4. CHEMICAL AND PHYSICAL INFORMATION

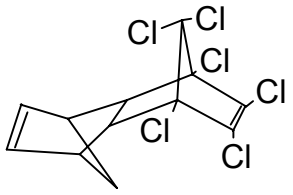
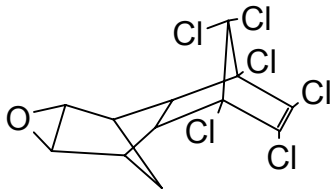
4.1 CHEMICAL IDENTITY

Information regarding the chemical identity of aldrin/dieldrin is located in Table 4-1.

4.2 PHYSICAL AND CHEMICAL PROPERTIES

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

Table 4-1. Chemical Identity of Aldrin and Dieldrin[a]

Characteristic	Aldrin	Dieldrin
Synonym(s)	1,2,3,4,10,10-Hexachloro-1,4,4*α* 5,8,8*α*-hexahydro-exo-1,4-endo-5,8-dimethano- naphthalene; HHDN[b]	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4*α*,5,6,7,8,8*α*-octa-hydro-1,4-endo,exo-5,8-dimethanonaphthalene; HEOD[b]
Registered trade name(s)	Aldrec; Aldrex; Drinox; Octalene; Seedrin; Compound 118	Alvit; Dieldrix; Octalox; Quintox; Red Shield[c]
Chemical formula	$C_{12}H_8Cl_6$	$C_{12}H_8Cl_6O$
Chemical structure[d]		
Identification numbers:		
CAS registry	309-00-2	60-57-1
NIOSH RTECS	IO2000000	IO1750000
EPA hazardous waste	P004	PO37
OHM/TADS	7215090[c]	7216516[c]
DOT/UN/NA/IMCO shipping	IM06.1 NA2762	UN2761
HSDB	199	322
NCI	C00044	C00124

[a]All information obtained from HSDB 2001a or 2001b unless otherwise noted.
[b]Tomlin 1997
[c]OHM/TADS 1990b
[d]Verschueren 2001

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 Chemical Substances

Table 4-2. Physical and Chemical Properties of Aldrin and Dieldrin[a]

Property	Aldrin	Dieldrin
Molecular weight	364.91	380.91
Color	White (pure); tan to brown (technical grade)	White (pure); light brown (technical grade)
Physical state	Crystalline solid[b]	Crystalline solid[b]
Melting point	104–105.5 EC[c]; 49–60 EC (technical grade)[c]	176–177 EC[c]; 95 EC (technical grade)[d]
Boiling point	Decomposes[e]	Decomposes[e]
Density	1.6 g/L at 20 EC[f]	1.75 g/L at 25 EC[f]
Odor	Mild chemical odor[e]	Mild chemical odor[e]
Odor threshold: Water Air	 No data 0.017 mg/kg[c]	 No data 0.041 mg/kg[c]
Solubility: Water at 20 EC Organic solvents	 0.011 mg/L[g] Very soluble in most organic solvents[b]	 0.110 mg/L[g] Moderately soluble in common organic solvents except aliphatic petroleum solvents and methyl alcohol[b]
Partition coefficients: Log K_{ow} Log K_{oc}	 6.50[h] 7.67[i]	 6.2[c] 6.67[i]
Vapor pressure: at 20 EC at 25 EC	 7.5×10^{-5} mmHg[b] 1.2×10^{-4} mmHg	 3.1×10^{-6} mmHg[b] 5.89×10^{-6} mmHg[j]
Henry's law constant: at 25 EC	 4.9×10^{-5} atm-m^3/mol[k]	 5.2×10^{-6} atm-m^3/mol[k]
Autoignition temperature	No data	No data
Flashpoint	No data	No data
Flammability limits	Nonflammable[f]	Nonflammable[f]
Conversion factors	1 ppm=14.96 mg/m^3 at 25 EC, 1 atm	1 ppm=15.61 mg/m^3 at 25 EC, 1 atm[l]
Explosive limits	Stable[f]	Stable[f]

[a]All information obtained from HSDB 2001a or 2001b unless otherwise noted.
[b]Budavari et al. 2001
[c]Verschueren 2001
[d]Hayes 1982
[e]NIOSH 1997
[f]Weiss 1986
[g]Bus and Leber 2001
[h]Hansch et al. 1995
[i]Briggs 1981
[j]Grayson and Fosbraey 1982
[k]Guerin and Kennedy 1992
[l]EPA 1987a