Chemical Safety Data Sheet MSDS / SDS

Barium peroxide 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: Barium peroxide

CAS: 1304-29-6

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

Oxidizing solids, Category 2
Acute toxicity - Category 4, Oral

Acute toxicity - Category 4, Inhalation

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H272 May intensify fire; oxidizer
H302 Harmful if swallowed
H332 Harmful if inhaled

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep away from clothing and other combustible materials.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.

Response

P370+P378 In case of fire: Use ... to extinguish.
P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P317 Get medical help.

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:	Barium peroxide
Common names and synonyms:	Barium peroxide
CAS number:	1304-29-6
EC number:	215-128-4
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again.

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 .

Most important symptoms/effects, acute and delayed

Inhalation causes irritation of mucous membranes, throat, and nose. Contact with eyes or skin causes severe burns. Ingestion causes excessive salivation, vomiting, colic, diarrhea, convulsive tremors, slow, hard pulse, and elevated blood pressure; hemorrhages

may occur in the stomach, intestines, and kidneys; muscular paralysis may follow. (USCG, 1999)

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 as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on 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. Barium and Related Compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Fire Extinguishing Media: Use flooding amounts of water. Do not use dry chemical, carbon dioxide or Halon. Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Do not release runoff from fire control methods to sewers or waterways. Water spray may be used to keep fire exposed containers cool.

Specific hazards arising from the chemical

Behavior in Fire: Can increase intensity of fire. (USCG, 1999)

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 covered containers. Then store and dispose of according to local regulations. Do NOT absorb in saw-dust or other combustible absorbents.

Environmental precautions

Personal protection: P2 filter respirator for harmful particles. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Then store and dispose of according to local regulations. Do NOT absorb in saw-dust or other

combustible absorbents.

Methods and materials for containment and cleaning up

Accidental Release Measures. Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

SECTION 7: Handling and storage

Precautions for safe handling

NO contact with combustible substances, reducing agents or acids. 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 combustible substances, reducing agents and food and feedstuffs. Dry.Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage and moisture. Separate from incompatibilities. Separate from combustibles, organic or other readily oxidizable materials. Avoid storage on wood floors. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 0.5 mg/m3, as TWA; A4 (not classifiable as a human carcinogen).MAK: 0.5 mg/m3; peak limitation category: II(8); pregnancy risk group: D.EU-OEL: (as Ba): 0.5 mg/m3 as TWA

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 safety goggles, face shield or eye protection in combination with breathing protection if powder.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Barium peroxide is a grayish-white granular solid. Insoluble in water. Noncombustible, but accelerates the burning of combustible material. Mixture with finely divided combustible material may be explosive. Mixtures with combustible material may be ignited by friction or contact with moisture.
Colour:	White or grayish-white, heavy powder
Odour:	Odorless
Melting point/freezing point:	450°C
Boiling point or initial boiling point and boiling range:	150.2°C at 760mmHg
Flammability:	Not combustible but enhances combustion of other substances.
Lower and upper explosion limit/flammability limit:	no data available

Flash point:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	800°C
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	0.091 g/100 g water at 20 deg C
Partition coefficient n-octanol/water:	no data available
Vapour pressure:	no data available
Density and/or relative density:	4,96 g/cm3
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on heating and on contact with water and acids. This produces oxygen and hydrogen peroxide. This increases fire hazard. The substance is a strong oxidant. It reacts violently with combustible and reducing materials.

Chemical stability

Decomposes slowly in air.

Possibility of hazardous reactions

Not combustible but enhances combustion of other substances. BARIUM PEROXIDE is a strong oxidizing agent. Contact with water

can produce a temperature and oxygen concentration high enough to ignite organic materials [Bretherick's, 5th ed., 1995, p. 94]. Reacts explosively with acetic anhydride due to the formation of acetyl peroxide [Rust, 1948, p. 337]. Ignites when mixed with powdered aluminum, powdered magnesium or calcium-silicon alloys. Wood may ignite with friction from the peroxide. Decomposes when heated to 700°C to produce barium oxide and pure oxygen [Sax, 9th ed., 1996, p. 317]. Forms highly reactive mixtures with fuel-type materials.

Conditions to avoid

no data available

Incompatible materials

The substance is a strong oxidant and reacts violently with combustible and reducing materials.

Hazardous decomposition products

The substance decomposes on heating and on contact with water or acids producing oxygen and hydrogen peroxide, which increases fire hazard.

SECTION 11: Toxicological information

Acute toxicity

Oral: no data available

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. Barium and soluble compounds, as Ba

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the nervous system. Exposure could cause hypokalaemia. This may result in cardiac disorders and muscular disorders.

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 when dispersed.

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: UN1449 (For reference only, please check.)
IMDG: UN1449 (For reference only, please check.)
IATA: UN1449 (For reference only, please check.)

UN Proper Shipping Name

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

Transport hazard class(es)

ADR/RID: 5.1 (For reference only, please check.)
IMDG: 5.1 (For reference only, please check.)
IATA: 5.1 (For reference only, please check.)

Packing group, if applicable

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

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/

Other Information

Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.Rinse contaminated clothing with plenty of water because of fire hazard.