Chemical Safety Data Sheet MSDS / SDS

Endrin SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Endrin

CAS: 72-20-8

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

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SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 2, Oral
Acute toxicity - Category 3, Dermal

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

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H300 Fatal if swallowed
H311 Toxic in contact with skin
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.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
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.
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.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Endrin
Common names and synonyms:	Endrin
CAS number:	72-20-8
EC number:	200-775-7
Concentration:	100%

SECTION 4: First aid measures

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 .

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)

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: Firefighting measures

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.)

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)

Special protective actions for fire-fighters

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

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. 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. Do NOT wash away into sewer.

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.

Methods and materials for containment and cleaning up

Absorb spills with paper towels.

SECTION 7: Handling and storage

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.

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

Control parameters

Occupational Exposure limit values

TLV: 0.1 mg/m3, as TWA; (skin); A4 (not classifiable as a human carcinogen).MAK: (inhalable fraction): 0.05 mg/m3; peak limitation category: II(8); skin absorption (H); pregnancy risk group: C

Biological limit values

no data available

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.

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

Eye/face protection

Wear face shield or eye protection in combination with breathing protection if powder.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

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:	ca. 200°C (decomposes)

Boiling point or initial boiling point and boiling range:	416.2°C at 760 mmHg
Flammability:	Noncombustible Solid
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	155.3°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:	1.84g/cm3
Relative vapour density:	13.2 (NTP, 1992) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

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.

Chemical stability

Stable to light

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)

Conditions to avoid

no data available

Incompatible materials

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

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 and death. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

no data available

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying or when dispersed, especially if powdered.

SECTION 12: Ecological information

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

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).

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).

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).

Other adverse effects

no data available

SECTION 13: Disposal considerations

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

UN Number

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

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.)

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.)

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.)

Environmental hazards

ADR/RID: Yes

IMDG: Yes
IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

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.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Not Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

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

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.