



Hydrogen Peroxide 35%

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Identification of the substance or mixture

Product Name	: Hydrogen Peroxide 35%
Chemical Name	: Hydrogen Peroxide Aqueous Solution
Synonyms	: Hydrogen dioxide, hydroperoxide, peroxide
Chemical Formula	: H ₂ O ₂
Molecular Weight	: 34 g
CAS No	: 7722-84-1
EINECS No	: 231-765-0

1.2. Use of the Substance/Mixture

Recommended use	: - Bleaching agent - Disinfectants and general biocidal products
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1.3. Company/Undertaking Identification

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

2. HAZARDS IDENTIFICATION

Appearance	: liquid
Colour	: colourless
Odour	: 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

3. COMPOSITION / INFORMATION ON INGREDIENTS

Material	CAS No	%Concentration	EC No.	EC Class
Hydrogen Peroxide	7722-84-1	35	231-765-0	O, C, Xn; R5- R8-R20/22-R35
Water	7732-18-5	65	231-791-2	Not classified



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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

- 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 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.
- 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.
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- Use personal protective equipment.
- Wear chemical resistant oversuit

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

- 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.
- 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.
 - 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.
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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.

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
- 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/m³
- Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment) 08 2005
Remarks: Listed

8.2. Exposure controls

- Provide appropriate exhaust ventilation at machinery.
 - Apply technical measures to comply with the occupational exposure limits.
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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.
- In case of emissions, face mask with type NO-P3 cartridge.

8.2.1.2. Hand protection

- Impervious 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

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

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.

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
	<i>Remarks:</i> Apparent pH



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Boiling point/boiling range	: 108 °C (H ₂ O ₂ 35 %)
Flash point	: <i>Remarks:</i> The product is not flammable.
Flammability	: <i>Remarks:</i> The product is not flammable.
Explosive properties	: <i>Explosion danger:</i> <i>Remarks:</i> With certain materials (see section 10). <i>Remarks:</i> In case of heating:
Oxidizing properties	: <i>Remarks:</i> Oxidizer
Vapour pressure	: 12 mbar (H ₂ O ₂ 50 %) <i>Remarks:</i> Total pressure (H ₂ O ₂ + H ₂ O) <i>Temperature:</i> 20 °C : 72 mbar (H ₂ O ₂ 50 %) <i>Remarks:</i> Total pressure (H ₂ O ₂ + H ₂ O) <i>Temperature:</i> 50 °C : 1 mbar (H ₂ O ₂ 50 %) <i>Remarks:</i> Partial pressure (H ₂ O ₂) <i>Temperature:</i> 30 °C
Relative density / Density	: 1.13 (H ₂ O ₂ 35 %)
Solubility	: Soluble in: : Water : Polar organic solvents
Partition coefficient: n-octanol/water	: <i>log Pow.</i> -1.1
Viscosity	: Viscosity 1.07 mPa.s (H ₂ O ₂ 27,5 %) <i>Temperature:</i> 20 °C
Vapour density	: 1 (H ₂ O ₂ 50 %)
9.3. Other data	
Freezing point:	: -33 °C (H ₂ O ₂ 35 %)
Auto-flammability	: <i>Remarks:</i> The product is not flammable.
Surface tension	: 74 mN/m (H ₂ O ₂ 27,5 %) <i>Remarks:</i> 20 °C
Decomposition temperature:	: >= 60 °C <i>Remarks:</i> Self-Accelerating decomposition temperature (SADT) : < 60 °C <i>Remarks:</i> 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
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- 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, 841 mg/kg (H₂O₂ 60 %)
- LD50, rat, 1,232 mg/kg (H₂O₂ 35 %)

Acute inhalation toxicity

- LC50, 4 h, rat, 2,000 mg/m³ (Hydrogen peroxide)
- LC0, 1 h, mouse, 2,170 mg/m³ (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 ≥ 50 %)

Eye irritation

- rabbit, Risk of serious damage to eyes. (H₂O₂ 70 %)

Irritation (other route)

- mouse, Respiratory irritation (RD50), 665 mg/m³, (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, NOEL: 7 ppm, irritant effects

Carcinogenicity

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



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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

Chronic toxicity

- Remarks: no data available
- Algae, various species, EC50, from 72 - 96 h, from 3.7 - 160 mg/l
- Remarks: fresh water
- Algae, Nitzschia closterium, EC50, from 72 - 96 h, 0.85 mg/l
- Remarks: salt water

12.2. Mobility

- Air, Henry's law constant (H) = 1 mPa.m³/mol
- Conditions: 20 °C
- Remarks: non-significant volatility
- Air, condensation on contact with water droplets
- Remarks: rain washout
- Water



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Remarks: non-significant evaporation
- Soil/sediments
Remarks: non-significant evaporation and adsorption

12.3. Persistence and degradability

Abiotic degradation

- Air, indirect photo-oxidation, t 1/2 from 10 - 20 h
Conditions: sensitizer: OH radicals
- Water, redox reaction, t 1/2 from 2.5 d, 10000 ppm
Conditions: mineral and enzymatic catalysis, fresh water
- Water, redox reaction, t 1/2 from 20 d, 100 ppm
Conditions: mineral and enzymatic catalysis, fresh water
- Water, redox reaction, t 1/2 from 60 h
Conditions: mineral and enzymatic catalysis, salt water
- Soil, redox reaction, t 1/2 from 15 h
Conditions: mineral catalysis

Biodegradation

- aerobic, t 1/2 < 1 min
Conditions: biological treatment sludge
Remarks: rapid and considerable biodegradation
- aerobic, t 1/2 from 0.3 - 2 d
Conditions: fresh water
Remarks: rapid and considerable biodegradation
- anaerobic
Remarks: not applicable
- Effects on waste water treatment plants, Inhibitor > 200 mg/l
Remarks: inhibitory action

12.4. Bioaccumulative potential

- log Pow -1.1
Result: non-bioaccumulable (enzymatic metabolism)

12.5. Other adverse effects

- Study in progress

12.6. Possible hazards (summary)

- Toxic to aquatic organisms.
- Nevertheless, hazard for the environment is limited due to product properties:
- Does not bioaccumulate.
- . considerable abiotic and biotic degradability.
- . no toxicity of degradation products (H₂O and O₂).

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- In accordance with local and national regulations.



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- Small quantities:
- Dilute with plenty of water.
- After this treatment, the product can be discharged into the sewer.
- Large quantities:
- Contact manufacturer.

13.2. Packaging treatment

- Rinse the empty containers with plenty of water and treat the effluent in the same way as waste.
- Do not rinse the dedicated containers.
- The empty and clean containers are to be reused in conformity with regulations.

14. TRANSPORT INFORMATION

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



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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