

3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

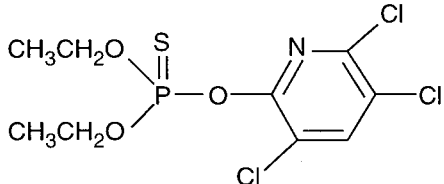
Information regarding the chemical identity of chlorpyrifos is located in Table 3-1.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

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

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Table 3-1. Chemical Identity of Chlorpyrifos

Characteristic	Information	Reference
Chemical name	O,O-diethyl O-(3,5,6-trichloro-2-pyridyl) phosphorothioate	Merck 1989
Synonym(s)	Phosphorothioic acid O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) ester; chlorpyrifos-ethyl; chlorpyriphos	Merck 1989
Registered trade name(s)	Dowco 179; ENT 27311; Dursban; Lorsban; Pyrinex; DMS-0971	Merck 1989
Chemical formula	C ₉ H ₁₁ Cl ₃ NO ₃ PS	Merck 1989
Chemical structure		Merck 1989
Identification numbers:		
CAS Registry	2921-88-2	Merck 1989
NIOSH RTECS	TF6300000	HSDB 1994
EPA Hazardous Waste	059101	HSDB 1994
OHM/TADS	7800025	HSDB 1994
DOT/UN/NA/IMCO	NA 2783 Chlorpyrifos	HSDB 1994
HSDB	389	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 Substance 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 Chlorpyrifos

Property	Information	Reference
Molecular weight	350.57	Merck 1989
Color	White granular crystals White to tan Amber solid cake with amber oil Colorless crystals	Merck 1989 EPA 1988 Verschueren 1983 Worthing 1987
Physical state	Crystalline solid	EPA 1988
Melting point	41–42 °C	Merck 1989
Boiling point	Decomposes at approximately 160 °C	Verschueren 1983
Density at 43.5 °C	1.398 g/cm ³	Verschueren 1983
Odor	Mild mercaptan	EPA 1988
Odor threshold:		
Water	No data	
Air	No data	
Solubility:		
Water at 20 °C	0.7 mg/L	Bowman 1983
Water at 25 °C	2 mg/L	Merck 1989
Organic solvent(s)	79% w/w in isooctane 43% w/w in methanol Readily soluble in other organic solvents	Merck 1989
Partition coefficients:		
Log K _{ow}	4.82	McCall et al. 1980
Log K _{oc}	3.73	
Vapor pressure at 20 °C	1.87x10 ⁻⁵ mm Hg	Verschueren 1983
Vapor pressure at 25 °C	1.87x10 ⁻⁵ mm Hg	Merck 1989
Henry's law constant: at 25 °C	1.23x10 ⁻⁵ atm·m ³ /mol	HSDB 1995
Autoignition temperature	No data	
Flashpoint	None	EPA 1988b
Flammability limits at 25 °C	No data	
Conversion factors (25 °C)	1 ppm=14.3 mg/m ³ 1 mg/m ³ =0.070 ppm	
Explosive limits	No data	

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