4. CHEMICAL AND PHYSICAL INFORMATION

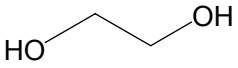
4.1 CHEMICAL IDENTITY

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.

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	$C_2H_6O_2$
Chemical structure	
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

[a]All information obtained from HSDB 2007 except where noted.
[b]RTECS 2007

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

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

[a]All information obtained from HSDB 2007, except where noted.
[b]Lewis 2001
[c]Lide 2005
[d]O'Neil et al. 2001
[e]Hansch et al. 1995
[f]AIChE 1995
[g]Hine and Mookerjee 1975
[h]Forkner et al. 2004
[i]Rebsdat and Mayer 2005