



Hidrojen Peroksit

SANAYİ VE TİCARET A.Ş.

Doc.No.: KAL-SPEC-005
Date Approved:10/22/2008
Revision No.:3

MATERIAL SAFETY DATA SHEET

Hydrogen Peroxide(40 to 60 %)

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Hydrogen peroxide solution (40 to 60%)
COMPANY NAME : Hidrojen Peroksit A.Ş.
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2. INFORMATION ON INGREDIENTS

Chemical Name :Aqueous solution
Chemical Formula :H₂O₂
Synonyms :Perhydrol , Hyperox,Peroxide
Hazardous ingredients
Name according to EC Directive :Hydrogen Peroxide
Hazard symbols :O C
Cas No :7722 -84 -1
EC No. :231-765-0
Content :40-60% Hydrogen Peroxide
Recommended uses :Used in bleaching textiles, food , hair ,
paper and other materials; component of rocket propellant; used in the
manufacture of a wide range of chemicals, plastics , pharmaceuticals; used in
photography , electroplating , water tretament and wastewater treatment.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

- Clear, colorless, odorless liquid.
- Oxidizer.
- Contact with combustibles may cause fire.
- Decomposes yielding oxygen that supports combustion of organic matters and can cause overpressure if confined.
- Corrosive to eyes, nose, throat, lungs and gastrointestinal tract.

MATERIAL SAFETY DATA SHEET

Hydrogen Peroxide 40 to 60%

POTENTIAL HEALTH EFFECTS: Corrosive to eyes, skin, nose, throat and lungs. May cause irreversible tissue damage to the eyes including blindness.

Inhalation :

- Nose and throat irritation.
- Cough.
- In case of repeated or prolonged exposure; risk of sore throat, nose bleeds, chronic bronchitis.

Eyes :

- Severe eye irritation ,watering,redness and swelling of the eyelids.
- Risk of serious or permanent eye lesions.

Skin contact :

- Irritation and temporary whitening at contact area.
- Risk of burns.

Ingestion :

- Paleness and cyanosis of the face.
- Severe irritation, risk of burns and perforation of the gastrointestinal track accompanied by shock.
- Excessive fluid in the mouth and nose, with risk of suffocation.
- Risk of throat, edema (fluid in lungs) and suffocation.
- Nausea , vomiting (bloody)
- Risk of chemical pneumonitis from product inhalation.

MATERIAL SAFETY DATA SHEET

Hydrogen Peroxide 40 to 60%

4. FIRST AID MEASURES

Inhalation:

- Remove to fresh air .
- Consult with a physician in case of respiratory symptoms.

Eyes:

- Immediately flush with water for at least 15 minutes, while keeping the eyelids open.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- Consult with an ophthalmologist in all cases.

Skin:

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

Ingestion:

- Consult with a physician immediately in all cases.
- Take to a hospital.

If the subject is completely conscious:

- Rinse mouth with water.
- Dilute by giving 1 or 2 glasses of water.
- Do not induce vomiting.

If the subject is unconscious:

- NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.
- Loosen collar and tight clothing, lay the victim on his/her left side.
- Oxygen or pulmonary resuscitation if necessary.
- Keep warm (blanket).

Notes to Medical Doctor:

Hydrogen peroxide at these concentrations is a strong oxidant. Direct contact with the eye is likely to cause corneal damage especially if not washed immediately. Careful ophthalmologic evaluation is recommended and the possibility of local corticosteroid therapy should be considered. Because of the likelihood of corrosive effects on the gastrointestinal tract after ingestion, and the unlikelihood of systemic effects, attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided. There is a remote possibility, however, that a nasogastric or orogastric tube may be required for the reduction of severe distension due to gas formation.

MATERIAL SAFETY DATA SHEET

Hydrogen Peroxide 40 to 60%

5. FIRE FIGHTING MEASURES

Extinguishing Media: Flood with water. No restriction.

Fire / Explosion Hazards: Product is non-combustible. On decomposition releases oxygen which may intensify fire.

Fire Fighting Procedures: Any tank or container surrounded by fire should be flooded with water for cooling. Wear full protective clothing and self-contained breathing apparatus.

Flammable Limits: Non-combustible

Sensitivity to Impact: No data available

Sensitivity to Static Discharge: No data available

6. ACCIDENTAL RELEASE MEASURES

Precautions:

- Isolate area.
- Approach from upwind.
- Avoid materials and products which are incompatible with the product
- If safe to do so, without exposing personnel, try to stop the spillage.
- In case of contact with combustible materials, avoid product drying out by dilution with water.

Cleanup methods:

- If possible dam large quantities of liquid with sand or earth.
- Dilute with large quantities of water.
- Do not add chemical products.
- In order to avoid the risk of contamination, the recovered product must not be returned to the original tank/container.

Precautions for protection of the environment:

- Immediately notify the appropriate authorities in case of reportable spill.
- Combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large amounts of water to ensure that all hydrogen peroxide is removed.
- Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in a fire.

MATERIAL SAFETY DATA SHEET

Hydrogen Peroxide 40 to 60%

7. HANDLING AND STORAGE

Handling:

- Wear chemical splash-type monogoggles and full-face shield, impervious clothing, such as rubber, PVC, etc., and rubber or neoprene gloves and shoes.
- Avoid cotton, wool and leather. Avoid excessive heat and contamination. Contamination may cause decomposition and generation of oxygen gas which could result in high pressures and possible container rupture.
- Hydrogen peroxide should be stored only in vented containers and transferred only in a prescribed manner.
- Never return unused hydrogen peroxide to original container, empty drums should be triple rinsed with water before discarding.
- Utensils used for handling hydrogen peroxide should only be made of glass, stainless steel, aluminum or plastic.

Storage:

- Store drums in cool areas out of direct sunlight and away from combustibles.
- Keep away from incompatible products.
- Keep in container fitted with safety valve or vent.
- Keep in original packaging ,closed.
- Provide containment diking for storage of the packages and transfer installation.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

<u>Chemical Name</u>	<u>ACGIH</u>	<u>OSHA</u>
Hydrogen peroxide	1ppm(TWA)	1ppm(PEL)

Exposure Controls:

- Ventilation should be provided to minimize the release of hydrogen peroxide vapors and mists into the work environment.
- Spills should be minimized or confined immediately to prevent release into the work area.
- Remove contaminated clothing immediately and wash before reuse.

Personal protective equipment:

Eyes and face: Use chemical splash-type monogoggles and a full-face shield made of polycarbonate, acetate, polycarbonate/acetate, PETG or thermoplastic.

Hand protection: Chemical resistant protective gloves made of PVC or rubber. DO NOT use cotton, wool or leather for these materials react RAPIDLY with higher concentrations of hydrogen peroxide. Thoroughly rinse the outside of gloves with water prior to removal. Inspect regularly for leaks.

MATERIAL SAFETY DATA SHEET

Hydrogen Peroxide 40 to 60%

Skin protection: Consult your industrial hygienist or safety manager for the selection of personal protective equipment suitable for the working conditions.

Respiratory protection: NIOSH approved full-face supplied air respirator for excessive concentrations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	Slightly pungent
Appearance:	Clear, colorless liquid
Autoignition temperature:	Non-combustible
Boiling point:	110 °C (229 °F) (40%); 114 °C (237 °F) (50%)
Coefficient of oil/water:	Not available
Density/weight per volume:	Not available
Evaporation rate:	Above 1 (Butyl Acetate = 1)
Flash point:	Non-combustible
Freezing point:	-41.4 °C (-42.5 °F) (40%); -52 °C (-62 °F) (50%)
Odor threshold:	Not available
Oxidizing properties:	Strong oxidizer
Percent volatile:	100%
pH:	(as is) 1.0 to 3.0
Solubility in water:	(in H ₂ O % by wt) 100%

10. STABILITY AND REACTIVITY

Stability : Stable under normal conditions of use with slow gas release.

Conditions to avoid: Excessive heat or contamination could cause product to become unstable.

Materials and substances to avoid: Acids, bases, metals, salts of metals, reducing agents, organic materials, flammable substances.

Hazardous decomposition products : Oxygen; Decomposition releases steam and heat.

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11. TOXICOLOGICAL INFORMATION

Eye effects : 70% hydrogen peroxide : Severe irritant (corrosive)

Skin effects : 50% hydrogen peroxide : Severe irritant (corrosive)

Dermal LD₅₀ : 70%hydrogen peroxide : >6.5g/kg (rabbit)

Oral LD₅₀ : 50% hydrogen peroxide : > 225mg/kg (rat)

Inhalation LC₅₀ : 50% hydrogen peroxide : > 0.17mg/l (rat)

Target organs : Eye,skin,nose,throat,lungs

Acute effects from overexposure : Severe irritant /corrosive to eyes, skin and gastrointestinal tract. May cause irreversible tissue damage to the eyes including blindness. Inhalation of mis tor vapors may be severely irritating to nose, throat and lungs.

Chronic effects from overexposure : The International Agency for Research on Cancer (IARC) has concluded that there is inadequate evidence for carcinogenicity of hydrogen peroxide in humans, but limited evidence in experimental animals.

Carcinogenicity :

<u>Chemical name</u>	<u>IARC</u>	<u>NTP</u>	<u>OSHA</u>
Hydrogen peroxide	listed	not listed	not listed

12. ECOLOGICAL INFORMATION

Acute ecotoxicity :

- Fish ,pimephales promelas; LC₅₀, 96 hours, 16.4mg/L
- Crustaceans,daphnia pulax; EC₅₀ , 48 hours, 2.4mg/L
- Algea ,various species; EC₅₀ , 72 to 96 hours,3.7 to 160mg/L in fresh water
- Algea ,nitzchia closterium;EC₅₀ , 72 to 96 hours ,0.85mg/L in salt water

Chemical fate information: Hydrogen peroxide in the aquatic environment is subject to various reduction or oxidation processes anf decomposes into water and oxygen. Hydrogen peroxide half –life in fresh water ranged from 8 hours to 20 days, in air from 10-20 hrs. and in soils from minutes to hours depending upon microbiological activity and metal contaminants.

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13. DISPOSAL CONSIDERATIONS

Disposal method: An acceptable method of disposal is to dilute with a large amount of water and allow the hydrogen peroxide to decompose followed by discharge into a suitable treatment system in accordance with all regulatory agencies. The appropriate regulatory agencies should be contacted prior to disposal.

14. TRANSPORT INFORMATION

Mode	DOT	IMDG	IATA
UN Number	UN 2014	UN 2014	UN 2014
Class(subsidiary)	5.1(8)	5.1(8)	5.1(8)
Proper Shipping Name	Hydrogen Peroxide, aqueous solution	Hydrogen Peroxide, aqueous solution	Hydrogen Peroxide, aqueous solution
Hazard label(subsidiary)	Oxidizer (corrosive)	Oxidizing Agent + corrosive	Oxidizer + Corrosive
Marine Pollutant	No	No	No
Placard (subsidiary)	Oxidizer (5.1) Corrosive(8)	2014	
Packing Group	II	II	II
Other Information	Protect from physical damage. Keep drums in upright position. Drums should not be stacked in transit. Do not store drum wooden pallets.		

15. REGULATORY INFORMATION

Labelling according to EC Directives

Symbol : C Corrosive

R-phrases : 34 Causes burns

S-phrases : 3-26-36/37/39-45 Keep in a cool place. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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