

### **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 <sub>7</sub> H <sub>17</sub> O <sub>3</sub> 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	

