3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

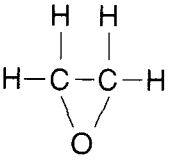
Tables 3-l lists common synonyms, trade names, and other pertinent identification information for ethylene oxide.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

Table 3-2 lists important physical and chemical properties of ethylene oxide.

3. CHEMICAL AND PHYSICAL INFORMATION

TABLE 3-1. Chemical Identity of Ethylene Oxide

	Value	Reference
Chemical name	Ethylene oxide	NLM 1988
Synonyms	Oxirane; dihydro-oxirene; dimethylene oxide; epoxyethane; ethene oxide; ETO	NLM 1988
Trade names	Anprolene Oxyfume; T-Gas	NLM 1988
Chemical formula	C_2H_4O	NLM 1988
Chemical structure		
Identification numbers:		
CAS Registry	75-21-8	NLM 1988
NIOSH RTECS	KX2450000	HSDB 1988
EPA Hazardous Waste	U115	NLM 1988
OHM/TADS	7216724	HSDB 1988
DOT/UN/NA/IMCO	UN 1040	NLM 1988
Shipping	IMCO. 2.3	HSDB 1988
HSDB	170	NLM 1988
NCI	C50088	NLM 1988

CAS = Chemical Abstracts Service; NIOSH = National Institute for Occupational Safety and Health; RTECS = Registry of Toxic Effects of Chemical Substances; EPA = Environmental Protection Agency; OHM/TADS = Oil and Hazardous Materials/Technical Assistance Data System; DOT/UN/NA/IMCO = Department of Transportation/United Nations/North America/International Maritime Dangerous Goods Code; HSDB = Hazardous Substances Data Bank; NCI = National Cancer Institute.

TABLE 3-2. Physical and Chemical Properties of Ethylene Oxide

Property	Value	Reference
Molecular weight	44.05	Weast 1985
Color	Colorless	Verschueren 1983
Physical state	Gas	Verschueren 1983
Melting point	-111°C	Weast 1985
Boiling point	11°C	Verschueren 1983
Density at 10°C	0.8824	Weast 1985
Odor	Sweet, olefinic	Verschueren 1983
Odor threshold:		
Water	140 mg/L	Amoore and Hautala 1983
Air	787 mg/m^3	Amoore and Hautala 1983
Solubility:		
Water at 20°C	1×10^6 mg/L	PHRED 1988
Organic solvents	Soluble in alcohol, ether, acetone, benzene	Weast 1985
Partition coefficients:		
Log octanol/water	-0.22	PHRED 1988
Log K_{oc}	0.342	PHRED 1988
Vapor Pressure at 20°C	1.095×10^3 mmHg	Verschueren 1983
Henry's law constant	7.56×10^{-5} atm-m^3/mol	PHRED 1988
Autoignition temperature	429°C	HSDB 1988
Flashpoint	<-18°C	HSDB 1988
Flammability limits	No data	
Conversion factors	1 ppm = 1.83 mg/m^3	Verschueren 1983
	1 mg/m^3 = 0.55 ppm	Verschueren 1983