Label no.5.1
Oxidizing substances

Label no.8
Corrosive substances

O

Oxidizer

C

Corrosive

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

1.1. Identification of the substance/preparation

Trade name	Hydrogen Peroxide Solution **(tipe 35 and tipe 50)**
Chemical Name	Hydrogen Peroxide
Chemical family	Inorganic Peroxide
Common Synonyms	Hydrogen dioxide, Perhydrol, Hydroperoxide
Chemical Formula	H_2O_2
Molecular weight	34,02

1.2.Uses of the substance/preparation

industrial bleaching proccesing (such aspulp and paper, textile), pollution abatement and general oxidation reaction. Raw material in chemical syntesis. Desinfectant agent in food and pharmaceutical industries.

1.3. Company/undertaking identification

OLTCHIM S.A.

Address	1 Uzinei Street, 240050 - R@mnicu V@lcea, Romania
Telephone	+40/250/701200
Fax	+40/250/735446
e-mail	oltchim @oltchim.ro

1.4.Emergency telephone number **+40 / 250/738141**

2. HAZARD IDENTIFICATION

EC Classification according to Directive 67/548/CEE, Annex I: R5, O; R8, C; R35, Xn; R20/22
Strog Oxidizer.
Corrosive liquide.

Health effects: Hydrogen peroxide is corrosive and irritating to eyes, skin, nose, throat and lungs. May cause irreversible tissue damage to the eyes, including blindness. Inhalation of high concentration of vapour may cause lung oedema.The effects may be delayed, so medical observation is indicated.

Environmental effects: Hydrogen peroxide is very soluble in water, has a good infiltration capacity and mobility in the soil.Accidental spills in soil may cause natural organicmatters decomposition by fastly oxidation. If hydrogen peroxide wastes are drained into natural water courses without previous treatment, may cause destruction of aquatic life .

Emergency overview: This material is a strong oxidizer. Contact with combustible materials may cause fire. Decomposes yielding oxygen that supports combustion of organic matters and can cause overpressure if confined. Metal traces can cause uncontrolled descomposition of the product.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components/ constituents	Concentration %,wt.	CAS No.	EC No.	Annex I Index No.	Hazard Symbol	R phrases
Hydrogen Peroxide	30-60	7722-84-1	231-765-0	008-003-00-9	O C Xn	R8 R35 R 20/22
Water	balance	7732-18-5				

4. FIRST - AID MEASURES

Seek medical attention immediateky in all cases of exposure!

Inhalation: Remove to fresh air. If breathing stops, give artificial respiration. If breathing is difficult administer oxygen.Seek medical attention if irritation persists.

Skin contact: Flush contaminated skin with large amounts of water. If the material penetrates clothing, immediately remove the clothing and wash the skin with plenty of water. Get medical attention if irritations occur.Wash clothing before reuse.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes; lifting upper and lower lids to ensure complete irrigation of all eye and lid tissue.Contact lenses should not be worn when working with this material

Ingestion: Rinse mouth with plenty of water. If person is conscious, immediately administer large quantities of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Get immediate medical attention.

General advice: Never give anything by mouth to an inconscious person. Keep airway clear. Remove contaminated clothing. Get medical attention immediately.

Note to physician: Hydrogen peroxide at this concentration is a strong oxidant.Direct contact with the eyes is likely to cause corneal damage, especially if not washed away immediately. Careful ophthalmologic evaluation is recommended and the possibility of the local corticosteroid therapy should be considered. Attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided.In the event of severe distension of the stomach or esophagus due to gas formation,insertion of a gastric tube may be required.The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort.

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5. FIRE - FIGHTING MEASURES

Suitable extinguishing media: Use water or water fog only to fight fire where hydrogen peroxides is involved.Carbon dioxide and dry chemical may also be used.

Exposure hazard: Spontaneous combustion can occur if allowed to remain in contact with oxidizable materials. Drying product on clothing or combustible material can cause fire. Do not allow temperature of storage tank to rise above 38^0C. Do not heat solution to concentration of 74 % or greater. Mixtures with combustible materials may be explosive.

Hazardous combustion products: Oxygen, which supports combustion and may intensify fire.

Protection of fire-fighters: Any tank or container surrounded by fire should be flooded with plenty of water for cooling.Wear full protective clothing and self-contained breathing apparatus.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep unnecessary and unprotected personnel away from entering.
Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal equipment. Provide engineering control measures to keep airborne concentrations below exposure limits In case of accidental spills or airborne concentrations higer than 10 ppm, evacuate all personnel from the affected area.

Environmental precautions: Prevent from contamination the ground and surface water by isolating the hazard area. Contain and recover when is possible. Dispose according to all applicable federal state or local environment regulations.

Methods of cleaning up: Dilute with a large volume of water and hold in a diked area until the material is decomposed. Isolate the contaminated area with soil, sand or other absorbant material. The material may be destroyed with sodium metabisulfite and sodium sulfite after diluting to 5-10% hydrogen peroxide. Combustible materials exposed to hydrogen peroxide should immediately submerged in or rinsed with large amount of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood or other combustible materialto ignite and result in a fire.

Other information: Do not absorb in saw-dust or other combustible absorbent.

7. HANDLING AND STORAGE

Handling: Protect containers against physical damage. When working personnel are required to handle hydrogen peroxid, complete protective clothing including self-contained breathing apparatus are provided.Avoid excesive heat and contamination. Contamination may cause descompozition and generating oxygen gas which could result in high pressure and possible container rupture.
Hydrogen peroxid should be stored only in vented containers andshould be transported only in prescribed manner.Never return unused hydron peroxide to original container. Empty drums should be triple reused with water before discarding. Utensils used for handling hydrogen peroxide should be made only of glassy, stainless steel, aluminium or plastic.

Storage: Store only if stabilized in vented containers. Store containers tightly closed in cool, dry, dark and well-ventilated area of non-combustible construction away from heat and incompatible substances: combustible and reducing substances, strong bases, metals.
The hydrogen peroxide is stored or transported only in dedicated containers/tanks.
Do not deposit on wood panels containers/tanks with hydrogen peroxide.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits: ACGIH (TWA) 1ppm
OSHA (PEL) 1ppm

Engineering control: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emission of the contaminant at its source, preventing dispersion of it into the general work area.

Respiratory protection: If containers in excess of 10ppm are expected use approved self-contained breathing apparatus. Do not use oxidizable sorbents such as activated carbon.

Hand protection: Wear chemical potective gloves (made from PVC , nitrile or neoprene).

Eye /face protection : Chemical splash goggles and/or face shield must be worn when possibility exist for eye contact due to splashing or spraying liquid. Do not used contact lenses. Emergency wash fountains and quick-drench facilities in work area.

Skin protection: Wear impervious clothing including boots, apron or coveralls as appropriate to prevent skin contact. Do not wear any form of boot or overboots made from nylon or nylon blends. Do not use cotton, wool or leather, as these materials react rapidly with higher concntration of hidrogen peroxide.

Other precaution: Maintain shower, eye wash fountain facility in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Properties for	**30%**	**35%**	**50%**	**60%**
General information				
Appearance		Coulorless liquid		
Odor		pungent		
Important health, safety and environmental informations				
pH	2,0-3,5	2,0-3,5	1,0-3,0	1,0-3,0
pH (1% solution)	5,0-6,0	5,0-6,0	5,0-6,0	5,0-6,0
Boiling point	106^{0}C	108^{0}C	114^{0}C	125^{0}C
Flammability		non-inflammable		
Oxidizing properties			Strong oxidizer	
Vapours pressure at 30^{0}C	25mmHg	23mmHg	18mmHg	15mmHG
Relative density (H_2O=1)	1,11	1,13	1,19	1,23
Solubility in H_2O, %	100%	100%	100%	100%
Partition coeficient octanol –water (log K_{ow})			N/A	
Viscosity,at 20 ^{0}C	1,07 mPa s		1,17 mPa s	
Vapour density (aer=1)			1,0	
Evaporate rate (butyl acetat e=1)	aprox. 1	aprox. 1	aprox. 1	aprox. 1
Other information				
Melting point	-26^{0}C	-33^{0}C	-52^{0}C	-56^{0}C
Autoignition temperature		N/A		

10. STABILITY AND REACTIVITY

Chemical stability: Stable. Hydrogen peroxide of various concentrations is unstable in presence of catalytic contaminations, heat sources and UV light. Stability is reduce too when pH is above 4.0. For minimizing decomposition, commercial products are stabilized.

Condition to avoid: Heat, UV radiation, incompatible.

Material to avoid: Reducing agents, wood, paper and other combustible, iron,other heavy metals, copper alloys and caustic.

Hazardous descomposition products: Oxigen which support combustion.

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11. TOXICOLOGICAL INFORMATION

Animal toxicity data

LD_{50}	*oral-rat*	1232 mg/kg for H_2O_2 35 %
LD_{50}	*oral-rat*	841 mg/kg for H_2O_2 60 %
LD_{50}	*dermal-rabbit*	>2000 mg/kg for H_2O_2 35 %
LD_{50}	*inhalation -rat*	2000mg/m^3/4 h

Acute toxicity

Inhalation: Corrosive and irritating to the upper and the lower respiratory tract and all mucosal tissue. Symptoms include caugh, dizziness, headache, laboured breathing, nausea, shortness of breath, sore throat.

Skin contact: Corrosive and highly irritant to the skin and all living tissue. Hydrogen peroxide can cause serious burns exhibit severe pain, redness and possible swelling

Eye contact: Extremely irritating/corrosive. Contact with the liquid or vapors cause painful, redness, blurred vision and sever deep burns.

Chromic effects*:* Over exposure may cause dermatites, eczema, conjuctivitis, keratitis.

Other effects*:* No carcinogenicity are reported (literature data).

CMR effects:
Carcinogenity: Not classifiable as carcinogenetic by IARC.
Mutagenicity: No mutagenic effect.
Toxicity for Reproduction: Not affect reproductive parameters.

12. ECOLOGICAL INFORMATION

Ecotoxicitity

FIsh	*Pimephales promelas*	LC_{50}=16,4 mg/l/96h
	Channel catfish	LC_{50}= 37,4 mg/l/96h
Daphnia	*Daphnia magna*	EC_{50}= 7,7mg/l/24h
	Daphnia pulex	EC_{50}= 2,4mg/l/4h
Algae	*Nitzchia closterium*	EC_{50}= 0,85mg/l/96 h ([n ap` s`rat`)

Mobility: Due to high water solubility and low vapour pressure hydrogen peroxide will be found mostly in aquatic environment.

Persistence and degradability: Accidental release in soils or waters causes organic material oxidation. In fresh water half life is 8 hours from to 20 days; in air is 10-20 hours ; in soil the half life depend on microbiological activity and metalic impurities, varying betwen several minutes to several hours.

Bioaccumulative potential: Hydrogen peroxide does not bioaccumulate.
PBT assessment: Not applicable.

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13. DISPOSAL CONSIDERATION

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

Packaging treatment: The empty containers, tank cars and tank trucks are washed with plenty of water and finally with demineralized water.

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14. TRANSPORT INFORMATION

Hydrogen Peroxide, packaged in tank cars and tank trucks made from aluminum, stailess steel 304 L or 316 L type, in containers or drums made from high density polyethylene, equiped with vent valve. Hydrogen Peroxide solution can be shipped according to transport regulations for dangerous goods, hazard class 5.1, Oxidizing substances

Transport Labeling

Label no.5.1
Oxidizing substances

Label no.8
Corrosive substances

RID/ADR

UN No.		2014
Proper shipping name		Hydroegen Peroxide, Aqueous Solution, with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)
Hazard class		5.1
Subsidiary risk	8	
UN Packing Group		II
Classification code		OC1
Danger panel *58/2014*	(Hazard Identification No.	58)
	(UN Identification No	2014)

IMDG/IMO

UN No.	2014
Hazard class	5.1
Subsidiary risk	8
UN Packing Group	II
Proper shipping name	Hydroegen Peroxide, Aqueous Solution, with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)
EmS No.	F-H, S-Q

IATA/IT-ICAO

Proper shipping name	Hydroegen Peroxide, Aqueous Solution, with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)
UN No.	2014
Hazard class	5.1
Subsidiary risk	8
UN Packing Group	II
IATA Label	Oxidizer, Corrosive
Packaging Note Passenger	501
Packaging Note Cargo	506
Max. Quantity Passenger	1 l
Max. Quantity Cargo	5 l

15. REGULATORY INFORMATION

Hydrogen Peroxide is classified and labeled under Directive 67/548/EEC, Annex I.
This product is listed on EINECS, EC No : 231-765-0.

EC Classification	EC Index No. 008-003-00-9 R5 O; R8 C; R35 Xn; R20/22

Labeling

Hazard Symbol	**O, C**	Oxidizer, Corrosive
Risk phrases	**R5**	Heating may cause an explosion.
	R 8	Contact with combustible material may cause fire.
	R 35	Cause sever burns.
	R20/22	Harmful by inhalation and if swallowed.
Safety phrases	**S 17**	Keep away from combustible material.
	S 26	In case of contact with eye, rinse immediately with plenty of water and seek medical advice.
	S 28	After contact with skin, rinse immediately with plenty of water and soap.
	S 36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	S 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. Other informations

List of relevant R-phrases (see chapter 3)

R 8	Contact with combustible material may cause fire.
R 35	Cause sever burns.
R20/22	Harmful by inhalation and if swallowed.

Precautions to be taken in handling and storing: Keep well ventilated the areas where solution of hydrogen peroxide is stored and handled.

Work hygienic practices: Avoid direct contact of substance with skin/eyes. Avoid the exposure of personnel with dermatological affections.

Interdictions: **Do not drink or eat** in working area.
Do not smoke in or near working area.

The use of open flame in working areas is prohibited.

MSDS Revisions: This Material Safety Data Sheet is made in accordance to Regulation (EC) no.1907/2006 REACH and will replace the previous version 4 dated May 10, 2007.

Revised information:
TÜV mark for Quality-Environmental Integrated System was replaced with the new one, remited by TÜV Management GmbH.

Uses and Restrictions: Advice in this document relates only to product as originally supplied. Other derivative chemicals will have different properties and hazard.
Sources of key data uses to compile the data sheet:
EC Directive 67/548/EC resp. 99/45/EC as amended in each case.
EC Directive 2001/58/EC as amended in each case.
EC Directive 2000/39/EC as amended in each case.
Transport regulations according to ADR, RID, IMDG, ATA as amended in each case.

This MSDS has been elaborated in accordance with Regulation (EC) No.1907/2006 REACH.
The information contained here in is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.
This MSDS cannot cover all possible situations which the user may experience during handling and processing. Each aspect of the user's operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained within this MSDS should be provided to the user's employees or customers.