

SECTION 1: Identification

1.1 GHS Product identifier

Product name Bis(2-ethylhexyl) peroxydicarbonate

1.2 Other means of identification

Product number -

Other names Bis(2-ethylhexyl) perdicarbonate; Lupersol 223; Trigonox EHP

1.3 Recommended use of the chemical and restrictions on use

Identified uses Oxidizing/reducing agents, Process regulators

Uses advised against no data available

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Organic peroxides, Type C

Skin irritation, Category 2

Skin sensitization, Category 1

Serious eye damage, Category 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H242 Heating may cause a fire

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H318 Causes serious eye damage

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P234 Keep only in original packaging.

P235 Keep cool.

P240 Ground and bond container and receiving equipment.

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

P264 Wash ... thoroughly after handling.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P272 Contaminated work clothing should not be allowed out of the workplace.

Response

P370+P378 In case of fire: Use ... to extinguish.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P317 If skin irritation occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P333+P317 If skin irritation or rash occurs: Get medical help.

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.

Storage

P403 Store in a well-ventilated place.

P410 Protect from sunlight.

P411 Store at temperatures not exceeding 50°C/122°F.

P420 Store separately.

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) peroxydicarbonate	Bis(2-ethylhexyl) peroxydicarbonate	16111-62-9	240-282-4	100%

SECTION 4: First-aid measures

4.1 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.

4.2 Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 148 [Organic Peroxides (Heat and Contamination Sensitive / Temperature Controlled)]: Fire may produce irritating, corrosive and/or toxic gases. Ingestion or contact (skin, eyes) with substance may cause severe injury or burns. Runoff from fire control or dilution water may cause pollution. (ERG, 2016)

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

no data available

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Excerpt from ERG Guide 148 [Organic Peroxides (Heat and Contamination Sensitive / Temperature Controlled)]: The temperature of the substance must be maintained at or below the "Control Temperature" at all times. SMALL FIRE: Water spray or fog is preferred; if water not available use dry chemical, CO₂ or regular foam. LARGE FIRE: Flood fire area with water from a distance. Use water spray or fog; do not use straight streams. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do it without risk. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. BEWARE OF POSSIBLE CONTAINER EXPLOSION. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2016)

5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 148 [Organic Peroxides (Heat and Contamination Sensitive / Temperature Controlled)]: May explode from heat, contamination or loss of temperature control. These materials are particularly sensitive to temperature rises. Above a given "Control Temperature" they decompose violently and catch fire. May ignite combustibles (wood, paper, oil, clothing, etc.). May ignite spontaneously if exposed to air. May be ignited by heat, sparks or flames. May burn rapidly with flare-burning effect. Containers may explode when heated. Runoff may create fire or explosion hazard. (ERG, 2016)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 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.

6.2 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.

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

SECTION 8: Exposure controls/personal protection

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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 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. Refrigerated liquid.
Colour	Colourless.
Odour	no data available
Melting point/freezing point	≥ -68.5 - ≤ -66 °C. Remarks:The test item PEROXAN EPC S showed a melting range, no melting point.
Boiling point or initial boiling point and boiling range	186.2 °C. Atm. press.:101.325 kPa. Remarks:Handbook data, no further details reported.
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	160.2°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	dynamic viscosity (in mPa s) = 40. Temperature:0.0°C. Remarks:Mean value of three measurement.
Solubility	In water: 880 mg/L. Temperature:25 °C. Remarks:PH is not reported (WSKOW v1.42, EPISuite, US EPA).
Partition coefficient n-octanol/water	log Pow = 6.97. Remarks:Log Pow was estimated using EPISuite.
Vapour pressure	> 0 - < 0.001 Pa. Temperature:Ca. 25 °C. Remarks:In the range of 0,00001 to 0,001 Pa; below 0,01 Pa.
Density and/or relative density	0.98 g/ml. Temperature:0 °C.
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No rapid reaction with air. No rapid reaction with water.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

DI-(2-ETHYLHEXYL) PEROXYDICARBONATE decomposes violently or explosively at temperatures 0-10°C. owing to self-accelerating exothermic decomposition; Several explosions were due to shock, heat or friction; amines and certain metals can cause accelerated decomposition [Bretherick, 1979 p. 156], Danger of explosion when dry

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD0 - rat (male/female) - $\geq 2\,000$ mg/kg bw.
- Inhalation: no data available
- Dermal: LD0 - rabbit (male/female) - $\geq 2\,000$ 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

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - *Leuciscus idus melanotus* - 17.1 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 9.4 mg/L - 48 h.
- Toxicity to algae: NOEC - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - ≥ 100 mg/L - 72 h.
- Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - > 20 mg/L - 3 h. Remarks:Respiration rate.

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

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: UN3119 (For reference only, please check.) IMDG: UN3119 (For reference only, please check.) IATA: UN3119 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED (For reference only, please check.) IMDG: ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED (For reference only, please check.) IATA: ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 5.2 (For reference only, please check.) IMDG: 5.2 (For reference only, please check.) IATA: 5.2 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: (For reference only, please check.) IMDG: (For reference only, please check.) IATA: (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) peroxydicarbonate	Bis(2-ethylhexyl) peroxydicarbonate	16111-62-9	240-282-4
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 July 15, 2019

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/>