

Chemical Safety Data Sheet MSDS / SDS

2-ethylhexyl diphenyl phosphate SDS

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

Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8
Section 9	Section 10	Section 11	Section 12	Section 13	Section 14	Section 15	Section 16

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

Product name: 2-ethylhexyl diphenyl phosphate

CAS: 1241-94-7

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

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SECTION 2: Hazards identification**Classification of the substance or mixture**

Not classified.

GHS label elements, including precautionary statements

Signal word No signal word

Hazard statement(s)

none

Precautionary statement(s)**Prevention**

none

Response

none

Storage

none

Disposal

none

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients**Substance**

Chemical name: 2-ethylhexyl diphenyl phosphate

Common names and
synonyms: 2-ethylhexyl diphenyl phosphate

CAS number: 1241-94-7

EC number: 214-987-2

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms/effects, acute and delayed

ACUTE/CHRONIC HAZARDS: Toxic. Hazardous decomposition products. Experimental carcinogen. (NTP, 1992)

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

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Poisons A and B

SECTION 5: Firefighting measures

Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical

Probably combustible. (NTP, 1992)

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES. Personal precautions, protective equipment and emergency procedures: Avoid breathing vapours, mist or gas.; Environmental precautions: Do not let product enter drains.; Methods and materials for containment and cleaning up: Keep in suitable, closed containers for disposal.

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

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature: 2 - 8 deg C

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

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 tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state: Liquid. Oily.

Colour: Clear.

Odour: no data available

Melting point/freezing point:	-30 °C.
Boiling point or initial boiling point and boiling range:	239 °C. Atm. press.:10 mm Hg.
Flammability:	no data available
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	224 °C.
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	kinematic viscosity (in mm ² /s) = 16.4. Temperature:25.0°C.
Solubility:	Insoluble (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = 5.87. Temperature:25 °C. Remarks:Weighted average of experimtn 1-2-3. Standard deviation = +/- 0.08.;log Pow = 5.92. Temperature:25 °C. Remarks:Average of 4 readings in experiment 1. Standard deviation 0,01.;log Pow = 5.97. Temperature:25 °C. Remarks:Average of 4 readings in experiment 2. Standard deviation 0,07.
Vapour pressure:	0.2 mm Hg. Temperature:150 °C.;1.6 mm Hg. Temperature:200 °C.;18.6 mm Hg. Temperature:251.5 °C.
Density and/or relative density:	1.091 g/cm ³ . Temperature:25 °C.
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Organophosphates, such as 2-ETHYLHEXYL DIPHENYL PHOSPHATE, are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides. Partial oxidation by oxidizing agents may result in the release of toxic phosphorus oxides

Conditions to avoid

no data available

Incompatible materials

Incompatible materials: Strong oxidizing agents

Hazardous decomposition products

When heated to decomposition it emits toxic fumes of PO(x) /phosphorus oxides/.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rabbit oral > 24000 mg/kg bw

Inhalation: LC50 - rat (male) - ca. 2.1 mg/L air.

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

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information**Toxicity**

Toxicity to fish: LC50 - Pimephales promelas - 6.7 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: LC50 - Daphnia magna - 0.38 mg/L - 48 h.

Toxicity to algae: EC50 - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) - 120 µg/L - 72 h.

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: In river die-away biodegradation studies using Mississippi River water, diphenyl-2-ethylhexyl phosphate, at an initial concentration of 1 µg/L, underwent approximately 90% removal in 5 days(1). In semi-continuous activated sludge (SCAS) biodegradation test using an activated sludge seed, diphenyl-2-ethylhexyl phosphate, at a feed rate of 3 mg/day using a weekly addition cycle, underwent 74% biodegradation over a 22 week testing period(1). In river die-away biodegradation studies using Mississippi River water, diphenyl-2-ethylhexyl phosphate underwent 84-99% primary degradation as indicated by chemical analysis and 56-68% ultimate biodegradation as indicated by measuring CO₂ evolution(2). In lake water/sediment microcosm biodegradation studies, diphenyl-2-ethylhexyl phosphate underwent 5-24% ultimate biodegradation (time not stated)(2). The biodegradation half-lives for diphenyl-2-ethylhexyl phosphate in water/sediment system obtained from the Red River, Manitoba, and an eutrophic farm pond were 5.3 days and 4.5 days, respectively at 25 deg C; biodegradation was only slightly slower under anaerobic conditions(3). Diphenyl-2-ethylhexyl phosphate, present at 100 mg/L, reached 1% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(4).

Bioaccumulative potential

BCFs of 433-735 and 194-426 were reported in carp (*Cyprinus carpio*) which were exposed to diphenyl-2-ethylhexyl phosphate at 0.1 and 0.01 mg/L, respectively, over an 8-week period(1). An experimental bioconcentration factor in rainbow trout for diphenyl-2-ethylhexyl phosphate, obtained in outdoor experiments performed in small, artificial ponds 10 hr post-treatment, was 170(2). In rainbow trout fry (*Salmo gairdneri*), BCFs of 1147 and 1481 were reported after respective, 50 and 5 µg/L diphenyl-2-ethylhexyl phosphate exposure in a static system for 24 hours(3). According to a classification scheme(4), these BCFs suggest bioconcentration in aquatic organisms is high to very high(SRC). In outdoor experiments performed in small, artificial ponds, where the initial concentration of diphenyl-2-ethylhexyl phosphate was 50 µg/L, 1% to 2% of the amount applied was found to bioconcentrate in fathead minnows 18 hrs after application which decreased to 0.1% to 0.3% of the amount originally applied after 105 days(5).

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of diphenyl-2-ethylhexyl phosphate can be estimated to be 32,200(SRC). According to a classification scheme(2), this estimated Koc value suggests that diphenyl-2-ethylhexyl phosphate is expected to be immobile in soil. In outdoor experiments performed in small, artificial ponds, 62% of the applied diphenyl-2-ethylhexyl phosphate was found adsorbed to sediment after 1 hr; 24% of the amount originally applied was adsorbed after 360 days(3).

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: No

IMDG: No

IATA: No

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

Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

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/>

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any