4. CHEMICAL AND PHYSICAL INFORMATION

4.1 CHEMICAL IDENTITY

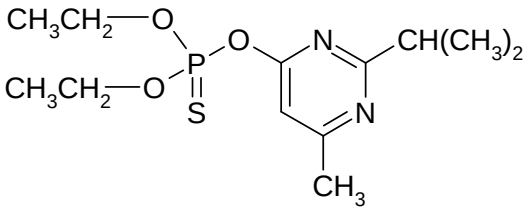
Information regarding the chemical identity of diazinon is located in Table 4-1.

Diazinon is manufactured in the United States and formulated as granules, a wettable powder, an emulsifiable solution, a dust, a seed dressing, or a mixed formulation with other insecticides. Manufacture of diazinon for indoor use products in the United States was discontinued as of March 1, 2001, and manufacture of non-agricultural outdoor use products was discontinued as of June 30, 2003 (HSDB 2006; WHO 1998).

4.2 PHYSICAL AND CHEMICAL PROPERTIES

Information regarding the physical and chemical properties of diazinon is located in Table 4-2.

Table 4-1. Chemical Identity of Diazinon

Characteristic	Information	Reference
Chemical name	O,O-Diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate	HSDB 2006
Synonyms(s)	O,O-Diethyl-O-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate; O,O-diethyl-O-6-methyl-2-isopropyl-4-pyrimidinyl] phosphorothioate; others	HSDB 2006
Registered trade name(s)	Diazinon; Alfa-tox; Basudin; Diazol; Gardentox; Knox-Out; Spectracide; others	HSDB 2006
Chemical formula	$C_{12}H_{21}N_2O_3PS$	HSDB 2006
Chemical structure		Kappers et al. 2001
Identification numbers:		
CAS registry	333-41-5	HSDB 2006
NIOSH RTECS	TF 3325000	NIOSH 2006
EPA hazardous waste	No data	
OHM/TADS	No data	
DOT/UN/NA/IMCO shipping	UN 2783 Organophosphorouspesticides; UN 2784 Organophosphorouspesticides; UN 3017 Organophosphorouspesticides; UN 3018 Organophosphorouspesticides; IM06.1 Organophosphorouspesticides; solid; IMO3.0 Organophosphorouspesticides; liquid	HSDB 2006
HSDB	303	HSDB 2006
NCI	CO 8673	HSDB 2006

CAS = Chemical Abstracts Services; DOT/UN/NA/IMCO = Department of Transportation/United Nations/North America/Intergovernmental 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

Table 4-2. Physical and Chemical Properties of Diazinon

Property	Information	Reference
Molecular weight	304.35	HSDB 2006
Color	Colorless	HSDB 2006
Physical state	Liquid	HSDB 2006
Melting point	No data	HSDB 2006
Boiling point	83–84 °C at $2x10^{-3}$ mm Hg; decomposes at >120 °C	O'Neil et al. 2001
Density:		
at 20 °C/4 °C	1.116–1.118 g/mL	HSDB 2006
Odor	Faint ester-like	HSDB 2006
Odor threshold:		
Water	No data	
Air	No data	HSDB 2006
Taste threshold	No data	
Solubility:		
Water at 20 °C	0.004% (40 mg/L)	HSDB 2006
Organic solvent(s)	Miscible with petroleum ether, alcohols, ether, cyclohexane, benzene and similar hydrocarbons	HSDB 2006
Partition coefficients:		
Log K_{ow}	3.81	HSDB 2006
Log K_{oc}	1.602–2.635, average for three soils, 2.281	HSDB 2006
Vapor pressure		
at 20 °C	$9.01x10^{-5}$ mm Hg	HSDB 2006
at 40 °C[b]	$1.1x10^{-3}$ mm Hg	O'Neil et al. 2001
Henry's law constant	$1.17x10^{-7}$ atm-m^3/mol	
Autoignition temperature	No data	HSDB 2006
Flashpoint	82.2 ºC	NIOSH 2006
Flammability limits	Practically nonflammable	HSDB 2006
Explosive limits	No data	HSDB 2006

HSDB = Hazardous Substances Data Bank; NIOSH = National Institute for Occupational Safety and Health;