticipated to be carcinogenic in NTP-9? No  
 Identified as a reproductive toxin in Frazier and Hage, *Reproductive Hazards of the Workplace*? No

**Typical symptoms of acute exposures:**

Skin and eye irritation, headache, nausea if ingested.

**Principal target organ(s) or system(s):**

Skin, eyes, and kidneys if ingested.

**Storage Requirements**

Store with other chemicals in a cool, dry, well-ventilated general storage location.

**Additional Remarks**

When heated above 280 °C, glycerin decomposes forming acrolein, a toxic, corrosive gas. Acrolein is assigned a PEL and a TLV of 0.1 ppm; the PEL limit is a ceiling limit.

**Notes****ReadMe**

This Chemical Laboratory Information Profile is *not* a Material Safety Data Sheet. It is a brief summary for teachers and their students that describes some of the hazards of this chemical as it is typically used in laboratories. On the basis of your knowledge of these hazards and before using or handling this chemical, *you need to select the precautions and first-aid procedures to be followed.* For that information as well as for other useful information, refer to Material Safety Data Sheets, container labels, and references in the scientific literature that pertain to this chemical.

**Reproductive Toxins**

Some substances that in fact are reproductive toxins are not yet recognized as such. For the best readily available and up-to-date information, refer to "DART/ETIC". See the TOXNET home page at [www.sis.nlm.nih.gov](http://www.sis.nlm.nih.gov) and click on "Toxicology search". *Note that some of the data in DART/ETIC have not been peer-reviewed.* See also Linda M. Frazier and Marvin L. Hage, *Reproductive Hazards of the Workplace*; Wiley, 1998; and T. H. Shepard, *Catalog of Teratogenic Agents*, 9th ed.; Johns Hopkins University Press, 1998.

**Abbreviations**

ACGIH TLV—American Conference of Governmental Industrial Hygienists—Threshold Limit Value. C—Ceiling. CAS—Chemical Abstracts Service. mg/m<sup>3</sup>—milligrams per cubic meter. NA—Not applicable. NE—Not established. NI—No information. NTP-9—National Toxicology Program, Ninth Annual Report on Carcinogens. OSHA PEL—Occupational Safety and Health Administration—Permissible Exposure Limit. ppm—parts per million. STEL/C—Short-term exposure limit and ceiling.

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