

SAFETY DATA SHEET
Australian version - NOHSC:2011 (2003)

CARO'S ACID

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the substance/preparation

Product name : CARO'S ACID
Chemical Name : Peroxomonosulfuric acid
Synonyms : Persulfuric acid, Peroxymonosulfuric acid
Molecular formula : H₂SO₅
Molecular Weight : 114.08 g/mol

1.2. Use of the Substance/Preparation

Recommended use : - Metal treatment
- Chemical industry
- Wood protection

1.3. Company/Undertaking Identification

Address : SOLVAY INTEROX Pty Ltd
MCPHERSON STREET, 20-22
AUS- 2019 BANKSMEADOW

Telephone : 61293168000

Telefax : 61293166445

1.4. Emergency telephone number

Telephone : **1 800 023 488 (Emergency 24 Hour)**
+44 1865 407333 [CareChem 24] (Australia, New Zealand)
AU: +61-2-93168000 (Product information)

2. HAZARDS IDENTIFICATION

Appearance : liquid
Colour : slightly coloured
Odour : Slightly chlorinated

- Classified as hazardous according to criteria of NOHSC.
- Classified as dangerous goods according to the ADG Code
- Corrosive
- Not combustible.
- Contact with combustible material may cause fire.
- Risk of explosion.
- Risk of violent reaction.
- Hazardous decomposition products



3. COMPOSITION/INFORMATION ON INGREDIENTS

Peroxomonosulfuric acid

CAS-No.	:	7722-86-3
Symbol(s)	:	C, O
R-phrase(s)	:	R 8, R35
Concentration	:	< 40.00 %

Sulfuric acid

CAS-No.	:	7664-93-9
Symbol(s)	:	C
R-phrase(s)	:	R35
Concentration	:	< 50.00 %

Hydrogen peroxide

CAS-No.	:	7722-84-1
Symbol(s)	:	O, C
R-phrase(s)	:	R 8, R34
Concentration	:	< 5.00 %

4. FIRST AID MEASURES

4.1. Inhalation

- In case of accident by inhalation: remove casualty to fresh air and keep at rest.
- Oxygen or artificial respiration if needed.
- Victim to lie down in the recovery position, cover and keep him warm.
- Consult a physician.

4.2. Eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- Immediate medical attention is required.
- Take victim immediately to hospital.

4.3. Skin contact

- Immediately bring the clothed subject under the shower.
- Remove contaminated shoes, socks and clothing; wash the affected skin with running water.
- Keep warm (blanket), provide clean clothing.
- Call a physician immediately.
- Take victim immediately to hospital.

4.4. Ingestion

The following actions are recommended :

- Call a physician immediately.
- Take victim immediately to hospital.

If victim is conscious:

- If swallowed, rinse mouth with water (only if the person is conscious).
- Do not give anything to drink.
- Do NOT induce vomiting.

If victim is unconscious but breathing:

- Artificial respiration and/or oxygen may be necessary.

5. FIRE-FIGHTING MEASURES

5.1. Suitable extinguishing media

- Large quantities of water, water spray.



5.2. Extinguishing media which must not be used for safety reasons

- Do not use other extinguishing methods.

5.3. Special exposure hazards in a fire

- Oxidizer
- Oxygen released on exothermic decomposition may support combustion in case of surrounding fire.
- Contact with combustible material may cause fire.
- Contact with flammables may cause fire or explosions.
- Risk of explosion if heated under confinement.
- Contact with organics may cause fire or violent explosions.

5.4. Special protective equipment for fire-fighters

- Evacuate personnel to safe areas.
- Intervention only by capable personnel who are trained and aware of the hazards of the product.
- In the event of fire, wear self-contained breathing apparatus.
- When intervention in close proximity wear acid resistant over suit.
- Clean contaminated surface thoroughly.

5.5. Other information

- Approach from upwind.
- Evacuate personnel to safe areas.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

- Refer to protective measures listed in sections 7 and 8.
- Isolate the area.
- Keep away from incompatible products
- Prevent further leakage or spillage if safe to do so.
- In case of contact with combustible materials, avoid product drying out, by dilution with water.

6.2. Environmental precautions

- Should not be released into the environment.
- If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods for cleaning up

- If possible, dam large quantities of liquid with sand or earth.
- Dilute with plenty of water.
- Do not add chemical products.
- Treat recovered material as described in the section "Disposal considerations".
- Never return spills in original containers for re-use.

7. HANDLING AND STORAGE

7.1. Handling

- Use only in well-ventilated areas.
- Keep away from heat.
- Keep away from incompatible products
- Prevent all contact with organics.
- Use only equipment and materials which are compatible with the product.
- Before all operations, passivate the piping circuits and vessels according to the procedure recommended by the producer.
- Never return unused material to storage receptacle.
- Ascertain that an adequate supply of water is available in the event of an accident.
- Containers and equipment used to handle the product should be used exclusively for that product.



7.2. Storage

- Storage temperature < -15°C (unstabilized product)
- Storage not recommended. Consult an expert.

7.3. Specific use(s)

- For further information, please contact: Supplier

7.4. Other information

- Warn people about the dangers of the product.
- Refer to protective measures listed in sections 7 and 8.
- Do not confine the product in a circuit, between closed valves, or in a container without a vent.
- In industrial installations, apply the rules for the prevention of major accidents (consult an expert).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Exposure Limit Values

Peroxomonosulfuric acid

- US. ACGIH Threshold Limit Values
Remarks: none established

Sulfuric acid

- US. ACGIH Threshold Limit Values 2005
TWA = 0.2 mg/m³
Remarks: Respirable fraction
- TLV (NOHSC) 11/2004
TWA = 1 mg/m³
- TLV (NOHSC) 11/2004
STEL = 3 mg/m³

Hydrogen peroxide

- US. ACGIH Threshold Limit Values 2005
TWA = 1 ppm
- WEL (UK) 2005
TWA = 1 ppm
TWA = 1.4 mg/m³
- WEL (UK) 2005
STEL = 2 ppm
STEL = 2.8 mg/m³
- TLV (NOHSC) 11/2004
TWA = 1 ppm
TWA = 1.4 mg/m³

8.2. Exposure controls

- Ensure adequate ventilation.
- Apply technical measures to comply with the occupational exposure limits.
- Refer to protective measures listed in sections 7 and 8.

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

- In case of emissions and dust clouds/fog/fumes, face mask with combined type NO-P2 cartridge.
- Self-contained breathing apparatus in medium confinement/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/ national standards.

8.2.1.2. Hand protection

- Wear suitable gloves.



8.2.1.3. Eye protection

- Chemical resistant goggles must be worn.

8.2.1.4. Skin and body protection

- Chemical resistant apron
- Impervious apron/boots if risk of splashing.

8.2.1.5. Hygiene measures

- Shower and eye wash stations.
- Handle in accordance with good industrial hygiene and safety practice.

8.2.2. Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information (appearance, odour)

Appearance	: liquid
Colour	: slightly coloured
Odour	: Slightly chlorinated

9.2. Important Health Safety and Environmental Information

pH	: < 1
Boiling point/range	: <i>Remarks: Not applicable, Decomposition</i>
Flash point	: <i>Remarks: no data available</i>
Flammability (solid, gas)	: <u>Lower explosion limit:</u> <i>Remarks: no data available</i>
Explosive properties	: <i>Remarks: With certain materials (see section 10).</i>
Oxidizing properties	: <i>Remarks: Oxidizer</i>
Relative density / Density	: 1.7 - 1.8
Solubility	: completely miscible : water
Partition coefficient (n-octanol/water)	: <i>Remarks: Not applicable</i>
Viscosity	: 13.3 mPa.s <i>Temperature: 20 °C</i>

9.3. Other data

Decomposition temperature	: ≥ 100 °C <i>Remarks: Self-accelerating decomposition with oxygen release starting from 45°C.</i>
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10. STABILITY AND REACTIVITY

10.1. Stability

- Extremely reactive with products described above: spontaneous ignition or explosion.
- Corrosive in contact with metals



10.2. Conditions to avoid

- To avoid thermal decomposition, do not overheat.
- Heat.
- Keep away from direct sunlight.
- contamination

10.3. Materials to avoid

- React with most of materials, in particular:
- Alcohol
- acetone
- Aromatic compounds
- acids
- bases
- metals
- Salts of metals
- reducing agents
- organic materials
- flammable materials

10.4. Hazardous decomposition products

- oxygen
- Sulfuric acid
- Hydrogen peroxide

11. TOXICOLOGICAL INFORMATION

11.1 Toxicological data

Possible hazards (summary)

- no data available
- Corrosive effect for the skin, the eyes and respiratory tract

11.2. Health effects

Main effects

- The product causes burns of eyes, skin and mucous membranes.
- The seriousness of the lesions and the prognosis of intoxication depend directly on the concentration and duration of exposure.

Inhalation

- Severe respiratory irritant
- Spasmodic cough and difficulty in breathing.
- Risk of chemical pneumonitis and pulmonary (o)edema.
- In case of repeated or prolonged exposure: risk of sore throat, nose bleeds, chronic bronchitis.
- In case of repeated or prolonged exposure: risk of erosion of the tooth enamel.

Eye contact

- Severe eye irritation, watering, redness and swelling of the eyelids.
- burn
- Risk of serious or permanent eye lesions.
- May cause blindness.
- Intoxication hazards by inhalation of the product simultaneously.

Skin contact

- Painful irritation, redness and swelling of the skin.
- Causes severe burns.
- Risk of shock.
- Intoxication hazards by inhalation of the product simultaneously.



Ingestion

- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- salivation
- Risk of throat (o)edema and suffocation.
- Bloating of stomach, belching.
- Nausea, vomiting (bloody) and abdominal cramps.
- Risk of chemical pneumonitis from product inhalation.
- Risk of general symptoms.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Remarks: no data available

Chronic toxicity

- Remarks: no data available

12.2. Mobility

- Remarks: no data available

12.3. Persistence and degradability

Abiotic degradation

- Result: no data available

Biodegradation

- Remarks: no data available

12.4. Bioaccumulative potential

- Result: not applicable

12.5. Other adverse effects

- Study in progress

12.6. Possible hazards (summary)

- no specific data
- Product is quite not persistent in environment due to its rapid reactivity.

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- In accordance with local and national regulations.
- For unused and uncontaminated product, the preferred options include sending to a licensed, permitted: recycler, reclaimer.
- Dilute with plenty of water.

13.2. Packaging treatment

- Rinse the empty containers with plenty of water and treat the effluent in the same way as waste.
- The empty and clean containers are to be reused in conformity with regulations.

14. TRANSPORT INFORMATION

Remarks:

- Not transported (manufactured and used on site)



15. REGULATORY INFORMATION

15.1. Label

- Hazardous components which must be listed on the label: Peroxomonosulfuric acid / Sulfuric acid / Hydrogen peroxide
- Classified as hazardous according to criteria of NOHSC.

Symbol(s)	O C	Oxidising Corrosive
R-phrase(s)	R 8 R35	Contact with combustible material may cause fire. Causes severe burns.
S-phrase(s)	S36/37/39 S26 S45	Wear suitable protective clothing, gloves and eye/face protection. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

15.2. Other information

- The percentage concentration of the solution has to be indicated next to the product name.

16. OTHER INFORMATION

16.1. Administrative information

- Australian version
- General revision
- Distribute new edition to clients

16.2. Text of R phrases mentioned in Section 3

- R 8: Contact with combustible material may cause fire.
- R34: Causes burns.
- R35: Causes severe burns.

The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.

