

3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

Information regarding the chemical identity of diisopropyl methylphosphonate is located in Table 3-1.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

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

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TABLE 3-1. Chemical Identity of Diisopropyl Methylphosphonate

Characteristic	Information	Reference
Chemical name	Diisopropyl methylphosphonate	EPA 1989
Synonym(s)	DIMP; diisopropyl methanephosphonate; phosphonic acid; methyl-, bis-(1-methyl-ethyl) ester; phosphonic acid, methyl-diisopropyl ester	Dacre and Rosenblatt 1987
Registered trade name(s)	Not a commercial substance	
Chemical formula	C ₇ H ₁₇ O ₃ P	Dacre and Rosenblatt 1987
Chemical structure	$ \begin{array}{ccccc} \text{H}_3\text{C} & & \text{O} & & \text{CH}_3 \\ & \backslash & & / & \\ & \text{CH-O} & \text{P-O} & \text{CH} & \\ & / & & \backslash & \\ \text{H}_3\text{C} & & \text{CH}_3 & & \text{CH}_3 \end{array} $	Dacre and Rosenblatt 1987
Identification numbers:		
CAS registry	1445-75-6	Dacre and Rosenblatt 1987
NIOSH RTECS	SZ9090000	Dacre and Rosenblatt 1987
EPA hazardous waste	No data	
OHM/TADS	No data	
DOT/UN/NA/IMCO shipping	No data	
HSDB	6864	HSDB 1994
NCI	No data	

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 Materials/Technical Assistance Data System; RTECS = Registry of Toxic Effects of Chemicals Substances

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TABLE 3-2. Physical and Chemical Properties of Diisopropyl Methylphosphonate

Property	Information	Reference
Molecular weight	180.18	Dacre and Rosenblatt 1987
	180.21	HSDB 1994
Color	Colorless	EPA 1989
Physical state	Liquid	EPA 1989
Melting point	No data	
Boiling point	174°C	EPA 1989
Density:		
At 25°C	0.976 g/mL	EPA 1989
Odor	No data	
Odor threshold	No data	
Solubility:		
Water at 0°C	80 g/L	Bucci et al. 1997
Water at 25°C	1-2 g/L	Dacre and Rosenblatt 1987
Water at 80°C	11 g/L	Dacre and Rosenblatt 1987
Partition coefficients:		
Log K _{ow}	No data	
Log K _{oc}	No data	
Vapor pressure:		
Temperature not specified	10 ⁻⁴ -1 mmHg	Rosenblatt et al. 1975a, 1975b
At 10°C	13 (estimated)	Dacre and Rosenblatt 1987
At 100°C	34 (estimated)	Dacre and Rosenblatt 1987
Henry's law constant	No data	
Autoignition temperature	No data	
Flashpoint	No data	
Flammability limits	No data	
Conversion factors	No data	
Explosive limits	No data	

