

4. CHEMICAL AND PHYSICAL INFORMATION

4.1 CHEMICAL IDENTITY

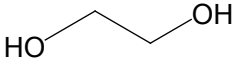
Information regarding the chemical identity of ethylene glycol is located in Table 4-1. This information includes synonyms, chemical formula and structure, and identification numbers.

4.2 PHYSICAL AND CHEMICAL PROPERTIES

Information regarding the physical and chemical properties of ethylene glycol is located in Table 4-2.

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Table 4-1. Chemical Identity of Ethylene Glycol^a

Characteristic	Information
Chemical name	Ethylene glycol
Synonyms and trade names	1,2-Dihydroxyethane; 1,2-ethandiol; 1,2-ethane-diol; 2-hydroxyethanol; ethylene alcohol; ethylene dihydrate; glycol; monoethylene glycol; MEG; Lutrol-9; Dowtherm Sr 1; Fridex; Norkool; Ramp; Tescol; Ucar 17
Chemical formula	C ₂ H ₆ O ₂
Chemical structure	 <chem>OCCO</chem>
Identification numbers:	
CAS registry	107-21-1
NIOSH RTECS	KW2975000 ^b
EPA hazardous waste	No data
DOT/UN/NA/IMDG shipping	No data
HSDB	5012
NCI	C00920

^aAll information obtained from HSDB 2009 except where noted.

^bNIOSH 2005

CAS = Chemical Abstracts Service; DOT/UN/NA/IMDG = Department of Transportation/United Nations/North America/International Maritime Dangerous Goods Code; EPA = Environmental Protection Agency; HSDB = Hazardous Substances Data Bank; NCI = National Cancer Institute; NIOSH = National Institute for Occupational Safety and Health; RTECS = Registry of Toxic Effects of Chemical Substances

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Table 4-2. Physical and Chemical Properties of Ethylene Glycol^a

Property	Ethylene glycol
Molecular weight	62.07
Color	Clear, colorless ^b
Physical state	Liquid ^b
Melting point	-12.69 °C ^c
Boiling point	197.3 °C ^c
Density:	
at 20 °C (g/cm ³)	1.1135 ^d
Vapor density	2.14 (air=1)
Odor	Odorless
Odor threshold	No data
Solubility:	
Water at 20 °C	Miscible with water
Organic solvent(s)	Soluble in lower aliphatic alcohols, glycerol, acetic acid, acetone; slightly soluble in ether; practically insoluble in benzene, chlorinated hydrocarbons, petroleum ether, oils.
Partition coefficients:	
Log K _{ow}	-1.36 ^e
K _{oc}	1 (estimated)
Vapor pressure at 25 °C	0.089 mm Hg (extrapolated) ^f
Henry's law constant at 25 °C	6x10 ⁻⁸ atm-m ³ /mole ^g
Autoignition temperature	398 °C
Flashpoint	127 °C ^h
Explosive limits	3.20–53% ⁱ
Conversion factors	1 ppm = 2.58 mg/m ³ 1 mg/m ³ = 0.39 ppm

^aAll information obtained from HSDB 2009, except where noted.

^bLewis 2001

^cLide 2005

^dO'Neil et al. 2001

^eHansch et al. 1995

^fAIChE 1995

^gHine and Mookerjee 1975

^hForkner et al. 2004

ⁱRebsdatt and Mayer 2005