4. CHEMICAL AND PHYSICAL INFORMATION

4.1 CHEMICAL IDENTITY

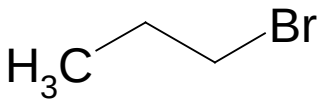
Information regarding the chemical identity of 1-bromopropane is provided in Table 4-1.

Commercial 1-bromopropane has been reported to be 99% pure (ACGIH 2014). 1-Bromopropane used as a commercial solvent blend is formulated to improve performance and inhibit decomposition, including stabilization to prevent hydrolysis (NTP 2011) and is between 85 and 99% pure (UNEP 2001). 2-Bromopropane is present as a contaminant at 0.1–0.2% (OSHA 1999).

4.2 PHYSICAL AND CHEMICAL PROPERTIES

Information regarding the physical and chemical properties of 1-bromopropane is provided in Table 4-2.

Table 4-1. Chemical Identity of 1-Bromopropane[a]

Characteristic	Information
Chemical name	1-Bromopropane
Synonym(s)	Propane, 1-bromo-; propyl bromide; n-propyl bromide; 1-BP
Registered trade name(s)	Abzol; Ensolv; Solvon; Ensolv-NDI; Whisper Spray; Soft Seam[b]
Chemical formula	C_3H_7Br
Chemical structure	
Identification numbers:	
CAS Registry	106-94-5
NIOSH RTECS	TX4110000[c]
EPA Hazardous Waste	No data
OHM/TADS	No data
DOT/UN/NA/IMDG	UN 2344; IMO 3
HSDB	1068
NCI	No data

[a]All information obtained from HSDB (2013), unless otherwise noted.
[b]EPA 2007c.
[c]RTECS 2009.

CAS = Chemical Abstracts Services; CIS = Chemical Information System; DOT/UN/NA/IMDG = Department of Transportation/United Nations/North America/International Maritime Dangerous Goods Code; EPA = Environmental Protection Agency; HSDB = Hazardous Substance 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 4-2. Physical and Chemical Properties of 1-Bromopropane[a]

Property	
Molecular weight (g/mol)	122.99
Color	Colorless
Physical state	Liquid
Melting point	-110°C
Boiling point	71°C
Density: at 20°C/20°C	1.353
Odor	Sweet
Odor threshold:	
Water	No data
Air	No data
Taste	No data
Solubility:	
Water at 20°C	$2.45x10^3$ mg/L
Other solvents	Soluble in acetone, ethanol, ether, benzene, chloroform, carbon tetrachloride
Partition coefficients:	
Log K_{ow}	2.10
Log K_{oc}	40 (estimated)
Vapor pressure at 20°C	110.8 mm Hg
OH radical rate constant at 25°C	1.18×10^{-12} cm^3/molecules-second[b]
Henry's law constant at 20°C	7.3×10^{-3} atm-m^3/mol (estimated)
Autoignition temperature	490°C
Flashpoint	21°C[c]
Flammability limits at 25°C	No data
Incompatibilities	Strong oxidants; strong bases
Conversion factors (25°C and 1 atm)	1 mg/L=198.8 ppm; 1 ppm=5.03 mg/m^3
Explosive limits	LEL=4.6%

[a]All information obtained from HSDB (2013), unless otherwise noted.
[b]Donaghy et al. (1993)
[c]Alfa Aesar (2014)