

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 Bis(2-ethylhexyl) phosphate

1.2 Other means of identification

Product number CCHM702175
Other names escaid100; dehpaextractant; Bis(2-ethylhexyl)phosphate

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 4, Oral
Skin corrosion, Sub-category 1C
Serious eye damage, Category 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316 Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P317 Get medical help.

Response

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
Bis(2-ethylhexyl) phosphate	Bis(2-ethylhexyl) hydrogen phosphate	298-07-7	206-056-4	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

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Contact with liquid irritates eyes and may cause serious injury; consult an eye specialist. Also causes skin irritation on contact. Ingestion produces irritation similar to that caused by strong vinegar. (USCG, 1999)

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

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if needed. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool . Cover skin burns with dry sterile dressings after decontamination . Poison A and B

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Extinguish with dry chemical, alcohol foam or carbon dioxide; water or foam may cause frothing.

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Irritating phosphorus oxides may be released. (USCG, 1999)

5.3 Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Collect leaking liquid in covered dry plastic containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Collect leaking liquid in covered dry plastic containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Collect leaking liquid in covered dry, plastic containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. 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

Separated from metals.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

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 face shield.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid. Viscous.
Colour	No data.
Odour	ODORLESS
Melting point/freezing point	-50 °C.
Boiling point or initial boiling point and boiling range	Atm. press.:1 013 hPa. Remarks:Decomposes below boiling point at 240 °C.
Flammability	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	181 °C. Atm. press.:1 013 hPa.
Auto-ignition temperature	255 °C. Atm. press.:1 011 hPa.
Decomposition temperature	240°C
pH	no data available
Kinematic viscosity	dynamic viscosity (in mPa s) = 40.99. Temperature:20°C. Remarks:Dynamic viscosity.
Solubility	Soluble in benzene, hexane, and 4-methyl-2-pentanone
Partition coefficient n-octanol/water	log Pow = 6.07. Remarks:Non-dissociated form.
Vapour pressure	0 Pa. Temperature:25 °C. Remarks:Modified Grain method.
Density and/or relative density	0.976. Temperature:20 °C.
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes at 240°C. This produces toxic fumes of phosphorus oxides. Attacks many metals. This produces flammable/explosive gas (hydrogen - see ICSC 0001).

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Slight, when exposed to heat or flame.Organophosphates, such as DI-(2-ETHYLHEXYL)PHOSPHORIC ACID, 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. Mildly corrosive to most metals; may form flammable hydrogen gas (USCG, 1999).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

When heated to decomposition emits toxic fumes of /phosphorus oxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat (male/female) - > 500 - < 5 000 mg/kg bw.
- Inhalation: LC0 - rat - > 1 300 mg/m³ air (nominal).
- Dermal: LD50 - rabbit (male/female) - > 2 000 mg/kg bw.

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

The substance is corrosive to the eyes and skin.

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.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 30 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: LC50 - *Daphnia magna* - 60.7 mg/L - 48 h.
- Toxicity to algae: EC50 - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) - > 100 mg/L - 72 h.
- Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - 890 mg/L - 3 h. Remarks: Respiration rate.

12.2 Persistence and degradability

AEROBIC: Bis(2-ethylhexyl) phosphate, present at 100 mg/L, reached 0-17% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L and the Japanese MITI test(1); therefore, this compound is not expected to biodegrade rapidly(SRC).

12.3 Bioaccumulative potential

BCF values of 1-2.4 and 2.7-6.0 were measured for bis(2-ethylhexyl) phosphate at concentrations of 1 and 0.1 mg/L, respectively, using carp which were exposed over a 6-week period(1). According to a classification scheme(2), these BCF values suggest the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of bis(2-ethylhexyl) phosphate can be estimated to be 1.7X10⁴(SRC). According to a classification scheme(2), this estimated Koc value suggests that bis(2-ethylhexyl) phosphate is expected to be immobile in soil. The estimated pKa of bis(2-ethylhexyl) phosphate is 1.47(3), indicating that this compound will primarily exist in anion form in the environment and anions generally do not adsorb more strongly to organic carbon than their neutral counterparts(4). The sorption of organophosphorus compounds in soil depends on both organic matter and clay content of soil and the sorption increases as the pH of soil decreases(5). In a study on the sorption of bis(2-ethylhexyl) phosphate on kaolinite and amectite, the acidic phosphoric group reacted rapidly and almost irreversibly with the surface cations of the clay mineral structure(5).

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: UN1902 (For reference only, please check.) IMDG: UN1902 (For reference only, please check.) IATA: UN1902 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: DIISOCTYL ACID PHOSPHATE (For reference only, please check.) IMDG: DIISOCTYL ACID PHOSPHATE (For reference only, please check.) IATA: DIISOCTYL ACID PHOSPHATE (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 8 (For reference only, please check.) IMDG: 8 (For reference only, please check.) IATA: 8 (For reference only, please check.)

14.4 Packing group, if applicable

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

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

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
Bis(2-ethylhexyl) hydrogen phosphate	Bis(2-ethylhexyl) hydrogen phosphate	298-07-7	206-056-4
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			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			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



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- 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/>

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

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