

3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

Information regarding the chemical identity of sulfur dioxide is located in Table 3- 1.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

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

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Table 3-1. Chemical Identity of Sulfur Dioxide

Characteristic	Sulfur dioxide	Reference
Synonyms	Sulphur dioxide; sulfurous anhydride; sulfur oxide; sulfurous oxide; sulfurous acid anhydride	HSDB 1998
Registered trade name(s)	No data	
Chemical formula	SO ₂	HSDB 1998
Chemical structure	O=S=O	HSDB 1998
Identification numbers:		
CAS registry	7446-09-5	HSDB 1998
NIOSH RTECS	WS4550000	HSDB 1998
EPA hazardous waste	No data	
OHM/TADS	7216914	OHM/TADS 1998
DOT/UN/NA/IMCO shipping	UN1079	HSDB 1998
HSDB	228	HSDB 1998
NCI	No data	

CAS = Chemical Abstracts Service; 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 Materials/Technical Assistance Data System; RTECS = Registry of Toxic Effects of Chemical Substances

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Table 3-2. Physical and Chemical Properties of Sulfur Dioxide

Property	Sulfur Dioxide	Reference
Molecular weight	64.06	Lide 1993
Color	Colorless	Lide 1993
Physical state	Gas (or liquid)	Lide 1993
Melting point	-72.7°C	Lide 1993
Boiling point	-10°C	Lide 1993
Density	2.927 g/L (gas); 1.434 (liquid)	Lide 1993
Odor	Strong odor, suffocating	Lide 1993
Odor threshold:		
Water	No data	HSDB 1998
Air	Low: 1.175 mg/m ³ (0.45 ppm); high: 12.5 mg/m ³ (4.8 ppm); irritating: 5 mg/m ³ (1.9 ppm)	
Solubility:		
Water at 0°C	22.8 g/100 cc	HSDB 1998
Water at 20°C	11.3 g/100 cc	
Water at 90°C	0.58 g/100 cc	
Organic solvents	Acetic acid, alcohol, chloroform, ether, sulfuric acid	
Partition coefficients:		
Log K _{ow}	No data	
Log K _{oc}	No data	
Vapor Pressure	3000 mm Hg at 20°C	HSDB 1998
Henry's law constant	No data	
Autoignition temperature	No data	
Flashpoint	No data	
Flammability limits	Nonflammable	HSDB 1998
Conversion factors	2.62 mg/m ³ = 1 ppm	IARC 1992
Explosive limits	No data	

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