4. CHEMICAL AND PHYSICAL INFORMATION

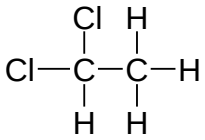
4.1 CHEMICAL IDENTITY

The synonyms, and identification numbers for 1,1-dichloroethane are listed in Table 4-1.

4.2 PHYSICAL AND CHEMICAL PROPERTIES

Important physical and chemical properties of 1,1-dichloroethane are listed in Table 4-2.

Table 4-1. Chemical Identity of 1,1-Dichloroethane

Characteristic	Information[a]	Reference
Chemical name	1,1-Dichloroethane[b]	
Synonym(s)	Alpha,alpha-dichloroethane; asymmetrical dichloroethane; S-dichloroethene; Dutch oil; ethane, 1,1-dichloro-; ethylidene chloride; ethylidene dichloride; 1,1-ethylidene dichloride[c]	
Registered trade name(s)	No data	
Chemical formula	$C_2H_4Cl_2$[b]	
Chemical structure		
Identification numbers:		
CAS registry	75-34-3[b]	
NIOSH RTECS	KI0175000	
EPA hazardous waste	U076	
OHM/TADS	No data	
DOT/UN/NA/IMDG shipping	DOT 2362; UN 2362; IMO 3.2	
HSDB	64	
NCI	C04535[d]	

[a]All information obtained from HSDB 2012, except where noted
[b]O'Neil et al. 2006
[c]Archer 1978; Weiss 1986
[d]ChemIDPlus Lite 2012

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 4-2. Physical and Chemical Properties of 1,1-Dichloroethane

Property	Information	Reference
Molecular weight	98.97	HSDB 2012
Color	Colorless	
Physical state	Oily liquid	O'Neil et al. 2006
Melting point	-96.9 °C	HSDB 2012
Boiling point	57.3 °C	O'Neil et al. 2006
Density at 20 °C	1.175 g/cm^3	HSDB 2012
Odor	Aromatic ethereal; chloroform-like	
Odor threshold:		
Water	No data	
Air	120 ppm; 200 ppm	Verschueren 1983
Solubility:		
Water at 20 °C	0.55 g/100 g	HSDB 2012
Organic solvents	Miscible with oxygenated and chlorinated solvents	
Partition coefficients:		
Log K_{ow}	1.79	HSDB 2012
Log K_{oc}	1.48	HSDB 2012
Vapor pressure at 25 °C	230 mmHg	HSDB 2012
Henry's law constant at 24 °C	5.62x10^{-3} atm-m^3/mol 5.51x10^{-3} atm-m^3/mol	HSDB 2012 Chen et al. 2012
Autoignition temperature	457.8 °C	HSDB 2012
Flashpoint	Closed cup -12 °C; open cup 14 °C	HSDB 2012
Flammability limits	Lower 5.4%; upper 11.4%	HSDB 2012
Conversion factors	1 ppm x 4.05 = 1 mg/m^3 1 mg/m^3 x 0.25 = 1 ppm	
Explosive limits	Lower explosive limit: 5.6%; moderate explosion hazard when exposed to heat or flame	HSDB 2012