

Chemical Safety Data Sheet MSDS / SDS

Diisopropyl peroxydicarbonate

Revision Date:2024-12-21 Revision Number:1

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

Product identifier

Product name : Diisopropyl peroxydicarbonate
CBnumber : CB2851684
CAS : 105-64-6
EINECS Number : 203-317-4
Synonyms : Diisopropyl peroxydicarbonate, Isopropyl peroxydicarbonate

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
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone : 400-158-6606

SECTION 2: Hazards identification

Classification of the substance or mixture

Organic peroxides, Type B
Skin irritation, Category 2
Serious eye damage, Category 1

Label elements**Pictogram(s)**

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Signal word : Danger

Hazard statement(s)

H241 Heating may cause a fire or explosion
H315 Causes skin irritation
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.
Chemical Book

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.

Response

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.

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 ...°C/...°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.

Other hazards

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: Diisopropyl peroxydicarbonate
Synonyms	: Diisopropyl peroxydicarbonate, Isopropyl peroxydicarbonate
CAS	: 105-64-6
EC number	: 203-317-4
MF	: C8H14O6
MW	: 206.19

SECTION 4: First aid measures

Description of 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 and effects, both acute and delayed

Inhalation overexposure unlikely, but prolonged exposure may cause lung edema. Contact with eyes may cause irritation. Solutions are severe primary skin irritants. (USCG, 1999)

Indication of any immediate medical attention and special treatment needed

Should be washed promptly from the skin to prevent irritation. Peroxides, org

SECTION 5: Firefighting measures

Extinguishing media

Fight fires from explosion-resistant location. In advanced or massive fires, area should be evacuated. ... it is essential to maintain proper temperature control of refrigeration system as material will decompose @ 53 deg F to release flammable products which must be properly vented. Clean-up & salvage operations should not be attempted until deep-freeze unit has cooled completely. Due caution should be exercised because of possibility of adverse contamination and chemical change after heat exposure.

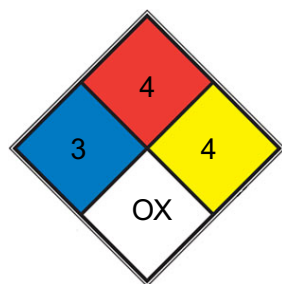
Specific Hazards Arising from the Chemical

Special Hazards of Combustion Products: Flammable and/or toxic gases formed in fires include acetone, isopropyl alcohol, acetaldehyde, and ethane. Behavior in Fire: Undergoes auto-accelerative decomposition and may self-ignite. Confinement may lead to detonation. Fires very difficult to extinguish because air not needed (USCG, 1999)

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

NFPA 704



■ HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

■ FIRE 4 Will rapidly or completely vaporize at normal atmospheric pressure and temperature, or is readily dispersed in air and will burn readily. Includes pyrophoric substances. Flash point below room temperature at 22.8 °C (73 °F). (e.g. acetylene, propane, [hydrogen gas](#))

REACT 4 Readily capable of detonation or explosive decomposition at normal temperatures and pressures (e.g. [nitroglycerin](#), chlorine dioxide, nitrogen triiodide)

SPEC. OX
HAZ.

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

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

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

Should be stored in deep-freeze...unit in well-ventilated, unheated, well-detached, noncombustible building...must be stored @ low temp (below 0 deg f). refrigerated product should be placed in deep-freeze box with free-opening cover in...building. refrigerating unit & all electrical equip should be outside... alarm system.../needed/ to indicate any abnormal temp...within deep-freeze box. protect against physical damage. do not open containers in storage building.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

Exposure 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

Eye/face protection

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

Skin protection

Wear fire/flammable 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

Information on basic physicochemical properties

Physical state	Diisopropyl peroxydicarbonate is a white solid (shipped packed in Dry Ice to stabilize) with a sharp unpleasant odor. Insoluble in water and sinks in water. Used as polymerization catalyst. (USCG, 1999)
Colour	Crystalline solid
Odour	no data available
Melting point/freezing point	12°C
Boiling point or initial boiling point and boiling range	208°C at 760 mmHg
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	79.1°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	Almost insol in water; miscible with aliphatic and aromatic hydrocarbons, esters, ethers and chlorinated hydrocarbons
Partition coefficient n-octanol/water	no data available
Vapour pressure	3.373mmHg at 25°C
Density and/or relative density	1.138 g/cm ³
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

Highly flammable. Insoluble in water. Spontaneous decomposition at room temperature releases flammable toxic products.

Chemical stability

no data available

Possibility of hazardous reactions

REACTIVE, OXIDIZING, COMBUSTIBLE CMPD. ... SHOCK & HEAT SENSITIVE. DANGEROUS WHEN EXPOSED TO HEAT & FLAME. SPONTANEOUS CHEM REACTION, IGNITION...MAY OCCUR IF MIXED WITH READILY OXIDIZABLE, ORG OR FLAMMABLE MATERIALS OR CHEM ACCELERATORS. ISOPROPYL 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]. Spontaneous decomposition possible at room temperature to release flammable and corrosive products (presence of stabilizer reduces this possibility). A strong oxidizing agent. May ignite organic compounds on contact, hence a fire risk. Strongly reduced material such as sulfides, nitrides, and hydrides can react explosively. Reacts at least to produce heat when mixed with members of most chemical classes. These reactions often generate gases (toxic and nontoxic). Subject to decomposition, buildup of heat and even an explosion if contaminated with a catalyst (often a transition metal such as cobalt, iron, manganese, nickel, or vanadium or a salt of a transition metal).

Conditions to avoid

no data available

Incompatible materials

Explodes on contact with amines or potassium iodide. May explode on contact with organic matter.

Hazardous decomposition products

Spontaneous decomposition at room temperature releases flammable and corrosive products.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 2140 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

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: no data available

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

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

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: UN3112 (For reference only, please check.)

IMDG: UN3112 (For reference only, please check.)

IATA: UN3112 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED (For reference only, please check.)

IMDG: ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED (For reference only, please check.)

IATA: ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED (For reference only, please check.)

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.)

Packing group, if applicable

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

IMDG: (For reference only, please check.)

IATA: (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

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not 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>

Disclaimer:

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