

## **4. CHEMICAL AND PHYSICAL INFORMATION**

### **4.1 CHEMICAL IDENTITY**

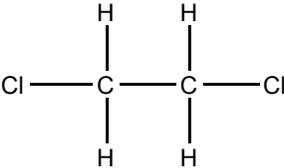
The chemical formula, structure, synonyms, and identification numbers for 1,2-dichloroethane are listed in Table 4-1.

### **4.2 PHYSICAL AND CHEMICAL PROPERTIES**

The physical and chemical properties of 1,2-dichloroethane are located in Table 4-2.

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**Table 4-1. Chemical Identity of 1,2-Dichloroethane**

Characteristic	Information	Reference
Chemical Name	1,2-Dichloroethane	Budavari et al. 1996
Synonym(s)	Ethylene dichloride; dichloroethane; EDC; Dutch liquid	Budavari et al. 1996
Registered trade name(s)	No data	
Chemical formula	C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub>	Budavari et al. 1996
Chemical structure	 <pre>       H   H             Cl — C — C — Cl                   H   H           </pre>	Budavari et al. 1996
Identification numbers:		
CAS registry	107-06-2	Lide 1998
NIOSH RTECS	KI0525000	HSDB 2001
EPA hazardous waste	U077	HSDB 2001
OHM/TADS	7216717	HSDB 2001
DOT/UN/NA/IMCO shipping	1184	HSDB 2001
HSDB	65	HSDB 2001
NCI	C00511	HSDB 2001

CAS = Chemical Abstracts Services; DOT/UN/NA/IMCO = 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 Material/Technical Assistance Data system; RTECS = Registry of Toxic Effects of Chemical Substances

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

Property	Information	Reference
Molecular weight	98.96	Lide 1998
Color	Colorless	Lewis 1993
Physical state	Heavy liquid	Budavari et al. 1996
Melting point	-35.5 EC	Lide 1998
Boiling point	83.5 EC	Lide 1998
Density:		
at 20 EC	1.23 g/cm <sup>3</sup>	Lide 1998
Odor	Pleasant odor	Budavari et al. 1996
Odor threshold:		
Water	20 mg/L	Verschueren 1996
Air	12 ppm 50 ppm 100 ppm	Verschueren 1996 Torkelson and Rowe 1981 Weiss 1980
Solubility:		
Water at 20 EC	8.69x10 <sup>3</sup> mg/L	Verschueren 1996
Organic solvent(s)	Miscible with alcohol, chloroform and ether	Budavari et al. 1996
Partition coefficients:		
Log K <sub>ow</sub>	1.48	Hansch et al. 1995
Log K <sub>oc</sub>	1.28 1.52 1.62	Chiou et al. 1980 Sabljić et al. 1995 Borisover and Graber 1997
Vapor pressure	79.1 mmHg at 25 EC	Daubert et al. 1989
Henry's law constant at 20 EC	1.1x10 <sup>-3</sup> atm-m <sup>3</sup> /mol	Staudinger and Roberts 1996
Autoignition temperature	413 EC	Weiss 1980

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**Table 4-2. Physical and Chemical Properties of 1,2-Dichloroethane (continued)**

Property	Information	Reference
Flashpoint	13 EC (closed cup) 18 EC (open cup)	Budavari et al. 1996 Budavari et al. 1996
Conversion factors:		
ppm (v/v) to mg/m <sup>3</sup> in air (25 EC)	ppm(v/v)x4.05 = mg/m <sup>3</sup>	Torkelson 1994
mg/m <sup>3</sup> to ppm (v/v) in air (25 EC)	mg/m <sup>3</sup> x0.247 = ppm(v/v)	Torkelson 1994
Explosive limits	6-16% v/v in air	Lewis 1993