

Safety Data Sheet

According To Regulation (EC) No 1907/2006 (REACH)


HYDROGEN PEROXIDE

Version: 1.0
Form No: 193204

Preparation Date : 4/1/2013
Revision Date: 4/1/2013

1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name	HYDROGEN PEROXIDE
SDS No	193204
CAS No	7722-84-1
EC No	231-765-0
Molecular Formula	H ₂ O ₂
Structural Formula	

Description Chemical compound

1.2 Relevant Identified Uses Of The Product And Uses Advised Against

Relevant Identified Uses	Bleaching of textiles, detergents and personal hygiene product composition, industrial sterilization applications, pulp and paper bleaching, food and metal industries in various applications.
Uses Advised Against	See chapter 16 for a general overview

1.3 Details Of The Supplier Of The Safety Data Sheet

Supplier (Manufacturer)	AK-KİM KİMYA SAN. VE TİC. A.Ş. www.akkim.com.tr
Address – Factory	Denizçalı Köyü, Taşköprü Mevkii, P.K. 39 77600 Yalova / TÜRKİYE
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1.4 Information Providing Authority About Safety Data Sheet

	Ali Haydar KETİR – Environmental Engineer
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1.5 Emergency Telephone Number

Company Emergency	+ 90 226 815 33 00
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2. HAZARDS IDENTIFICATION

2.1 Classification Of The Product

2.1.1 Classification According to Regulation (EC) No 1272/2008

- Oxidising liquids, Category 2; H272
- Acute toxicity, Category 4, oral; H302
- Acute toxicity, Category 4, inhalation; H332
- Skin corrosion, Category 1B; H314
- Serious eye damage, Category 1; H318
- Specific Target Organ Toxicity (single exposure), Category 3; H335

2.1.2 Classification According to Regulation to 67/548/EC

- Heating may cause an explosion;(R5)
- Contact with combustible material may cause fire; (O; R8)

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- Causes burns ; (C; R34)
- Harmful by inhalation and if swallowed; (Xn; R20/22)

2.2 Label elements

2.2.1. Labeling According to Regulation (EC) No 1272/2008 [CLP /GHS]

Product Identifier

Hazard Component for Labeling

- Hydrogen Peroxide 50 %

Hazard Pictograms



Signal Word

DANGER

Hazard Statements

- H272 May intensify fire; oxidizer.
H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage
H318 Causes serious eye damage
H332 Harmful if inhaled.
H335 May cause respiratory irritation

Precautionary Statements

Prevention

- P101 If medical advice is needed, have product container or label at hand.
P221 Take any precaution to avoid mixing with combustibles
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P270 Do not eat, drink or smoke when using this product.

Response

- P301+P330+ P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician

Storage

- P405 Store locked up.

Supplemental Hazard Information (EU) Statements

No data available.

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2.2.2 Labeling According to Regulation to 67/548/EEC

Hazard Description

According to the EC Regulation No. 67/548/EEC This product is classified as follows:

- Heating may cause an explosion;(R5)
- Contact with combustible material may cause fire; (O; R8)
- Causes burns ; (C; R34)
- Harmful by inhalation and if swallowed; (Xn; R20/22)

Hazard Component for Labeling

- Hydrogen Peroxide 50 %

Hazard Symbols

- O-Oxidising
- C-Corrosive



Risk Phrases

R5 Heating may cause an explosion

R8 Contact with combustible material may cause fire

R20/22 Harmful by inhalation and if swallowed

R34 Causes burns

Safety Phrases

S3 Keep in a cool place

S5 Keep contents under control.

S13 Keep away from food, drink and animal feedingstuffs.

S17 Keep away from combustible material

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S28 After contact with skin, wash immediately with plenty of water.

S36/39 Wear suitable protective clothing and eye/face protection.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.2.3. Special Rules For Supplemental Label Elements For Certain Mixtures

None.

2.2.4. Additional Labeling

None.

2.3 Hazard Identification

2.3.1 Skin Contact

Causes severe burns and damage to the skin when applied to human skin.

2.3.2 Eye Contact

Causes severe eye damage.

2.3.3. Ingestion

Harmful if swallowed

2.3.4 Inhalation

Harmful if inhaled. May cause respiratory irritation. Inflammatory changes of the respiratory tract, in extreme cases pulmonary damage due to higher vapour/aerosol concentrations

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2.3.5 Long term effects

Irritation of the mucous membranes (mainly of the eyes and the throat) and gradual bleaching of the hair; possibly changes of the skin

2.3.6 Adverse Environmental Effects

Very toxic to aquatic organisms.

2.4 Additional Information





Full text of R-, H- and EUH-phrases: see section 16

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Description Of The Substance

According to the REACH Regulation the product is a mono-constituent substance.

3.2 Hazardous ingredients

NAME	EINECS NO	CAS NO.	CONTENT %	CLASSIFICATION	
				DSD	CLP
Hydrogen peroxide solution	231-765-0	7722-84-1	30-70	R5  O;R8  Xn;R20/22  C;R35	 DANGER Oxidising liquids, Category 1; H271 Acute toxicity, Category 4, oral; H302 Acute toxicity, Category 4, inhalation; H332 Skin corrosion, Category 1A; H314 Serious eye damage, Category 1; H318 Specific Target Organ Toxicity (single exposure), Category 3; H335
water	231-91-2	7732-18-5	70-30	Substance is not classified as Hazardous According to Regulations (EC) No 1272/2008 and 67/548/EEC	

3.3 Additional information:

· Full text of R-, H- and EUH-phrases: see section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

4.1.1 General information

· Remove contaminated or saturated clothing.

4.1.2 Following inhalation

- Whilst protecting yourself remove the casualty from the hazardous area and take him to the fresh air.
- Lay the casualty down in a quiet place and protect him against hypothermia.
- As soon as possible repeatedly have the casualty deeply breath a glucocorticoid inhalation spray in.
- In the case of breathing difficulties have the casualty inhale oxygen.
- If the casualty is unconscious but breathing lay him in a stable manner on his side.
- If the casualty has stopped breathing give mouth to nose resuscitation. If this is not possible use mouth to mouth resuscitation. Keep his respiratory tract clear.
- Arrange medical treatment.



4.1.3 Following skin contact

· Remove contaminated clothing while protecting yourself.

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- Rinse the affected skin areas for 10 minutes under running water.
- After contamination with concentrations > 10% in any case arrange medical treatment.
- Take off contaminated clothing and shoes immediately.
- Wash off with plenty of water.
- Keep warm and in a quiet place
- Call a doctor immediately.
- Take victim immediately to hospital.



4.1.4 Following eye contact

- Rinse the affected eye with widely spread lids for 15 minutes under running water whilst protecting the unimpaired eye.
- Arrange medical treatment.
- At concentrations > 10%: After rinsing of the eyes ensure immediate transportation of the casualty to an ophthalmologist/to hospital and, if possible, continue rinsing during transportation.
- Immediate medical attention is required.
- Take victim immediately to hospital.



4.1.5 Following ingestion

- By all means the casualty should drink plenty of liquid (water whenever possible).
- In contrast to some recommendations, vomiting should be avoided, if possible, and laxatives and activated charcoal should not be administered.
- Immediately summon an emergency physician to the scene of the accident.
- In case of spontaneous vomiting, position the casualty's head in a position deeper than the chest (highest risk of aspiration due to the formation of foam).
- If victim is conscious: - If swallowed, rinse mouth with water (only if the person is conscious).
- If victim is unconscious but breathing: oxygen or artificial respiration if needed.
- Call a physician immediately.
- Take victim immediately to hospital.



4.1.6 Self-protection of the first aider

- Protect skin and eyes.

4.1.7 Notes for the doctor

- Consider this MSDS.
- Keep under medical observation if inhaled: pulmonary oedema may occur within 48 hours.
- Keep under medical observation in case of eye contact: eye damage effects may occur within a few days.
- The results of toxicity from W derivemainly from cases of ingestion.
- In these cases and in all other cases of exposure (eyes, skin, respiratory tract) the concentrations of the noxa (> 3% up to 90 vol. %) and the exposure times have a decisive impact on the extent of the (especially) topical lesions.
- Symptoms of acute poisoning:
- Eyes: From painful irritation up to severe chemical burns (conjunctival hyperaemia, conjunctivitis, oedema, blepharospasm, iritis, corneal turbidity, epithel defects, permanent

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damage of the cornea).

- *Skin: Solutions as of approx. 10 %: Temporary bleaching (oxygen emphysema in the interstitial tissue, gas embolism in the blood capillaries), erythema, pain; as of a concentration of approx. 70%: chemical burns, comparable to third-degree burns; contamination of large areas might entail systemic oxygen embolism.*
- *Inhalation: Irritation of the mucosa, inflammatory tissue reactions, obstruction, glottic and pulmonary oedema, dyspnoea up to respiratory failure; extreme cases might involve systemic effects.*
- *Ingestion: Irritation up to corrosion of the contacted mucous membranes especially in the upper digestive tract, stomach distension, displacement of the upper respiratory tract due to the formation of foam, gastritis, duodenitis, colitis, acute visceral congestion, formation of vacuoles in the gastrointestinal submucosa, in the lymphatic channels, mesenteric lymph nodes or mucosa-associated lymphoid tissue as well as vacuolisation in other organs, systemic effects due to gas embolism.*
- *Systemic effects: Shock, acute coronary insufficiency, status epilepticus, cerebrovascular collapse, respiratory failure.*
- *The most frequent cause of death after ingestion of W solutions > 10% is the obstruction of the respiratory tract due to the formation of foam (-> mechanic asphyxia)]*
- *First medical assistance:*
- *Injuries of the eyes due to the contact with > 10% solutions should be followed up by an examination by an ophthalmologist as soon as possible after first medical assistance*
- *Because of a possible after-resorption, skin contaminations must be removed with particular care. Skin irritations or chemical burns should be treated with Flumethasone foam.*
- *The contamination of large skin areas with W (> 10%) requires a minimum follow-up observation period of several hours.*
- *Continue the pulmonary oedema prophylaxis after inhalation. In case of respiratory complaints, have the casualty sit upright and kept warm. Some cases might require oxygen supply over a breathing mask (35% oxygen, four litres per minute).The administration of oxygen in the inspired gas mixture must be restricted to max. 24% for patients suffering from chronic bronchitis.*
- *Oral intake of larger amounts of H₂O₂ involves the hazard of gas embolism, which requires immediate moving of the patient to a supine position (head in a deeper position than the pelvis).*
- *If the patient is not capable of coughing up or spitting out the foamy secretion, an extraction unit should be used.*
- *The cardiovascular functions must be monitored during the treatment (including ECG).*
- *Please check the possibility of an early intubation. Application of oxygen, cardiac massages, if required. A venous access established early facilitates necessary infusions or effective pain treatment prior to the arrival at the intensive care unit.*

5.FIRE-FIGHTING MEASURES

5.1 General Information and Flammable Properties

Substance has an oxidizing effect.

H₂O₂-vapours may explode if the vapour phase reaches a concentration greater than 40

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wt. % at normal pressure.
Fire fighting equipment must be available.
Inspect the electrical fittings regularly against the higher risk of corrosion..

5.2 Extinguishing media:

- Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.3 Special hazards arising from the product

- The product is flammable.
- Heating can release hazardous gases.
- Gives off hydrogen by reaction with metals.
- Contact with water may produce heat release and presents risks of splashing.

5.4 Advice for fire-fighters

- Wear self-contained breathing apparatus and protective suit.
- Fire fighters must wear fire resistant personnel protective equipment.
- Wear chemical resistant oversuit.
- Cool containers / tanks with water spray.
- Keep from any possible contact with contaminated water.
- Approach from upwind.
- Suppress (knock down) gases/vapours/mists with a water spray jet.
- After the fire, proceed rapidly with cleaning of surfaces exposed to the fumes in order to limit equipment damage.

5.5 Additional information

- Move containers from fire area if you can do so without risk.
- Alert Fire Brigade and tell them location and nature of hazard.
- Empty containers retain product residue (liquid and/or vapor) and can be dangerous.
- Water runoff can cause environmental damage .Dike and collect water used to fight fire. Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities.
- Containers can build up pressure if exposed to heat (fire).

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- Prevent further leakage or spillage if safe to do so.
- Keep away from Incompatible products.
- Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.
- Use personal protective equipment
- See section 8.

6.2 Environmental precautions

- If the product contaminates rivers and lakes or drains inform respective authorities.
- Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

6.3.1 For containment

- Isolate hazarded area.
- Keep unnecessary and unprotected personnel from entering.

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- Eliminate all ignition sources (no smoking, fares, sparks or flames in immediate area).
- Stop the flow material, if this is without risk.
- Dike the spilled material, where this is possible.
- Use water spray to reduce vapors or divert vapor cloud drift.
- Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local / national regulations.

6.3.2 For cleaning up

- Dam up.
- - Do not mix waste streams during collection.
- - Soak up with inert absorbent material.
- - Keep in properly labelled containers.
- - Keep in suitable, closed containers for disposal.
- - Treat recovered material as described in the section "Disposal considerations".
- - Never return spills in original containers for re-use.

6.3.3 Other information

- Dispose of waste material according to local, state and federal regulations.

6.4 Reference to other sections

- Dispose of contaminated material as waste in accordance with section 13.
- See Section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

7.1.1 Protective measures

Personal preventions

- Do not get in eyes, on skin, or on clothing.
- Do not taste or swallow.
- Avoid breathing vapor or mist.
- Wash thoroughly after handling.
- Use only with adequate ventilation.
- Avoid contamination.
- Keep from contact with clothing and other combustible materials. Store in tightly closed container.
- Emptied container retains vapor and product residue.
- Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.
- **DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.**

Fire preventions

- Do not handle store or open near an open flame, sources of heat or sources of ignition.
- Keep away from heat, sparks and open flame.

Environmental precautions:

- Ensure adequate ventilation.
- Dispose of waste material according to local, state and federal regulations.

7.1.2 Advice on general occupational hygiene

- Do not eat, drink, or smoke in areas where the material is used.

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- Wash thoroughly after handling the material.
- Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

- Keep away from heat, sparks and flame.
- Keep container closed when not in use.
- Keep in a cool, well-ventilated place.
- Do not store outside in direct sunlight.
- Store in original containers.
- Store away from incompatible materials and foodstuff containers
- Protect containers against physical damage and check regularly for leaks.
- Protect material from direct sunlight.
- Observe manufacturer's storing and handling recommendations.
- Keep away from incompatible products.

7.3 Advice on common storage

- Keep away from food, drink and animal feeding stuffs.
- Store in original containers and keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

7.4 Specific precautions on storage

- No further details.
- Local regulations may require specific equipment for storage or use.

8.EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Preventive industrial and medical examinations must be carried out according to the application area.

8.1.1 Occupational exposure limits

Workplace Exposure Limits:

Occupational Exposure Limits:

- TLV/TWA : 1.4 mg/m³ (1 ppm)
- STEL : 2.8 mg/m³ (2 ppm)
- PEL : 1.4 mg/m³ (1 ppm)

8.2 Exposure controls

8.2.1 Appropriate engineering controls:

- Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures.
- Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.
- Good general ventilation should be sufficient to control airborne levels.
- Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.
- Use explosion-proof ventilation equipment.

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- Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

8.2.2 Personal protection equipment

8.2.2.1 Eye / Face protection:

- Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).



8.2.2.2 Skin protection

Hand protection

- Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.



Other protection

- Handle in accordance with good industrial hygiene and safety practice.
- Where splashing is possible, full chemically resistant protective clothing (e.g. acid suit) and boots are required.
- Wash hands before breaks and at the end of workday.
- Wash thoroughly after using product.
- Wash hands before eating or drinking.



8.2.2.3 Respiratory protection

- Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls.
- If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).



8.2.2.4 Hygienic Practices

- Wash hands before eating.
- Remove contaminated clothing and wash before reuse.
- Use only in a well ventilated area.
- Follow all MSDS/label precautions even after container is emptied because they may retain product residues.
- Ground and bond containers when transferring material.
- Use spark-proof tools and explosion proof equipment.
- Avoid prolonged or repeated contact with skin.
- Avoid breathing vapors from heated material.
- Avoid contact with eyes, skin, and clothing.

8.2.3 Environmental exposure controls

- Legislation for the protection of the environment must be met in full.

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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

9.2 Appearance

Form/Physical state	Clear, Liquid
Color	Colorless
Odor	Odourless

9.3 Safety relevant basic data

Data	Value
Molecular weight	34.02 (g/mol)
pH (%1 solution)	5,0-6,0
Melting/Freezing point/range (°C)	- 41.4 (%40), - 52 (%50)
Boiling point/range (°C)101,3 kPa	114(%50),103(%30),108(%35)
Flash Point (°C)	No data available
Oxidizing properties	Not applicable
Auto Ignition temperature (°C)	No data available
Oxidative Properties	Strong oxidizer.
Viscosity cps (cSt) @25°C	1.245
Explosion limit upper, %by volume	16
Explosion limit lower, %by volume	25
Relative Density	1.19 (%50), 1.11 (%30), 1.13 (%35), 1.24 (%60)
Vapour Pressure	22 mmHg, 30 °C, %40; 18.3 mmHg, 30 °C, %50
Solubility in water	100 %.

Note: The above features were determined according to prescribed methods at the Classification, Packaging and Labeling of Hazardous. Substances Regulation Section A-3 or a method comparable to the other.

10. STABILITY AND REACTIVITY

10.1 Reactivity

10.2 Chemical stability

- Stable under normal conditions.

10.3 Possibility of hazardous reactions

- Can form unstable or explosive compounds with halogens, nitric acid, hypochlorites, silver, mercury, lead.
- Can react violently if in contact with strong acids, nitrogen oxides.

10.4 Conditions to avoid:

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

10.5 Incompatible materials:

- Acids, Bases, Metals, Heavy metal salts, Powdered metal salts, Reducing agents, Organic materials,
- Flammable materials

10.6 Hazardous decomposition products:

- Oxygen

10.7 Hazardous polymerization:

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- No data available.

11. TOXICOLOGICAL INFORMATION

10.8 General Information

- Exposure Routes: Inhalation and Oral.
- Target organ effects: Skin Corrosive and respiratory and eye irritant.

11.1 Acute toxicity

Acute oral toxicity

- LD50, rat, 1,193 - 1,270 mg/kg (H2O2 35 %)

Acute inhalation toxicity

- LC50, 4 h, rat, > 0.17 mg/l (H2O2 50 %), Remarks: vapour

Acute dermal toxicity

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

11.2 Skin corrosion/irritation and Eye damage/irritation:

Skin irritation

- rabbit, Skin irritation (H2O2 35 %)

Eye irritation

- rabbit, Severe eye irritation (H2O2 10 %)

Irritation (other route)

- Inhalation, Human experience, Irritating to respiratory system., 665 mg/m³, RD 50, (H2O2 50 %)

11.3 CMR effects (Carcinogenicity) :

This product is not considered to be a carcinogen by IARC¹, ACGIH², NTP³ or OSHA⁴.
Oral, Prolonged exposure, mouse, Target Organs: duodenum, carcinogenic effects
- Dermal, Prolonged exposure, mouse, Animal testing did not show any carcinogenic effects

11.4 CMR effects (Mutagenicity and Toxicity for reproduction) :

- No indication of mutagenicity when tested in vitro in the Bacterial Reverse Mutation Assay and in vivo using the Micronucleus Assay.
- Genetic toxicity in vitro
- - In vitro tests have shown mutagenic effects.
- Genetic toxicity in vivo
- - In vivo tests did not show mutagenic effects
- Substance is totally biotransformed (metabolised).
- - study scientifically unjustified

11.5 Other Toxicological Effects:

Allergic Effects	No data available.
Effects on Repeated Doses Chronic Exposures	Chronic toxicity - Oral, 90-day, mouse, Target Organs: Gastrointestinal tract, Lowest observable effect level: 300 ppm, LOAEL - Oral, 90-day, mouse, NOEL: 100 ppm, NOAEL - Inhalation, 28-day, rat, Target Organs: Respiratory system, Lowest observable effect level: 10 ppm,

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	LOAEL, vapour - Inhalation, 28-day, rat, NOEL: 2 ppm, NOAEL, vapour
Sensitization	Guinea pig; Did not cause sensitization on laboratory animals.
Developmental Toxicity (Teratogenicity)	No data available.
Fertility	No data available.
Toxicokinetics	No data available

11.6 STOT-single/repeated exposures:

STOT-single exposure	No data available
STOT-repeated exposure	No data available.

11.7 Symptoms related to the physical, chemical and toxicological characteristics:

In case of inhalation	Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough. - Risk of: Nose bleeding, chronic bronchitis.
In case of skin contact	Irritation - Risk of: Burn
In case of eye contact	Severe eye irritation - Risk of serious damage to eyes. - Symptoms: Redness, Lachrymation, Swelling of tissue
In case of ingestion	Severe irritation

11.8 Additional Toxicological Information:

- Toxicological classifications are based on available knowledge and information
- EEC classification: T; Toxic , C; Corrosive
- The special effects to health are considered by taking into account the information in section 3.

12.ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

Acute toxicity

- Fishes, *Pimephales promelas*, LC50, 96 h, 16.4 mg/l
- Fishes, *Pimephales promelas*, NOEC, 96 h, 4.3 mg/l
- Crustaceans, *Daphnia pulex*, EC50, 48 h, 2.4 mg/l

Remarks: fresh water, semi-static test

- Crustaceans, *Daphnia pulex*, NOEC, 48 h, 1 mg/l

Remarks: fresh water, semi-static test

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 Photo degradation

No data available.

12.3 Effects on Waste Water Treatment Plants

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Product has inhibitory effects on the activities of micro-organisms, whether the information is not related, the likely impact on waste water treatment plants is unknown.

12.4 Mobility

Liquid.
Highly soluble in water, 100 %

Water threat class	No data available
Clean Water Impact	No data available
Known or predicted environmental distribution	No data available

12.5 Results of PBT and vPvB assessment

Persistence and degradability

Abiotic degradation

- Air, indirect photo-oxidation, t 1/2 24 h
Conditions: sensitizer: OH radicals
- Water, redox reaction, t 1/2 120 h
Conditions: mineral and enzymatic catalysis, fresh water, salt water
- Soil, redox reaction, t 1/2 12 h
Conditions: mineral and enzymatic catalysis

Biodegradation

- aerobic, t 1/2 < 2 min
Conditions: biological treatment sludge
Remarks: Readily biodegradable.
- aerobic, t 1/2 from 0.3 - 5 d
Conditions: fresh water
Remarks: Readily biodegradable.
- anaerobic
Conditions: Soil/sediments
Remarks: not applicable

Bioaccumulation Potential :

Bioaccumulative potential: -1.57
Result: Does not bioaccumulate.

12.6 Additional information

- log Pow@20°C: 1.78×10^{-12}
- Harmful to aquatic life.
- Do not allow to be released into the environment
- See the sections 6, 7, 13, 14 and 15.

13.DISPOSAL CONSIDERATIONS

13.1 Product / Packaging disposal

- Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.
- Offer surplus and non-recyclable solutions to a licensed disposal company.
- Contact a licensed professional waste disposal service to dispose of this material.

13.2 Contaminated packaging

- Empty containers.

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- Clean container with water.
- Dispose of rinse water in accordance with local and national regulations.
- Where possible recycling is preferred to disposal or incineration.
- In accordance with local and national regulations.
- All residual material must be emptied and the containers recycled where possible. Where recycling is not possible, containers must be disposed of in accordance with Federal (country-specific), state, and local regulations.
- If questions exist about disposal, please contact the manufacturer for additional information.
- If there is product residue in the emptied container, follow directions for handling on the container's label.

13.3 Disposal Methods





- This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.
- Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.
- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- If this product has been altered or contaminated with other hazardous materials, appropriate waste analysis may be necessary to determine proper method for disposal.

13.4 European Waste Catalogue

- According to the European Waste Catalogue, Waste Codes are not product specific but application specific. Waste Codes should be assigned by the User based on the application in which the product is used.
- Uncleaned packaging must be disposed of in accordance with official local regulations
- The final classification has to be done together with the local waste disposal company / authority.

1. TRANSPORT INFORMATION

UN 2014- HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)

	ADR ⁵ /RID ⁶	ADNR	IMDG ⁷	ICAO ⁸ /IATA ⁹
TRANSPORTATION	Road	River	Marine	Airways
PROPER SHIPPING NAME	UN 2014- HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)			
UN/ID No.	2014	2014	2014	2014
SYMBOL				

Safety Data Sheet

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CLASS	5,1	5,1	5,1
PACKAGING GROUP	II	II	II
LABELLING NO	5.1+8	5.1+8	5.1+8
CLASSIFICATION CODE	OC1		
HAZARD NO (HIN NO)	58		
EmS		F-H;S-Q	
MARINE Pollutant		NO	
Road Transport Notes: This product is not regulated as a hazardous material.			

15.REGULATORY INFORMATION

15.1 Safety, Health And Environmental Regulations /Legislation Specific For The Substance:

- Regulation (EC) 1907/2006 (REACH);
- Regulation (EC) No 1272/2008 of the European parliament and of the council on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;
- Commission regulation (EU) No 453/2010, amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);
- in compliance with applicable Classification and Labeling Procedure for Hazardous Chemical Substances and Preparations;
- in compliance with applicable Procedure of Safety Data Sheet Requirements and Supply thereof to Professional Users;
- in compliance with applicable General Regulations for Storage of Hazardous Chemical Substances and Preparations;
- Price thereof;
- in compliance with 67/548/EEC Directive;
- in compliance with European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).
- Toxic Substance Control Act list (TSCA) : - In compliance with inventory.
- Australian Inventory of Chemical Substances (AICS): - In compliance with inventory.
- Canadian Domestic Substances List (DSL) : - In compliance with inventory.
- Korean Existing Chemicals Inventory (KECI (KR)) : - In compliance with inventory.
- EU list of existing chemical substances (EINECS): - In compliance with inventory.
- Japanese Existing and New Chemical Substances (MITI List) (ENCS) : - In compliance with inventory.
- Inventory of Existing Chemical Substances (China) (IECS) : - In compliance with inventory.
- Philippine Inventory of Chemicals and Chemical Substances (PICCS) : - In compliance with inventory.
- New Zealand Inventory of Chemicals (NZIOC) : - In compliance with inventory.

15.2 Chemical Safety Assessment

15.2.1 HAZARD

CLP classification according to Annex VI of CLP (Regulation (EC) No 1272/2008)

- May intensify fire; oxidizer.
- Harmful if swallowed
- Causes severe skin burns and eye damage

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- Causes serious eye damage
- Harmful if inhaled.
- May cause respiratory irritation

15.2.2 RISK

Risk Codes:

- Heating may cause an explosion
- Contact with combustible material may cause fire
- Harmful by inhalation and if swallowed
- Causes burns

15.3 Label Elements

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006 and ISO 11014:2009. This product is classified according to EU Directive 67/548/EC and GHS/CLP.

- System of specific information relating to Dangerous Preparations: 2001/58/EC as amended by Directive 93/112/EC, 2001/58/EC and 2006/8/EC.

16. OTHER INFORMATION

16.1 Other Information

- For additional information regarding **AK-KIM KIMYA SAN. VE TIC. ŞTİ.** products please contact the **AK-KIM KIMYA SAN. VE TIC. A.Ş** Vedat Ateşoğlu - vatesoglu@akkim.com.tr
- The above information complies with the 199/45/EC and 1907/2006 Directives and their amendments.
- In all cases of potential poisoning supportive therapy is of the utmost importance.

16.2 Related Person

- Vedat Ateşoğlu - vatesoglu@akkim.com.tr Ak-Kim Kimya San. Ve Tic. A.Ş
- Prepared by : Ali Haydar KETİR - Ak-Kim Kimya San. Ve Tic. A.Ş
ali.ketir@akkim.com.tr
- **Competent Person Accreditation no : TSE GBF-0855 28.07.2011**

16.3 Revision Date:

- Date: April 1, 2013
- Version: 1.0 /EN
- MSDS No: 193204

16.4 Reason of issue

- Compiling according to Regulation (EC) No 1272/2008 [CLP/GHS]

16.7 Relevant R-, H- and EUH Phrases (number of full text)

R5	Heating may cause an explosion
R8	Contact with combustible material may cause fire
R20/22	Harmful by inhalation and if swallowed.
R35	Causes severe burns.
H271	May cause fire or explosion; strong oxidiser.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage

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H332	<i>Harmful if inhaled.</i>
H335	<i>May cause respiratory irritation</i>

16.8 Legal disclaimer:

- *The purpose of the above information is to describe the products only in terms of health and safety requirements.*
- *The information given should not, therefore, be construed as guaranteeing specific properties or as specification.*
- *Customers should satisfy themselves as to the suitability and completeness of such information for their own particular use.*
- *The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication.*
- *The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.*
- *The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Due to the many factors outside our control when using this product, we cannot accept liability for any injury, accident, loss or damage caused through its use.*

¹ IARC- International Agency For Research On Cancer

² ACGIH-American Governmental Conference of Industrial Hygienists

³ NTP-National Toxicology Program

⁴ OSHA-Occupational Safety and Health Administration

⁵ ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

⁶⁶ RID: Regulations Concerning the International Transport of Dangerous Goods by Rail

⁷ IMDG: International Maritime Code for Dangerous Goods

⁸ ICAO: International Civil Aviation Organization

⁹ IATA: International Air Transport Association