Chemical Safety Data Sheet MSDS / SDS

Fenchlorphos 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: Fenchlorphos

CAS: 299-84-3

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

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Acute toxicity - Category 4, 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 Warning

Hazard statement(s)

H302 Harmful if swallowed
H312 Harmful 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+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P317 Get medical help.
P321 Specific treatment (see ... on this label).
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Storage

none

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:	Fenchlorphos
Common names and synonyms:	Fenchlorphos
CAS number:	299-84-3
EC number:	206-082-6
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

Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention .

Most important symptoms/effects, acute and delayed

Exposure Routes: inhalation, ingestion, skin and/or eye contact Target Organs: Eyes, liver, kidneys, blood plasma (NIOSH, 2016)

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

7c. after aspiration of gastric contents & washing of stomach, instill /prc- 30 g of activated charcoal in 3-4 oz of water (children), 100 g in 8-10 oz water (adults)/ ... through stomach tube to limit absorption of remaining toxicant. ... d. if bowel movement has not occurred in 4 hr, & ... patient is fully conscious, give sodium sulfate, 0.25 g/kg, in 6-8 oz of water, as cathartic. magnesium sulfate & citrate are equally suitable . retained magnesium may depress cns function. 8. do not admin morphine, aminophylline, phenothiazines, or reserpine, furosemide, or ethacrynic acid . organophosphate pesticides

SECTION 5: Firefighting measures

Suitable extinguishing media

Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: SMALL FIRE: Dry chemical, CO2 or water spray. LARGE FIRE: Dry chemical, CO2, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

Specific hazards arising from the chemical

Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.). Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. For electric vehicles or equipment, ERG Guide 147 (lithium ion batteries) or ERG Guide 138 (sodium batteries) should also be consulted. (ERG, 2016)

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: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into 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

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into 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.

Methods and materials for containment and cleaning up

1. Ventilate area of spill. 2. Collect spilled material in the most convenient & safe manner & deposit in sealed containers for reclamation, or for disposal in a secured sanitary landfill. Molten ronnel should be absorbed in vermiculite, dry sand, earth, or a similar material.

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

Separated from strong oxidants and food and feedstuffs.... MUST BE STORED IN ITS SEALED ORIGINAL CONTAINERS, IN WELL-AIRED, FRESH & DRYSTOREHOUSES OR IN SHADED & POSSIBLY WELL-AIRED PLACES. IT IS RECOMMENDED THAT THE PRODUCT'S TEMP ... NOT EXCEED 25-30 DEG C, & KEEP ... AWAY FROM SOURCES OF HEAT FREE FLAMES OR SPARK-GENERATING EQUIPMENT. CONTAINERS MUST BE STACKED IN SUCH A WAY AS TO PERMIT FREE CIRCULATION OF AIR ... AT BOTTOM & INSIDE OF PILES. STORAGE AREAS MUST BE LOCATED AT SUITABLE DISTANCE FROM INHABITED BUILDINGS, ANIMAL SHELTERS, & FOOD STORES; MOREOVER, THEY MUST BE INACCESSIBLE TO UNAUTHORIZED PERSONS, CHILDREN, & DOMESTIC ANIMALS. PROTHOATE

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 5 mg/m3, as TWA; A4 (not classifiable as a human carcinogen); BEI issued

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

Avoid inhalation of dust and mist. Use ventilation (not if powder), local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Ronnel is a white to light-tan crystalline solid. Mp: 41° C, Density :1.49 g cm-3 at 25°C. Biocidal (toxic to all animal life in differing degrees) by its action as a cholinesterase inhibitor. Used as an insecticide. Degrades readily in the environment by hydrolysis and oxidation.
Colour:	COLORLESS CRYSTALS
Odour:	Mercaptan odor
Melting point/freezing point:	35°C
Boiling point or initial boiling point and boiling range:	97 at 0.01 mm Hg
Flammability:	Noncombustible Solid

Lower and upper explosion limit/flammability limit:	no data available
Flash point:	162.3°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	0.004 % at 77° F (NIOSH, 2016)
Partition coefficient n-octanol/water:	log Kow= 5.07
Vapour pressure:	3.15E-05mmHg at 25°C
Density and/or relative density:	1.527g/cm3
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on heating. This produces toxic fumes including hydrogen chloride, phosphorus oxides and sulfur oxides.

Chemical stability

Stable at temp up to 60 deg c, in neutral & acidic media

Possibility of hazardous reactions

RONNEL is non-flammable and non-combustible. Decomposes with heating to evolve toxic and corrosive vapors (hydrogen chloride, phosphorus oxides, sulfur oxides). Incompatible with strong oxidizing agents.

Conditions to avoid

no data available

Incompatible materials

Strong oxidizers.

Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /hydrogen chloride/, oxides of phosphorus and oxides of sulfur.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat (male) oral 1250 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

A4; Not classifiable as a human carcinogen.

Reproductive toxicity

no data available

STOT-single exposure

The substance may cause effects on the nervous system. This may result in convulsions. Cholinesterase inhibition. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

Animal tests show that this substance possibly causes malformations in human babies.

Aspiration hazard

Evaporation at 20°C is negligible; a nuisance-causing 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 Lepomis macrochirus (bluegill) 1300 ug/l (95% confidence limit 1180-1430 ug/l), wt 1.0 g. Static bioassay without aeration, pH 7.2-7.5, water hardness 40-50 mg/l as calcium carbonate and alkalinity of 30-35 mg/l. /Technical material, 95%)

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

Strains of microorganisms, Bacillus subtilis isolated from polluted water samples, completely degraded 8 ppm ronnel solution in less

than 6 days(1). The mean of second order rate constant for microbial transformation of ronnel in natural river and pond waters was estimated to be 1.9X10-11 l/organisms-hr(2). Assuming that the concentration of microorganisms to be constant at 1.8X10+8 organisms/l(2), the half-life for the pseudo first order biotransformation rate can be estimated as 8.4 days(SRC). In a natural water sample, the biodegradation of ronnel showed a lag period of greater than 3 days. When a natural water sample was amended with inorganic nutrients (nitrogen, phosphorus, and traces of iron and magnesium), the lag period decreased by about 45% and of biodegradation half-life decreased to about half the value of an unamended solution(2).

Bioaccumulative potential

In a continuous flow-through system, the equilibrium bioconcentration factor (BCF) for ronnel in the guppy (Poecilia reticulata) was 43650 on the lipid weight basis(2). Based on a regression equation(1) and a log Kow value of 4.98(3), a whole-body BCF value of 3588 is estimated for ronnel(SRC). Therefore, bioconcentration of ronnel in aquatic organisms may be an important fate process(4,SRC).

Mobility in soil

Based on regression equations(3), log Koc values of 3.64 and 4.09 are estimated assuming a water solubility of 1 mg/l at 20 deg C(2) and a log Kow value of 4.98(1), respectively(SRC). These log Koc values indicate that ronnel would have a very low mobility in soil(4). Conversely, ronnel would remain strongly adsorbed to sediment and suspended solids in water(SRC). In sediment from Mississippi River that contained 1.4% organic carbon, 96% of ronnel was found in the sediment-sorbed phase(5).

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: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (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

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not Listed.

(PICCS)

Not Listed.

Vietnam National Chemical Inventory

Not Listed.

IECSC)

Not 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

Temperature of decomposition is unknown in the literature. Depending on the degree of exposure, periodic medical examination is suggested. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home.

properties of the product. We as supplier shall not be held liable for any