

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Dieldrin Solution Reference Material in n-Hexane

1.2 Other means of identification

Product number CPRM4285

Other names (1aR,2R,2aS,3S,6R,6aR,7S,7aS)-rel-3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-2,7:3,6-dimethanonaphth[2,3-b]oxirene; (1R,4S,4aS,5R,6R,7S,8S,8aR)-1,2,3,4,10,10-hexachloro-1,4,4a,5,6,7,8,8a-octahydro-6,7-epoxy-1,4:5,8-dimethanonaphthalene; HEOD

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 3, Oral

Acute toxicity - Category 1, Dermal

Carcinogenicity, Category 2

Specific target organ toxicity – repeated exposure, Category 1

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H301 Toxic if swallowed

H310 Fatal in contact with skin

H351 Suspected of causing cancer

H372 Causes damage to organs through prolonged or repeated exposure

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P262 Do not get in eyes, on skin, or on clothing.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P203 Obtain, read and follow all safety instructions before use.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

Response	P301+P316 IF SWALLOWED: Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P316 Get emergency medical help immediately. P361+P364 Take off immediately all contaminated clothing and wash it before reuse. P318 IF exposed or concerned, get medical advice. P319 Get medical help if you feel unwell. P391 Collect spillage.
Storage	P405 Store locked up.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Dieldrin Solution Reference Material in n-Hexane	Dieldrin	60-57-1	200-484-5	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Give a slurry of activated charcoal in water to drink. Do NOT induce vomiting. Rest. Refer for medical attention.

4.2 Most important symptoms/effects, acute and delayed

Inhalation, ingestion, or skin contact causes irritability, convulsions and/or coma, nausea, vomiting, headache, fainting, tremors. Contact with eyes causes irritation. (USCG, 1999)

This material is extremely toxic. It is rapidly absorbed through the skin. Symptoms appear between 20 minutes and 12 hours after exposure. There is evidence that this material may cause chromosomal damage. Doses of 1 mg/kg can cause symptoms. It is a suspected carcinogen. Also, it is a central nervous system depressant and hepatotoxin. Pregnant women are considered to be at special risk. (EPA, 1998)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Treatment is symptomatic and supportive. Oils should not be used as either cathartics or dermal cleansing agents, as they increase absorption. Gastric lavage and use of activated charcoal and sodium sulfate are indicated for ingestion. If dermal exposure occurred, contaminated clothes should be removed, and the skin should be thoroughly cleansed with soap and water. Management of seizures in both children and adults is with Valium or phenobarbital. Respiratory depression and even respiratory arrest especially with concomitant use of Valium and phenobarbital in children, may occur. These drugs preferably should be used only in critical care areas where emergency endotracheal intubation can be performed. ... Epinephrine can not be utilized in patients with organochlorine poisoning, as the organochlorines induce myocardial irritability and ventricular arrhythmias may occur. However, dopamine may be necessary in the event of hypotension unresponsive to fluid administration, and epinephrine may be necessary in the event of cardiopulmonary arrest. ... In a critically ill patient with unknown insecticide exposure, a trial of atropine and pralidoxime should not be withheld until the etiologic agent is discovered, for the use of these agents may prove life-saving in organophosphate poisoning. Atropine must be used with caution, as it can cause ventricular irritability, especially when a myocardial irritant such as an organochlorine is present. ... Hematologic, hepatic (especially with endrin, which is markedly hepatotoxic), and renal studies as well as cardiopulmonary monitoring should be carried out in acute intoxication from lindane or other organochlorines for at least 48 to 72 hr. Long term hematologic follow-up is necessary for the patient with lindane intoxication. As the carrier for these agents may be xylene or a petroleum distillate, management also must include observation and treatment for these entities. Organochlorine pesticides

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

If material involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.)

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic and irritating hydrogen chloride fumes may form in fire. (USCG, 1999)

Toxic hydrogen chloride and phosgene may be generated when solution burns. Avoid strong oxidizers, strong acids and parathion. (EPA,

1998)

5.3 Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT wash away into sewer. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Do NOT wash away into sewer. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Personal protection: chemical protection suit including self-contained breathing apparatus.

6.3 Methods and materials for containment and cleaning up

Absorb spills with paper towels.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs and incompatible materials. See Chemical Dangers. Well closed. Keep in a well-ventilated room. Store in an area without drain or sewer access. Storage temp: ambient; venting: open (flame arrester) (for liquid form)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 0.1 mg/m³, as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans). MAK: (inhalable fraction): 0.25 mg/m³; peak limitation category: II(8); skin absorption (H)

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles or face shield.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation (not if powder).

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state

Dieldrin is a light-tan flaked solid. It is insoluble in water. It is toxic by inhalation, skin absorption and ingestion. It can penetrate intact skin. It is used as an insecticide.

Colour

COLORLESS CRYSTALS

Odour

Mild, chemical odor.

Melting point/freezing point

143-144°C(lit.)

Boiling point or initial boiling point and boiling range

385°C

Flammability

Noncombustible Solid

Lower and upper explosion limit/flammability limit

no data available

Flash point	155.314°C
Auto-ignition temperature	no data available
Decomposition temperature	245°C
pH	no data available
Kinematic viscosity	no data available
Solubility	less than 1 mg/mL at 75° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow= 5.40
Vapour pressure	3.1e-06 mm Hg at 68° F (NTP, 1992)
Density and/or relative density	1.849g/cm ³
Relative vapour density	13.2 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

50 mg/cu m; NIOSH has recommended that dieldrin be treated as a potential human carcinogen. Decomposes on heating. This produces toxic fumes including hydrogen chloride. Reacts with oxidants and acids. Attacks metals due to the slow formation of hydrogen chloride in storage. Decomposes above 245°C . This produces hydrogen chloride and phosgene.

10.2 Chemical stability

Stable to light

10.3 Possibility of hazardous reactions

Not flammableDIELDRIN is sensitive to mineral acids, acid catalysts, acid oxidizing agents and active metals. It reacts with phenols. This compound is also slightly corrosive to metals. It may react vigorously with strong oxidizers such as chlorine and permanganates and strong acids such as sulfuric or nitric. (NTP, 1992)

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizers, active metals such as sodium, strong acids, phenols.

10.6 Hazardous decomposition products

When heated to decomposition, emits toxic fumes of /hydrogen chloride/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 38.3 mg/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Cancer Classification: Group B2 Probable Human Carcinogen

Reproductive toxicity

no data available

STOT-single exposure

The substance may cause effects on the central nervous system. This may result in convulsions. Medical observation is indicated.

STOT-repeated exposure

Cumulative effects are possible. See Acute Hazards/Symptoms.

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 Goldfish 37 ug/L/96 hr, bluegill sunfish 8 ug/L/96 hr, fathead minnow 16 ug/L/96 hr, rainbow trout 10 ug/L/96 hr, coho salmon 11 ug/L/96 hr, chinook 6 ug/L/96 hr, pumpkinseed 6.7 ug/L/96 hr, channel catfish 4.5 ug/L; LC50 Mosquito fish 8 ppb for 48 hr; LC50 Bluegill sunfish 170 ppb and fathead minnow 24 ppb for 24 hr.
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

Dieldrin was not biodegraded in standard screening tests using domestic wastewater during a 28 day incubation period(1) and is extremely persistent in soils(2) under both aerobic and anaerobic conditions(3). It took 7 yr for half of the dieldrin to disappear from soil field plots(4). No biodegradation in river waters has been noted(5,7). There is some evidence that microorganisms can form photodieldrin from dieldrin(4,6). Dieldrin, present at 100 mg/l, reached 0 percent of its theoretical BOD in 2.5 weeks using an activated sludge inoculum at 30 mg/l and the Japanese MITI test(8).

12.3 Bioaccumulative potential

BCF values of 4,860 to 14,500 were measured for carp exposed to 1 ug/l of dieldrin and BCF values of 5,390 to 12,500 were measured for carp exposed to 0.1 ug/l over a 10 week incubation period(1). A BCF value of 10,000 was reported for dieldrin in unspecified species of fish(2). A BCF value of 3,300 was reported for dieldrin in lake trout(3). According to a classification scheme(4), this BCF data suggests bioconcentration in aquatic organisms is very high(SRC).

12.4 Mobility in soil

An average Koc value of 8,370 was determined for dieldrin in 7 soils(1). Koc values of 9,722 (organic top soil), 1,957 (creek sediment) and 23,310 (sandy loam) were determined for dieldrin(2). Dieldrin has a measured log Koc of 3.87(3) and an Rf value for soil thin layer chromatography of 0.00(3,5). According to a classification scheme(6), these measured Koc values suggest that dieldrin is expected to have low to no mobility in soil(SRC). Even with high temperatures and prolonged leaching dieldrin was shown to be immobile(4).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN2995 (For reference only, please check.) IMDG: UN2995 (For reference only, please check.) IATA: UN2995 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23 °C (For reference only, please check.) IMDG: ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23 °C (For reference only, please check.) IATA: ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23 °C (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.) IMDG: 6.1 (For reference only, please check.) IATA: 6.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.) IMDG: I (For reference only, please check.) IATA: I (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Dieldrin	Dieldrin	60-57-1	200-484-5
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
Revision Date August 08, 2025

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

Depending on the degree of exposure, periodic medical examination is indicated. If the substance is formulated with solvent(s) also consult the card(s) (ICSC) of the solvent(s). Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. See ICSC 0774.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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