ALDRIN

($C_{12}H_8C_{16}$) CAS # 309-00-2 (Pesticide)

Synonyms include Aldrec, Aldrex, Seedrin, Octalene, and 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4-endo and 5,8-exo-dimethanonaphthalene

SOURCE/USE

Aldrin was first synthesized in the U.S. in 1948. Aldrin has not been produced in the U.S. since 1974. It was used to control pests of corn and citrus crops. Past uses also included general crop protection and timber preservation. Aldrin is expected to be one of the more toxicologically important air contaminants found during remediation projects.

ROUTES OF EXPOSURE

Although the risk of off-post acute exposure to aldrin as a result of remediation at the Rocky Mountain Arsenal is very small, any such exposure would very likely be via inhalation. Also, the concentrations resulting in acute clinical effects discussed in this document reflect occupational exposures or animal testing which are much higher than those likely to be encountered at the fence line. The odor of aldrin may provide warning of acutely hazardous concentrations. Aldrin vapor is heavier than air and may cause asphyxiation in enclosed, poorly ventilated, or low-lying areas. Other routes of exposure include dermal/ocular contact and ingestion.

APPLICABLE STANDARDS AND LIMITS	
ATSDR MRL	Not Available
OSHA PEL	250 µg/m^3
ACGIH TLV	250 µg/m^3
NIOSH REL	250 µg/m^3
Odor threshold	Not Available
RMA acute fence line criteria	ARC - 0.51 µg/m^3 MARC – 5.1 µg/m^3
RMA chronic fence line criteria	Cancer - 0.00056 µg/m^3 Noncancer - 0.11 µg/m^3

The goal of the remediation is exposure prevention through remedial design, environmental monitoring,

and modeling. Failure of prevention could result in acute and/or chronic exposures. Following is an overview of the types of health effects associated with aldrin exposure.

ACUTE HEALTH EFFECTS

Myoclonic jerking, CNS excitation, and recurrent convulsions may occur from exposure to aldrin. Early signs of aldrin poisoning involve hypesthesia and paresthesia of the face and extremities, headache, dizziness, and incoordination. Occasional reports have associated peripheral neuropathy with exposure to organochlorines such as aldrin.

No conclusive information regarding respiratory effects from aldrin was located.

Massive doses of aldrin can cause cardiac abnormalities. Rise in blood pressure, tachycardia, arrhythmias, and fever are described.

Dermal effects in humans were reported from extensive contact with organochlorines. Dermatitis is unusual with this compound. Minor erythema may occur.

No studies were located regarding ocular effects in humans after inhalation exposure to aldrin.

No studies were located regarding gastrointestinal effects in humans after inhalation exposure to aldrin. When ingested, aldrin may cause nausea and vomiting.

CHRONIC HEALTH EFFECTS

Chronic exposure to aldrin results in neurological effects similar to acute exposure. Aldrin may produce CNS excitement, EEG abnormalities, and tonic-clonic seizures. No permanent disabilities were reported in workers who had experienced aldrin-induce seizures.

Aldrin is a carcinogen causing increases in a variety of tumors in rats at low but not at high doses. It also produces increased incidence of liver tumors in mice. Aldrin is classified as a probable human carcinogen.

Aldrin is toxic to the reproductive system and is teratogenic. Accumulation of aldrin in amniotic fluid and in the developing fetus are reported. Reproductive effects include decreased fertility, increased fetal death, and effects on gestation. Teratogenic effects include cleft palate, webbed foot, and skeletal anomalies. Chronic effects attributed to aldrin in animals include hepatomegaly, and fatty degenerative changes in the kidneys.