

# SAFETY DATA SHEET for HYDROGEN PEROXIDE - (35%w/w)

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

### 1.1. Identification of the substance/preparation

Product name : HYDROGEN PEROXIDE-50 %w/w  
Chemical Name : Hydrogen Peroxide  
Synonyms : Hydroperoxide, Hydrogen dioxide  
Molecular formula : H<sub>2</sub>O<sub>2</sub>  
Molecular Weight : 34 g/mol

### 1.2. Use of the Substance/Preparation

Recommended use : Versatile chemical used in various industries for bleaching, chemical synthesis, environmental control / effluent treatment, sterilizations, Electronic industry etc.

### 1.3. Manufacturers / Suppliers Details

Name : National Peroxide Limited,  
Address : NRC Road, Village Vadavali,  
P.O. Mohone, Kalyan – 421102,  
Thane Dist., Maharashtra State, India.  
Telephone : +91 251 2270094, 2271375, 2270672  
Telefax : +91 251 2270671.  
Email address : mktg@naperol.com

### 1.4. Emergency telephone number

Telephone : +91 251 3255648 (Emergency 24 Hour)

## 2. HAZARDS IDENTIFICATION

### 2.1. GHS-Classification (EC n°1272/2008)

This mixture is classified as Hazardous.

#### Physical Hazard:

#### Health Hazard:

Hazard Class	Hazard category	H Phrases	H- Statement
Skin Irritation	Category 2	H315	Causes Skin irritation
Acute Toxicity- Oral	Category 4	H302	Harmful if swallowed
Serious eye damage	Category 1	H318	Causes serious eye damage
Specific Target Organ Toxicity (STOT) – Single Exposure	Category 3	H335	May cause respiratory irritation.

#### Environmental Hazard:

Hazard Class	Hazard category	H Phrases	H- Statement
Acute Aquatic Toxicity	Category 2	H401	Toxic to aquatic life

### 2.2. GHS Label elements, including precautionary statements

#### Name(s) on label:

Hazardous components : Hydrogen Peroxide (35.0%w/w min)



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## Signal Word

- Danger

## Hazard Symbols



## Hazard Statements

- H315 Causes skin irritation.
- H302 Harmful if swallowed.
- H318 Causes serious eye damage.
- H335 May cause respiratory irritation.
- H401 Toxic to aquatic life.

## Precautionary statements

### Prevention

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoor or in well-ventilated area.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

### Response

- P301+P312+P330+P331 IF SWALLOWED: Call a POISON CENTRE or doctor/Physician. Rinse mouth. Do NOT induce vomiting.
- P302+P353 +P361 IF ON SKIN: Rinse skin with water/shower. Remove/take off immediately all contaminated clothing.
- P304+P340+P312 IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.
- P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue to rinsing. Immediately call a POISON CENTRE or doctor/Physician.
- P332+P313 If skin irritation occurs: Get medical advice/ attention.

### Storage

- P403+P233 Store in a well-ventilated place. Keep container tightly closed.

### Disposal

- P501 Dispose of content by diluting with profuse water and in accordance with local/regional/national regulations.

## 2.3. Other hazards which do not result in Classification or are not covered by the GHS

- H412 Harmful to aquatic life with long lasting effects.



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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance : Not Applicable. This product is a mixture.

3.2 Mixture : Hydrogen Peroxide, aqueous solution

CAS-No. : 7722-84-1

Concentration : 35.0 % w/w min.

### 3.2. Hazardous Components:

Substance Name	Hazard class	Hazard Category	Route of Exposure	H Phrases
Hydrogen Peroxide	Oxidising liquid	Category 1		H271
	Acute Toxicity	Category 4	Inhalation	H332
	Acute Toxicity	Category 4	Oral	H302
	Skin corrosion	Category 1		H314
	Specific target organ toxicity – Single exposure	Category 3	Inhalation	H335
	Acute aquatic toxicity	Category 2		H401
	Chronic aquatic toxicity	Category 3		H412

## 4. FIRST AID MEASURES

### 4.1. Description of necessary measures for different routes of exposure

#### On Inhalation

- Remove to fresh air.
- If symptoms persist, call a physician.

#### In case of 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.

#### In case of Skin contact

- Remove and wash contaminated clothing before re-use.
- Wash off with plenty of water.
- If symptom persist, call a physician.

#### On Ingestion

- 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.

### 4.2. Most important symptoms/effects, acute and delayed

#### Inhalation

- Corrosive to respiratory system
- Symptoms: Breathing difficulties, Cough, pulmonary oedema, nausea, Vomiting
- Prolonged Exposure: Nose bleeding, chronic bronchitis

#### Skin contact

- Corrosive
- Causes severe burns



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- Symptoms: redness, swelling of tissue

## Eye contact

- Corrosive
- Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
- Symptoms: Redness, lachrymation, swelling of tissue

## Ingestion

- If ingested, severe burns to mouth and throat, as well as a danger of perforation of the oesophagus and the stomach
- Symptoms: Nausea, Abdominal pain, Blood vomiting, suffocation, cough, severe shortness of breath
- Risk of: Respiratory disorder

### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

- Take victim immediately to hospital
- Consult with an ophthalmologist immediately in all cases
- If swallowed
- Avoid gastric lavage (risk of perforation)
- Keep under medical supervision for at least 48 hours.

## 5. FIRE-FIGHTING MEASURES

### 5.1. Suitable extinguishing media

- Water
- Water spray

### 5.2. Unsuitable Extinguishing media

- None.

### 5.3. Specific hazards arising from the chemical

- 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. 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.

### 5.5. 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.
- HAZCHEM Code: 2P

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

#### Advice to non-emergency personnel

- Prevent further leakage or spillage if safe to do so.
- Keep away from Incompatible products.

#### Advice to emergency personnel

- Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.
- Use personal protective equipment.
- In case of contact with combustible material, keep material wet with plenty of water.



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- Keep wetted with water.

## **6.2. Environmental precautions**

- Limited quantity  
Flush into sewer with plenty of water.
- Large quantities:  
If the product contaminates rivers and lakes or drains inform respective authorities.

## **6.3. Methods and materials for containment and cleaning up**

- Dam up.
- Soak up with inert absorbent material.
- Dilute with plenty of water.
- Do not add chemical products.
- Keep in suitable, closed and properly labelled containers for disposal.
- 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. Precaution for safe 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.
- Do not confine the product in a circuit, between closed valves, or in a container without a vent.

### **7.2. Condition for safe Storage, including any incompatibilities**

- 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 banded area.
- Regularly check the condition and temperature of the containers.
- Information about special precautions needed for bulk handling is available on request.

### **7.3. Packaging material**

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

### **7.4. Specific use(s)**

- For further information, please contact: Supplier



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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control Parameters

#### Exposure Limit Values

##### Hydrogen peroxide

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

### 8.2. Appropriate Engineering Controls

- Ensure adequate ventilation.
- Apply technical measures to comply with the occupational exposure limits.

### 8.3 Individual Protection Measures

#### 8.3.1. Respiratory protection

- In case of emissions, face mask with type NO-P3 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.

#### 8.3.2. Hand protection

- Protective gloves - impervious chemical resistant:
- 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).
- Suitable material: PVC, Natural Rubber, Butyl-rubber, Nitrile Rubber

#### 8.3.3. Eye protection

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

#### 8.3.4. Skin and body protection

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

#### 8.3.5. Hygiene measures

- Ensure that Safety showers are close to the workstation location.
- Eye wash bottle with pure water
- When using do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.

### 8.4. 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



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## 9.2. Important Health Safety and Environmental Information

<b>pH</b>	:	2.0 – 3.0 <i>Remarks: Apparent pH</i>
<b>Boiling point/range</b>	:	107.4 °C (H <sub>2</sub> O <sub>2</sub> 35 %)
<b>Flash point</b>	:	<i>Remarks: The product is not flammable.</i>
<b>Melting point / freezing Point</b>	:	-33 °C (H <sub>2</sub> O <sub>2</sub> 35 %).
<b>Flammability (solid, gas)</b>	:	<i>Lower explosion limit.</i> <i>Remarks: The product is not flammable.</i>
<b>Explosive properties</b>	:	Not explosive <i>Remarks: With certain materials (see section 10).</i>
<b>Oxidizing properties</b>	:	<i>Remarks: yes</i>
<b>Vapour pressure</b>	:	0.65 mbar <i>Temperature: 30 °C (H<sub>2</sub>O<sub>2</sub> 35 %)</i> 22 mbar <i>Temperature: 20 °C</i> <i>Remarks: Total pressure (H<sub>2</sub>O<sub>2</sub> + H<sub>2</sub>O) (H<sub>2</sub>O<sub>2</sub> 35 %)</i> 92 mbar <i>Temperature: 50 °C</i> <i>Remarks: Total pressure (H<sub>2</sub>O<sub>2</sub> + H<sub>2</sub>O) (H<sub>2</sub>O<sub>2</sub> 35 %)</i>
<b>Relative density</b>	:	1.132 (H <sub>2</sub> O <sub>2</sub> 35 %)
<b>Bulk density</b>	:	not applicable
<b>Solubility</b>	:	Soluble Water Polar organic solvents
<b>Partition coefficient (in octanol/water)</b>	:	<i>log Pow: -1.1</i>
<b>Auto-ignition Temperature</b>	:	not applicable
<b>Decomposition Temperature</b>	:	>= 60 °C <i>Remarks: Self-Accelerating decomposition temperature (SADT)</i> < 60 °C <i>Remarks: Slow decomposition</i>
<b>Viscosity</b>	:	1.1 mPa.s <i>Temperature: 20 °C (H<sub>2</sub>O<sub>2</sub> 35 %)</i>
<b>Vapour density</b>	:	1 (H <sub>2</sub> O <sub>2</sub> 50 %)

**9.3. Other information**

<b>Surface tension</b>	:	74.6 mN/m <i>Temperature: 20 °C (H<sub>2</sub>O<sub>2</sub> 35 %)</i>
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## 10. STABILITY AND REACTIVITY

### 10.1. Reactivity

- Potential for exothermic hazard
- Decomposes on heating.

### 10.2. Chemical Stability



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- Stable under recommended storage conditions.

## 10.3. Possibility of hazardous reactions

- Contact with combustible material may cause fire.
- Contact with flammable may cause fire or explosions.
- Risk of explosion if heated under confinement.
- Fire or intense heat may cause violent rupture

## 10.4. Conditions to avoid

- Contamination
- To avoid thermal decomposition, do not overheat.

## 10.5. Incompatible materials

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

## 10.6. Hazardous decomposition products

- Oxygen, The release of other hazardous decomposition products is possible if contaminated with incompatible material.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Toxicological data

#### **Acute oral toxicity**

- LD<sub>50</sub>, rat, 1,232 mg/kgbw (H<sub>2</sub>O<sub>2</sub> 35 %)

#### **Acute inhalation toxicity**

- LC<sub>50</sub>, 4 h, rat, 2.000 mg/m<sup>3</sup> (Hydrogen peroxide)

#### **Acute dermal toxicity**

- LD<sub>50</sub>, rabbit, > 2.000 mg/kg corrosive (H<sub>2</sub>O<sub>2</sub> 35 %)

#### **Skin corrosion/irritation**

- Rabbit, Skin irritation (H<sub>2</sub>O<sub>2</sub> 35 %)

#### **Serious eye damage / Eye irritation**

- Rabbit, Risk of serious damage to eyes. (H<sub>2</sub>O<sub>2</sub> 10 %)

#### **Sensitization**

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

#### **Chronic toxicity**

- Oral, Prolonged exposure, Various species, Target Organs: Gastrointestinal tract, observed effect
- Inhalation, Repeated exposure, dog, LOEL: 14.6 mg/m<sup>3</sup>, irritant effects

#### **Carcinogenicity**

- Oral, Prolonged exposure, mouse, Target Organs: duodenum, carcinogenic effects
- Dermal, Prolonged exposure, mouse, Animal testing did not show any carcinogenic effects.

#### **Toxicity for reproduction**

- Substance is totally biotransformed (metabolised).
- Study scientifically unjustified.

#### **Specific target Organ toxicity – Single exposure**

- Inhalation, mice, 665 mg/m<sup>3</sup>,
- Remark: RD 50. Irritating to respiratory system.

#### **Repeated dose toxicity**

- Oral, 90-day, mouse,  
Target Organs: Gastrointestinal tract, 300ppm, LOAEL (Pure Substance)
- Oral, 90-day, mouse, 100 ppm, NOAEL (Pure Substance)
- Inhalation, 28-day, rat,  
Target Organs: Respiratory system, 10 ppm, LOAEL, vapour (Pure Substance)





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- Inhalation, 28-day, 2 ppm, NOAEL, vapour (Pure substance)

## Other information

- No data available.

## 12. ECOLOGICAL INFORMATION

### 12.1. Ecotoxicity

#### Acute toxicity

- Fishes, Pimephales promelas, LC<sub>50</sub>, 96 h, 16.4 mg/l
- Fishes, Pimephales promelas, NOEC, 96 h, 5 mg/l
- Crustaceans, EC<sub>50</sub>, 48 h, 2.4 mg/l
- Crustaceans, NOEC, 48 h, 1 mg/l

#### Chronic toxicity

- Molluscs, NOEC, 56 Days, 2 mg/l
- Algae, Chlorella vulgaris, EC<sub>50</sub>, growth rate, 72 h, 4.3 mg/l
- Algae, Chlorella vulgaris, NOEC, 72 h, 0.1 mg/l

### 12.2. Persistence and degradability

#### Abiotic degradation

- Air, indirect photo-oxidation, t<sub>1/2</sub> from 16 - 20 h  
Conditions: sensitizer: OH radicals
- water, redox reaction, t<sub>1/2</sub> from 25 - 100 h  
Conditions: mineral and enzymatic catalysis, fresh water
- water, redox reaction, t<sub>1/2</sub> from 50 - 70 h  
Conditions: mineral and enzymatic catalysis, salt water
- Soil, redox reaction, t<sub>1/2</sub> from 0.05 - 15 h  
Conditions: mineral catalysis

#### Biodegradation

- aerobic, t<sub>1/2</sub> < 2 min  
Conditions: biological treatment sludge. Remarks: Readily biodegradable.
- aerobic, t<sub>1/2</sub> from 0.3 - 5 d  
Conditions: fresh water. Remarks: Readily biodegradable.
- Anaerobic.  
Conditions: Soil/Sediments. Remarks: not applicable
- aerobic, t<sub>1/2</sub> < 12 hrs  
Conditions: soil. Remarks: Readily biodegradable.

### 12.3. Bioaccumulative potential

- Bioaccumulative potential  
Result: Does not bioaccumulate.

### 12.4. Mobility in Soil

- Air, Volatility, Henry's law constant (H) = 0.75 Pa.m<sup>3</sup>/mol  
Conditions: 20 °C Remarks: not significant
- water  
Considerable solubility and mobility  
Remarks: The product evaporates slowly.
- Soil/sediments  
Remarks: non-significant evaporation and adsorption

### 12.5. Other adverse effects

- no data available



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## 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.  
In accordance with local and national regulations.

### 13.2. Contaminated Packaging

- 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

### IATA

UN number	UN 2014
Proper shipping name:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Transport Hazard Class	5.1
Sub-risks Hazard Class	8
Packing group	II
Labels	5.1 – Oxidizing substance 8 - Corrosive

- IATA: forbidden over 40 %

### IMDG

UN number	UN 2014
Proper shipping name:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Transport Hazard Class	5.1
Sub-risks Hazard Class	8
Packing group	II
Marine Pollutant	No
Labels	5.1 – Oxidizing substance 8 - Corrosive
EmS Number	F – H, S – Q

## 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



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R-phrases(s)	R8 R34	Contact with combustible material may cause fire. Causes burns.
S-phrases(s)	S 1/2 S 3 S28 S36/39 S45	Keep locked up and out of the reach of children. Keep in a cool place. After contact with skin, wash immediately with Plenty of water. Wear suitable protective clothing and eye/face Protection. 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. Text of phrases mentioned

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

### 16.2. NFPA (National Fire Protection Association) - Classification

Health	3 serious.
Flammability	0 minimal.
Instability or Reactivity	1 slight.
Special Notices	OX Oxidiser.

### 16.3. Revisions

- Rev. No. 00/ 28/06/2010 – First Issue
- Rev. No. 10/ 01/04/2012 – IMS First Issue
- Rev. No. 11/ 01/10/2016 – Product SDS evaluated under GHS format

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.

