NATIONAL PEROXIDE LIMITED, KALYAN

MATERIAL SAFETY DATA SHEET for PERACETIC ACID (15%w/w)

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

1.1. Identification of the substance/preparation

Product name	:	PERACETIC ACID - 15 %w/w
Chemical Name	:	Peracetic Acid
Synonyms	:	PAA, Peroxyethanoic acid, Peracetic acid
Molecular formula	:	CH_3-COOOH
Molecular Weight	:	76.05 g/mol

1.2. Use of the Substance/Preparation

Recommended use	:	Pesticide Cleaning Agent Oxidising Agent

1.3. Company/Undertaking Identification

Address	:	National Peroxide Limited, NRC Road, Village Vadavali, P.O. Mohone, Kalyan – 421102, Thane Dist., Maharashtra State, India.
Telephone	:	91 251 2278024, 2278076, 2278000
Email address	:	mktg@naperol.com

1.4. Emergency telephone number

Telephone	:	**+91 9594640688 (Emergency 24 Hour)**

2. HAZARDS IDENTIFICATION

Appearance	:	Liquid
Colour	:	Colorless
Odour	:	Pungent

Main effects	-	Oxidising.
	-	Contact with combustible material may cause fire.
	-	Causes sever burns.
	-	Harmful by inhalation, in contact with skin and if swallowed.

Inhalation

- Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough.
- Breathing difficulties
- Repeated or prolonged exposure: Risk of sore throat, nose bleeds, chronic bronchitis.

Eye contact

- Severe eye irritation
- Redness
- Lachrymation
- Swelling of tissue
- May cause irreversible eye damage.
- Small amounts splashed into eyes can cause irreversible tissue damage and blindness.

Skin contact

- Severe skin irritation
- Redness
- Swelling of tissue
- Causes burns.

Ingestion

- Paleness and cyanosis of the face.
- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- Risk of shock.
- Excessive fluid in the mouth and nose, with risk of suffocation.
- Risk of throat (o)edema and suffocation.
- Bloating of stomach, belching.
- Nausea
- Bloody vomiting
- Cough
- Breathing difficulties
- Risk of chemical pneumonitis and pulmonary (o)edema.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Peracetic acid
CAS-No. : 79-21-0
Concentration : **appr. 15.0 %**

Hydrogen peroxide
CAS-No. : 7722-84-1
Concentration : **appr. 23.0 %**

Acetic acid
CAS-No. : 64-19-7
Concentration : **appr. 17.0 %**

4. FIRST AID MEASURES

4.1. Inhalation

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

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).
- Consult with an ophthalmologist immediately in all cases.
- Take the Victim immediately to hospital.

4.3. Skin contact

- Take off contaminated clothing and shoes immediately.
- Wash off immediately with plenty of water.
- Keep warm and in a quiet place.
- Wash contaminated clothing before reuse.
- Consult a physician.

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 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

- Water
- Water spray

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

- None.

5.3. Special exposure hazards in a fire

- Oxidising
- Oxygen released in thermal decomposition may support combustion
- Contact with combustible material may cause fire.
- Contact with flammables may cause fire or explosions.
- Risk of explosion if heated under confinement.

5.4. Hazardous decomposition products

- Oxygen
- The release of other hazardous decomposition products is possible.

5.5 Special protective equipment for fire-fighters

- Evacuate personnel to safe areas.
- In the event of fire, wear self-contained breathing apparatus.
- When intervention in close proximity wear acid resistant over suit.
- Clean contaminated surface thoroughly.

5.6. Other information

- Keep product and empty container away from heat and sources of ignition.
- Keep containers and surroundings cool with water spray.
- Approach from upwind.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

- Keep people away from and upwind of spill/leak.
- 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 material, keep material wet with plenty of water.

6.2. Environmental precautions

- The product should not be allowed to enter drains, water courses or the soil.
- If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods for cleaning up

- Dam up.
- Soak up with inert absorbent material.
- 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.
- May not get in touch with:

- Organic materials
- 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.
- Use only in an area with adequate water supply
- Containers and equipment used to handle the product should be used exclusively for that product.

7.2. Storage

- Keep in a cool, well-ventilated place.
- Keep away from heat.
- Keep away from Incompatible products.
- Keep away from combustible material.
- Store in a receptacle equipped with a vent.
- Store in original container.
- Keep container closed.
- Keep in a bunded area.
- Regularly check the condition and temperature of the containers.
- Information about special precautions needed for bulk handling is available on request.

7.3. Specific use(s)

- For further information, please contact: Supplier

7.4. Packaging material

- Aluminium 99,5 %
- Stainless steel 304L / 316L
- Approved grades of HDPE.

7.5. Other information

- 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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Exposure Limit Values

Peracetic acid

- WEL (TWA = 1 ppm)

Hydrogen peroxide

- WEL (TWA = 1 ppm, TWA = 1.4 mg/m^3)
- WEL (STEL = 2 ppm, STEL = 2.8 mg/m^3)
- TLV (NOHSC) (TWA = 1 ppm, TWA = 1.4 mg/m^3)

Acetic acid

- WEL (TWA = 10 ppm, TWA = 25 mg/m_3)
- WEL (STEL = 15 ppm, TWA = 38 mg/m_3)
- TLV (NOHSC) (TWA = 10 ppm; TWA = 25 mg/m_3)

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, face mask with type NIOSH approved respiratory protection.
- 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

- Protective gloves - impervious chemical resistant:
- PVC
- Rubber gloves
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

8.2.1.3. Eye protection

- Chemical resistant goggles must be worn.
- If splashes are likely to occur, wear:
- Tightly fitting safety goggles
- Face-shield

8.2.1.4. Skin and body protection

- Protective suit
- If splashes are likely to occur, wear:
- Wear : Apron, Boots - Suitable material : Butyl rubber products

8.2.1.5. Hygiene measures

- Use only in an area equipped with a safety shower.
- Eye wash bottle with pure water
- When using do not eat, drink or smoke.
- 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	:	colorless
Odour	:	pungent

9.2. Important Health Safety and Environmental Information

pH	:	<1
Boiling point/range	:	*Remarks*: not applicable, Thermal decomposition.
Flash point	:	*Remarks*: not applicable, flammable vapours may occur above Self-Accelerating decomposition temperature (SADT).
Flammability	:	*Lower explosion limit*: *Remarks*: not applicable.
Explosive properties	:	*Remarks*: With certain materials (see section 10).
	:	*Remarks*: In case of heating:
Oxidizing properties	:	*Remarks*: yes
Relative density / **Density**	:	1.1
Solubility	:	Water *Remarks*: completely miscible
	:	Polar organic solvents *Remarks*: soluble
	:	Aromatic solvents *Remarks*: slightly soluble
Partition coefficient (in octanol/water)	:	*log Pow*: -1.25

9.3. Other data

Melting Point	**:**	ca. -30 °C (-22°F)

Decomposition Temperature : >= 55 °C (131°F)
Remarks: Self-Accelerating decomposition temperature (SADT)

10. STABILITY AND REACTIVITY

10.1. Stability

- Potential for exothermic hazard
- Stable under recommended storage conditions.

10.2. Conditions to avoid

- Contamination
- To avoid thermal decomposition, do not overheat.
- Keep at temperature not exceeding: 55 °C (131 °F)

10.3. Materials to avoid

- Acids, bases, metals, Salts of metals, reducing agents, organic materials, flammable materials

10.4. Hazardous decomposition products

- Oxygen
- The release of other hazardous decomposition products is possible.

11. TOXICOLOGICAL INFORMATION

Toxicological data

Acute oral toxicity

- LD50, rat, 330 mg/kg (7% solution)

Acute inhalation toxicity

- LC50, 1 h, rat, 590 mg/m3 (Peracetic acid)

Acute dermal irritation / corrosion

- LD50, rabbit, 1,410 mg/kg (10% solution)

Skin irritation

- Rabbit, Corrosive

Eye irritation

- Rabbit, Risk of serious damage to eyes. (4% solution)
- ***Irritation (other route)***
- Inhalation, mouse, Irritating to respiratory system., RD 50 = 22-24 mg/m3 (Peracetic Acid)

Sensitization

- Guinea pig, Did not cause sensitization on laboratory animals.

Chronic toxicity

- Oral, Prolonged exposure, rat, no systemic effect
- Dermal, Repeated exposure, guinea pig, irritant effects

Carcinogenicity

- Animal testing did not show any carcinogenic effects.

Genetic toxicity in vitro

- In vitro tests have shown mutagenic effects.

Genetic toxicity in vivo

- Animal testing did not show any mutagenic effects.

Possible hazards (summary)

- Corrosive effects

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Fishes, Salmo gairdneri, LC_{50}, 96 h, 13 mg/l
  Remarks: fresh water
- Fishes, Pimephales platessa, NOEC, 56 mg/l
- Crustaceans, Daphnia magna, EC50, 48 h, 3.3 mg/l
  Remarks: fresh water
- Crustaceans, Daphnia magna, NOEC, 1 mg/l
- Crustaceans, Crangon crangon, EC50, 96 h, 126.8 mg/l (12 % solution)
  Remarks: salt water
- Crustaceans, Crangon crangon, NOEC, 56 mg/l

Chronic toxicity

- Fishes, various species, LC50
  Remarks: no data available
- NOEC
  Remarks: no data available
- Algae, various species, EC50, 72 - 96 h, 0.7 - 16 mg/l

12.2. Mobility

- Air, Volatility
  Remarks: not significant
- Water
  Remarks: Solubility, Mobility.
- Soil/sediments, adsorption
  Remarks: non-significant

12.3. Persistence and degradability

Abiotic degradation

- Air
  Result: The product can be degraded by abiotic (e.g. chemical or photolytic) processes
- Water, t 1/2 (Hydrolysis) ca. 120 h
  Result: Chemical degradation
- Soil 99 %, < 0.5 h (1 % solution)
  Result: Chemical degradation

Biodegradation

- aerobic, Tested according to: Closed Bottle test, 28 d
  Remarks: non-biodegradable.
- aerobic, Tested according to: ready biodegradability/MITI, from 2 mg/l, > 70 %, 28 d
  Remarks: Readily biodegradable.
- Anaerobic.
  Remarks: no data available
- Effects on waste water treatment plants, 90 mg/l
  Remarks: inhibitory action
- Effects on waste water treatment plants
  Remarks: BOD increase of treated effluent by acetic acid formation

12.4. Bioaccumulative potential

- Log Pow -1.25
  Result: Does not bioaccumulate.

12.5. Other adverse effects

- no data available

12.6. Possible hazards (summary)

- Toxic to aquatic organisms.
- Nevertheless, hazard for the environment is limited due to product properties:
- Inherently biodegradable.

- Does not bioaccumulate.

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- In accordance with local and national regulations.
- Limited quantity
- Dilute with plenty of water.
- Flush into sewer with plenty of water.
- Large quantities:
- Contact manufacturer.

13.2. Packaging treatment

- Empty containers.
- Clean container with water.
- Dispose of rinse water in accordance with local and national regulations.
- Do not rinse the dedicated containers.
- The empty and clean containers are to be reused in conformity with regulations.

14. TRANSPORT INFORMATION

UN-No	**3109**

IATA-DGR

Class	5.2
Sub-risks	CORROSIVE
Packing group	II
ICAO-Labels	5.2 + 8
Proper shipping name:	ORGANIC PEROXIDE TYPE F LIQUID (PEROXYACETIC ACID, TYPE F STABILISED)

IMDG

Class	5.2
Sub-risks	Corrosive
Packing group	II
IMO-Labels	5.2 + 8
Proper shipping name:	ORGANIC PEROXIDE TYPE F LIQUID (PEROXYACETIC ACID, TYPE F STABILISED)

15. REGULATORY INFORMATION

15.1. Label

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

Symbol(s)	C	Corrosive
	O	Oxidising
R-phrase(s)	R8	Contact with combustible material may cause fire.
	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
	R35	Causes sever burns.
S-phrase(s)	S 1/2	Keep locked up and out of the reach of children.
	S 3/7	Keep container tightly closed in a cool place.
	S14	Keep away from combustible material: Acids, Reducing agents, Salts of metals.
	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	S45	In case of accident or if you feel unwell, seek

Medical advice immediately (show the label wherever possible).

15.2. Other information

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

15.3. Inventory Information

- One or more components not listed on inventory.
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16. OTHER INFORMATION

16.1. Ratings

NEPA (National Fire Protection Association)

Health = 3 Flammability = 1 Instability = 2 Special =OX

HMIS (Hazardous Material Information System)

Health = 3 Fire = 1 Reactivity = 2 PPE: Supplied by User; dependent on local conditions

16.2. Text of phrases mentioned

- WEL	WORKPLACE EXPOSURE LIMIT.
- TWA	TIME WEIGHTED AVERAGE.
- STEL	SHORT TERM EXPOSURE LIMIT.
- NOHSC	NATIONAL OCCUPATIONAL HEALTH AND SAFETY COMMISSION

16.3. Revisions

- Rev. No. 10 / 01/04/2012 – IMS First Issue
- Rev. No. 11 / 01/07/2021 – Telephone nos.

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.