Chemical Safety Data Sheet MSDS / SDS

Peracetic acid 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: Peracetic acid

CAS: 79-21-0

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

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

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SECTION 2: Hazards identification

Classification of the substance or mixture

Flammable liquids, Category 3
Organic peroxides, Type D

Acute toxicity - Category 4, Oral
Acute toxicity - Category 4, Dermal
Skin corrosion, Sub-category 1A
Acute toxicity - Category 4, Inhalation
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H226 Flammable liquid and vapour
H242 Heating may cause a fire
H302 Harmful if swallowed
H312 Harmful in contact with skin
H314 Causes severe skin burns and eye damage
H332 Harmful if inhaled
H400 Very toxic to aquatic life

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P234 Keep only in original packaging.
P235 Keep cool.
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.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P317 Get medical help.
P321 Specific treatment (see ... on this label).
P362+P364 Take off contaminated clothing and wash it before reuse.
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.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391 Collect spillage.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.
P403 Store in a well-ventilated place.
P410 Protect from sunlight.
P411 Store at temperatures not exceeding ...°C/...°F.
P420 Store separately.
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.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Peracetic acid
Common names and synonyms:	Peracetic acid
CAS number:	79-21-0
EC number:	201-186-8
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Refer for medical attention. See Notes.

Following skin contact

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

Most important symptoms/effects, acute and delayed

This is a very toxic compound. The probable human oral lethal dose is 50-500 mg/kg, or between 1 teaspoon and 1 ounce for a 150 pound person. (EPA, 1998)

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. Organic peroxides

SECTION 5: Firefighting measures

Suitable extinguishing media

Use flooding quantities of water. Use water spray to keep fire-exposed containers cool. Fight fire from protected location or maximum possible distance. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Peracetic acid (less than 40%)

Specific hazards arising from the chemical

Decomposes violently at 230F. When heated to decomposition, this compound emits acrid smoke and fumes. Runoff to sewer may create a fire or explosion hazard. Powerful oxidizer. Isolate from other stored material, particularly accelerators, oxidizers, and organic or flammable materials. Avoid shock and heat. Hazardous polymerization may not occur. (EPA, 1998)

Special protective actions for fire-fighters

Use water spray. See Notes. In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Do NOT absorb in saw-dust or other combustible absorbents. Collect leaking and spilled liquid in covered plastic containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Do NOT absorb in saw-dust or other combustible absorbents. Collect leaking and spilled liquid in covered plastic containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Cover with weak reducing agents such as hypo, bisulfites or ferrous salts. Bisulfites or ferrous salts need additional promoter of some 3M sulfuric acid for rapid reaction. Transfer the slurry (or sludge) into a large container of water and neutralize with soda

ash. ...

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. NO contact with flammables or hot surfaces. Above 40.5°C use a closed system, ventilation and explosion-proof electrical equipment. Do NOT expose to friction or shock. 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

Fireproof. Provision to contain effluent from fire extinguishing. Separated from combustible substances and incompatible materials. See Chemical Dangers. Cool. Store only if stabilized. Store in an area without drain or sewer access.Store in a cool, dry, well-ventilated location. Separate from acids, alkalies, organic materials, heavy metals. Normally kept refrigerated outside or detached storage is preferred. Peracetic acid (less than 40%)

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 0.4 ppm as TWA; A4 (not classifiable as a human carcinogen).MAK: carcinogen category: 3B

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 face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Peracetic acid is a colorless liquid with a strong, pungent acrid odor. Used as a bactericide and fungicide, especially in food processing; as a reagent in making caprolactam and glycerol; as an oxidant for preparing epoxy compounds; as a bleaching agent; a sterilizing agent; and as a polymerization catalyst for polyester resins. (EPA, 1998)
Colour:	Colorless liquid
Odour:	Acrid
Melting point/freezing point:	0.1°C
Boiling point or initial boiling point and boiling range:	105°C
Flammability:	Flammable.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	41°C
Auto-ignition temperature:	392° F (USCG, 1999)
Decomposition temperature:	>50°C

pH:	no data available
Kinematic viscosity:	3.280 cP at 78 deg F
Solubility:	Very soluble in ether, sulfuric acid; soluble in ethanol
Partition coefficient n-octanol/water:	log Kow = -1.07 (est)
Vapour pressure:	14.5 mm Hg at 25 deg C
Density and/or relative density:	1.13g/mLat 25°C
Relative vapour density:	(air = 1): 2.6
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes violently on contact with metals. Attacks most metals. This produces highly flammable hydrogen gas and oxygen. This generates fire and explosion hazard. Decomposes on heating and on burning. This produces toxic and corrosive gases. The substance reacts with most organic and inorganic compounds, causing fire and explosion hazard.

Chemical stability

Thermally unstable.

Possibility of hazardous reactions

Flammable liquid.Self-reactive. Peracids should be handled only in small quantities and with extreme care when pure or very concentrated. Organic peracids, such as peracetic acid, are so unstable that they may explode during distillation, even under reduced pressure [NFPA 1991].

Conditions to avoid

no data available

Incompatible materials

Explosive reaction with acetic anhydride; 5-p-chlorophenyl-2,2-dimethyl-3-hexanone. Violent reaction with ether solvents (e.g., tetrahydrofuran; diethyl ether); metal chloride solutions (e.g., calcium chloride; potassium chloride; sodium chloride); olefins; organic matter.

Hazardous decomposition products

May decompose explosively.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 1540 mg/kg

Inhalation: LC50 Rat inhalation 0.3-0.35 mg/L/60 min

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

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. Inhalation of high concentrations may cause lung oedema, but only after initial corrosive effects on the eyes and the upper respiratory tract have become manifest. See Notes.

STOT-repeated exposure

no data available

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: /Oncorhynchus mykiss/ (rainbow trout); Conditions: semi-static; Concentration: 22 mg/L/24 hr

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (water flea); Concentration: 6.6 mg/L/24 hr; Effect: immoblization /Conditions of bioassay not given

Toxicity to algae: EC50; Species: Pseudokirchneriella subcapitata; Concentration: 0.18 mg/L for 120 hr; Effect: growth inhibition /Conditions of bioassay not specified in source examined

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Using a standard BOD dilution technique and a sewage inoculum, a theoretical BOD of >70% was observed for peracetic acid over an unspecified time frame(1).

Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for peracetic acid(SRC), using an estimated log Kow of -1.07(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic

organisms is low(SRC).

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of peracetic acid can be estimated to be 1.5(SRC). According to a classification scheme(2), this estimated Koc value suggests that peracetic acid is expected to have very high mobility in soil. The pKa of peracetic acid is 8.2(3), indicating that this compound will partially exist in anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(4).

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: UN3105 (For reference only, please check.)
IMDG: UN3105 (For reference only, please check.)
IATA: UN3105 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ORGANIC PEROXIDE TYPE D, LIQUID (For reference only, please check.)

IMDG: ORGANIC PEROXIDE TYPE D, LIQUID (For reference only, please check.)
IATA: ORGANIC PEROXIDE TYPE D, LIQUID (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: Yes
IMDG: Yes
IATA: Yes

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

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.Explosive limits are unknown in literature, although the substance is combustible and has a flash point < 61°C.Rinse contaminated clothing with plenty of water because of fire hazard.An added stabilizer or inhibitor can influence the toxicological properties of this substance; consult an expert.Commercial peracetic acid is a mixture of peracetic acid, acetic acid, hydrogen peroxide and water.See ICSCs 0164 and 0363.Above 50°C the substance may undergo a self-accelerating decomposition reaction.