3. CHEMICAL AND PHYSICAL INFORMATION

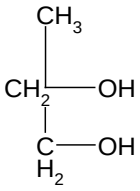
3.1 CHEMICAL IDENTITY

Information regarding the chemical identity of propylene glycol is located in Table 3-1.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

Information regarding the physical and chemical properties of propylene glycol is located in Table 3-2.

Table 3-1. Chemical Identity of Propylene Glycol[a]

Characteristic	Information
Chemical name	Propylene glycol
Synonyms and trade names	1,2-Dihydroxypropane; 1,2-propanediol; 1,2-propylene glycol; 2,3-propanediol; hydroxy-propanol; alpha-propylene glycol; methyl glycol; methylethyl glycol; monopropylene glycol; trimethyl glycol.
Registered trade name(s)	PG-12; Sirlene
Chemical formula	$C_3H_8O_2$
Chemical structure[b]	
Identification numbers:	
CAS registry	57-55-6
NIOSH RTECS	TY2000000
EPA hazardous waste	No data
OHM/TADS	7216877
DOT/UN/NA/IMDG shipping	No data
HSDB	174
NCI	No data

[a]All information obtained from HSDB 1994b, except where noted.
[b]EPA 1987a

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; OHM/TADS = Oil and Hazardous Materials/Technical Assistance Data System; RTECS = Registry of Toxic Effects of Chemical Substances

Table 3-2. Physical and Chemical Properties of Propylene Glycol[a]

Property	Propylene glycol
Molecular weight	76.11[b]
Color	Colorless[d]
Physical state	Liquid[b]
Melting point	-60 °C[e,b] (forms glass)
Boiling point	187.6; 188.2 °C[b]
Density:	
at 20 °C (g/cm^3)	1.0361[c]
Odor	Odorless
Odor threshold	No data
Solubility:	
Water at 20 °C	Miscible with water
Organic solvent(s)	Soluble in alcohol, ether, benzene, soluble in acetone, chloroform[b].
Partition coefficients:	
Log K_{ow}	-0.92[f,g]
Log K_{oc}	0.88[f], 0.76[g]
Vapor pressure at 20 °C	0.07 mm Hg[also d]
Henry's law constant at 25 °C	$1.2x10^{-8}$ atm-m^3/mole; $1.7x10^{-8}$ atm-m^3/mole[g]
Autoignition temperature	421.26 °C[h]; 371 °C[i]
Flashpoint	99.04 °C[h,i]
Flammability limits	2.6–12.5%[h,I]
Conversion factors	1 ppm = 3.11 mg/m^3[j] 1 mg/L = 321.6 ppm[j]
Explosive limits	No data

[a]All information obtained from HSDB 1995b, except where noted.
[b]Merck 1989
[c]Weast 1988
[d]Lewis 1993
[e]Daubert and Danner 1980
[f]EPA 1987a
[g]ASTER 1995
[h]Daubert and Danner 1989
[i]NFPA 1994
[j]Rowe and Wolf 1982