



# Hydrogen Peroxide 50%

## Material Safety Data Sheet

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Identification of the substance or mixture

<b>Product Name</b>	: Hydrogen Peroxide 50%
<b>Chemical Name</b>	: Hydrogen Peroxide Aqueous Solution
<b>Synonyms</b>	: Hydrogen dioxide, hydroperoxide, peroxide
<b>Chemical Formula</b>	: H <sub>2</sub> O <sub>2</sub>
<b>Molecular Weight</b>	: 34 g
<b>CAS No</b>	: 7722-84-1
<b>EINECS No</b>	: 231-765-0

#### 1.2. Use of the Substance/Mixture

<b>Recommended use</b>	: - Bleaching agent - Cleaning agent - Colouring agent - Disinfectant - Cosmetics - Chemical industry - Electronic industry - Metal treatment - Odour agents - Oxidising Agents - Textile industry - Water treatment - Pulp and paper
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#### 1.3. Company/Undertaking Identification

<b>Company Name</b>	: Hidrojen Peroksit Sanayi ve Tic. A.Ş.
<b>Address</b>	: 600 Evler Mah. Atatürk cad. No:70 Bandırma/Balıkesir TÜRKİYE
<b>Telephone</b>	: +90 266 721 03 12
<b>Fax</b>	: +90 266 721 03 11

### 2. HAZARDS IDENTIFICATION

<b>Appearance</b>	: liquid
<b>Colour</b>	: colourless
<b>Odour</b>	: pungent

- Classified as hazardous according to criteria of NOHSC.
- Classified as dangerous goods according to the ADG Code
- Oxidizing properties
- Harmful if swallowed.
- Irritating to respiratory system and skin.
- Risk of serious damage to eyes



# Hydrogen Peroxide 50%

## Material Safety Data Sheet

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Material	CAS No	%Concentration	EC No.	EC Class
Hydrogen Peroxide	7722-84-1	50	231-765-0	O, C, Xn; R5- R8-R20/22-R35
Water	7732-18-5	50	231-791-2	Not classified

### 4. FIRST AID MEASURES

#### 4.1. Inhalation

- Remove to fresh air.
- If symptoms persist, call 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).
- Consult with an ophthalmologist immediately in all cases.

#### 4.3. Skin contact

- Remove contaminated shoes, socks and clothing, under the shower if necessary; wash the affected skin with running water.
- Keep warm (blanket), provide clean clothing.
- Consult a physician.

#### 4.4. Ingestion

- Rinse mouth with water.
- Do NOT induce vomiting.
- Oxygen or artificial respiration if needed.
- If symptoms persist, call a physician or Poison Control Centre immediately.

### 5. FIRE-FIGHTING MEASURES

#### 5.1. Suitable extinguishing media

- Water
- Water spray

#### 5.2. Extinguishing media which shall not be used for safety reasons

- None.

#### 5.3. Special exposure hazards in a fire

- 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.



# Hydrogen Peroxide 50%

## Material Safety Data Sheet

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- Risk of explosion if heated under confinement.

### 5.4. Special protective equipment for fire-fighters

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.
- Wear chemical resistant oversuit
- Cool containers / tanks with water spray.

### 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

- Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.
- Use personal protective equipment.
- Drying of this product on clothing or combustible materials may cause fire.
- Keep wetted with water.
- Keep away from Incompatible products.
- Prevent further leakage or spillage if safe to do so.

### 6.2. Environmental precautions

- Should not be released into the environment.
- 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 for cleaning up

- Dam up.
  - Do not mix waste streams during collection.
  - Keep in properly labelled containers.
  - Keep in suitable, closed containers for disposal.
  - 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.
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# Hydrogen Peroxide 50%

## Material Safety Data Sheet

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### 7. HANDLING AND STORAGE

#### 7.1. Handling

- Use only in well-ventilated areas.
- Before all operations, passivate the piping circuits and vessels according to the procedure recommended by the producer.
- Use only clean and dry utensils.
- Never return unused material to storage receptacle.
- May not get in touch with:
  - Organic materials
  - Keep away from Incompatible products.
  - Keep away from heat.
  - Keep at temperature not exceeding 60 °C.

#### 7.2. Storage

- Keep in a cool, well-ventilated place.
- Keep away from heat.
- Keep away from incompatible products
- Keep away from combustible material.
- Keep in container fitted with safety valve or vent.
- Keep in original packaging, 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.
- Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- Electrical equipment should be protected to the appropriate standard.

#### 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

- 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.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Exposure Limit Values

##### Hydrogen peroxide

- US. ACGIH Threshold Limit Values 2009  
time weighted average = 1 ppm
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# Hydrogen Peroxide 50%

## Material Safety Data Sheet

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- Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment) 08 2005  
time weighted average = 1 ppm  
time weighted average = 1.4 mg/m<sup>3</sup>
  - Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment) 08 2005  
Remarks: Listed

### 8.2. Exposure controls

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

#### 8.2.1. Occupational exposure controls

##### 8.2.1.1. Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Recommended Filter type: NO -P3

##### 8.2.1.2. Hand protection

- Impervious gloves
- Suitable material : PVC, Natural Rubber, butyl-rubber, Nitrile rubber
- 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

- Chemical resistant apron
- If splashes are likely to occur, wear:
  - Boots
  - Suitable material
    - PVC
    - Natural Rubber

##### 8.2.1.5. Hygiene measures

- Ensure that eyewash stations and safety showers are close to the workstation location.
  - Take off contaminated clothing and shoes immediately.
  - Wash contaminated clothing before re-use.
  - When using do not eat, drink or smoke.
  - Wash hands before breaks and at the end of workday.
  - Handle in accordance with good industrial hygiene and safety practice.
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# Hydrogen Peroxide 50%

## Material Safety Data Sheet

### 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** : colourless  
**Odour** : pungent

### 9.2. Important health safety and environmental information

**pH** : 1 - 4

*Remarks:* Apparent pH

**Boiling point/boiling range** : 115 °C (H<sub>2</sub>O<sub>2</sub> 50 %)

**Flash point** : *Remarks:* not applicable.

**Flammability** : *Remarks:* The product is not flammable.

**Explosive properties** : *Explosion danger:*

*Remarks:* With certain materials (see section 10).

*Remarks:* In case of heating:

**Oxidizing properties** : *Remarks:* Oxidizer

**Vapour pressure** : 12 mbar (H<sub>2</sub>O<sub>2</sub> 50 %)

*Remarks:* Total pressure (H<sub>2</sub>O<sub>2</sub> + H<sub>2</sub>O)

*Temperature:* 20 °C

: 72 mbar (H<sub>2</sub>O<sub>2</sub> 50 %)

*Remarks:* Total pressure (H<sub>2</sub>O<sub>2</sub> + H<sub>2</sub>O)

*Temperature:* 50 °C

: 1 mbar (H<sub>2</sub>O<sub>2</sub> 50 %)

*Remarks:* Partial pressure (H<sub>2</sub>O<sub>2</sub>)

*Temperature:* 30 °C

**Relative density / Density** : 1.15 (H<sub>2</sub>O<sub>2</sub> 40 %)

: 1.20 (H<sub>2</sub>O<sub>2</sub> 50 %)

**Solubility** : Soluble in:

: Water

: Polar organic solvents

**Partition coefficient:** : *log Pow.*

**n-octanol/water** : -1.1

**Viscosity** : Viscosity

1.2 mPa.s (H<sub>2</sub>O<sub>2</sub> 50 %)

1.15 mPa.s (H<sub>2</sub>O<sub>2</sub> 40 %)

**Vapour density** : 1 (H<sub>2</sub>O<sub>2</sub> 50 %)

### 9.3. Other data

**Freezing point:** : -41 °C (H<sub>2</sub>O<sub>2</sub> 40 % )

-52°C (H<sub>2</sub>O<sub>2</sub> 50 % )

**Auto-flammability** : *Remarks:* The product is not flammable.

**Surface tension** : 75.6 mN/m (H<sub>2</sub>O<sub>2</sub> 50 %)

*Remarks:* 20 °C



# Hydrogen Peroxide 50%

## Material Safety Data Sheet

**Decomposition temperature:**  $\geq 60$  °C

*Remarks:* Self-Accelerating decomposition temperature (SADT)

:  $< 60$  °C

*Remarks:* Slow decomposition

## 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.

### 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

### 11.1 Toxicological data

#### **Acute oral toxicity**

- LD50, rat, 1,232 mg/kg (H2O2 35 %)

#### **Acute inhalation toxicity**

- LC50, 4 h, rat, 2,000 mg/m<sup>3</sup> (Hydrogen peroxide)

#### **Acute dermal toxicity**

- LD50, rabbit,  $> 2,000$  mg/kg (H2O2 35 %)

#### **Skin irritation**

- rabbit, irritant (skin) (H2O2  $< 50$  %)
- rabbit, corrosive effects, 1 h (H2O2  $\geq 50$  %)

#### **Eye irritation**

- rabbit, Risk of serious damage to eyes. (H2O2 35 %)

#### **Irritation (other route)**

- mouse, Respiratory irritation (RD50), 665 mg/m<sup>3</sup>, (Hydrogen peroxide)

#### **Sensitisation**

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

#### **Chronic toxicity**

- Oral, Prolonged exposure, rat/mouse, Target Organs: gastro-intestinal system, observed effect
- Inhalation, Repeated exposure, dog, Lowest observable effect level. 14,6 mg/m<sup>3</sup> irritant effects



# Hydrogen Peroxide 50%

## Material Safety Data Sheet

### ***Carcinogenicity***

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

### ***Genetic toxicity in vitro***

- In vitro, without metabolic activation, mutagenic effects

### ***Genetic toxicity in vivo***

- In vivo, , Remarks: Animal testing did not show any mutagenic effects.

### ***Possible hazards (summary)***

- Irritating to eyes, respiratory system and skin.
- Risk of serious damage to eyes.
- Carcinogenic effect not applicable to human

## **11.2. Health effects**

### ***Main effects***

- Irritating to skin and mucous membranes
- Risk of serious damage to eyes.

### ***Inhalation***

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

### ***Eye contact***

- Severe eye irritation
- Redness
- Lachrymation
- Swelling of tissue
- Risk of serious damage to eyes.

### ***Skin contact***

- Irritation
- Risk of: Causes burns..

### ***Ingestion***

- Severe irritation
- Ingestion causes burns of the upper digestive and respiratory tracts.
- Nausea
- Vomiting
- Bloating of stomach, belching.
- Risk of chemical pneumonitis from product inhalation.

## **12. ECOLOGICAL INFORMATION**

### **12.1. Ecotoxicity effects**

#### ***Acute toxicity***

- Fishes, Pimephales promelas, LC50, 96 h, 16.4 mg/l
- Fishes, Pimephales promelas, NOEC, 96 h, 5 mg/l
- Crustaceans, Daphnia pulex, EC50, 48 h, 2.4 mg/l
- Crustaceans, Daphnia pulex, NOEC, 48 h, 1 mg/l



# Hydrogen Peroxide 50%

## Material Safety Data Sheet

### Chronic toxicity

- Algae, Skeletonema costatum, EC50, growth rate, 72 h, 2.6 mg/l
- Algae, Skeletonema costatum, NOEC, 72 h, 0.63 mg/l
- Algae, Chlorella vulgaris, EC50, Growth rate, 72 h, 4.3 mg/l
- Algae, Chlorella vulgaris, NOEC, 72 h, 0.1 mg/l

### 12.2. Mobility

- Air, Henry's law constant (H) = 1 mPa.m<sup>3</sup>/mol  
Conditions: 20 °C  
Remarks: not significant
- Air, condensation on contact with water droplets  
Remarks: rain washout
- Water  
Remarks: The product evaporates slowly
- Soil/sediments  
Remarks: non-significant evaporation and adsorption

## 13. DISPOSAL CONSIDERATIONS

### Waste disposal:

Dilution with water is the preferred method of disposal. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this

waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

## 14. TRANSPORT INFORMATION

UN-Number	2014
<b>IATA-DGR</b>	
Class	5.1
Sub-risks	CORROSIVE
Packing group	II
ICAO-Labels	OXIDIZER + CORROSIVE
Proper shipping name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION	
<b>IMDG</b>	
Class	5.1
Sub-risks	Corrosive
Packing group	II
IMDG-Labels	OXIDIZING AGENT + CORROSIVE
HI/UN No.	2014
EmS:	F-H, S-Q
Proper shipping name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION	



# Hydrogen Peroxide 50%

## Material Safety Data Sheet

### ADG

Class	5.1
Sub-risks	8
Packing group	II
ADG-Labels	5.1 + 8
HI/UN No.	58/2014

Proper shipping name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION

### Remarks:

- HAZCHEM Code: 2P

## 15. REGULATORY INFORMATION

### 15.1. Labels

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

Symbol(s)	Xn	Harmful
R-phrase(s)	R22 R37/38 R41	Harmful if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes.
S-phrase(s)	S 1/2 S 3 S28 S36/39	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.

## 16. OTHER INFORMATION

### 16.1 Text of R phrases mentioned in Section 3

- R 5: Heating may cause an explosion.
- R 8: Contact with combustible material may cause fire.
- R35: Causes severe burns.
- R20/22: Harmful by inhalation and if swallowed.

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