

1. Identification of substance

Product name:	Hydrogen Peroxide Reagent (H ₂ O ₂ reagent)
Application:	reagent for colorimetric determination of hydrogen peroxide
Product Type:	Diluted Sulphuric Acid (up to 3 % by Wt) with titanium salt
Supplier:	Labo Derva n.v. Lochtemanweg 77 3550 Heusden-Zolder Belgium +32 11 452101 info@laboderva.be

2. Hazard identification

Hazard designation:



Xi Irritant

GHS label elements:



Warning

3.2/2 - Causes skin irritation

Prevention:

Do not breathe dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Immediately call a POISON CENTER or doctor/physician.
 Specific treatment (see label).
 If eye irritation persists: Get medical advice/attention.
 Wash contaminated clothing before reuse.

Storage:

Store locked up.







Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations

3. Composition/information on ingredients

Chemical characterization

Description: Preparation contains anorganic and organic compounds.

Dangerous components:		
CAS: 7664-93-9 EINECS: 231-639-5 EC Number: 016-020-00-8	Sulphuric acid  C  Danger	≤ 3% (w)
CAS: 14402-67-6 EINECS: 238-475-3	Potassium bis(oxalato)oxotitanate(IV) dihydrate  Xn  Warning	≤ 1% (w)
CAS: 6381-92-6 EINECS: 205-358-3	EDTA Disodium Salt  Xn  Warning	≤ 0.05% (w)
CAS: 14402-67-6 EINECS: 231-791-2	Water	95% (w)

4. First-aid measures

General information :	Instantly remove any clothing soiled by the product.
After inhalation:	Mist: Remove to fresh air immediately. If breathing is difficult, give artificial respiration with oxygen. Observe person for 24 hrs (damage on mucous membranes of respiratory tract and lungs).
After skin contact:	Flush with large amounts of water for at least 15 minutes, remove any contaminated clothing and do not wear again until cleaned. If liquid is splashed on shoes, remove and discard if they contain leather.
After eye contact:	Rinse opened eye for several minutes (at least 15 min) under running water. Call a doctor immediately.
After swallowing:	Give large quantities of water or milk. DO NOT induce vomiting, then consult physician. Rinse mouth with water. Never give anything by mouth to an unconscious person.
Advice to doctor:	Treatment for 3% sulfuric acid an titanium salts (>1%)

5. Fire-fighting measures

Suitable extinguishing agents:	Carbon dioxide
Special hazards caused by the material, its products of combustion or resulting gases:	
	Formation of toxic gases is possible during heating or in case of fire. nitrous gases Sulphur oxides (SO _x)
Protective equipment:	Wear self-contained breathing apparatus. Wear full protective suit.
Additional information:	Ambient fire may liberate hazardous vapours. Collect contaminated fire fighting water separately. It must not enter drains. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6. Accidental release measures

Person-related safety precautions: Wear protective equipment.
Keep unprotected persons away.
Ensure adequate ventilation

Measures for environmental protection:

Do not allow product to reach sewage system or water bodies.

Measures for cleaning/collecting:

Ensure adequate ventilation.
Neutralize with diluted sodium hydroxide solution or by throwing on lime sand, lime or sodium carbonate.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose of contaminated material as waste according to item 13.

7. Handling and storage

Storage and transport:

Classified as Corrosive dangerous substance for transport. Refer to relevant regulations for storage and transportation. Not to be loaded with explosives, dangerous when oxidizing agents, organic peroxides, toxic substances, radioactive substances, foodstuffs and foodstuff empties, however exemptions may apply.

This material is a scheduled poison and is a corrosive liquid and must be stored, maintained and used in accordance with the relevant regulations.

Store away from organic and other combustible materials, oxidizing agents and foodstuffs. Highly reactive towards metals in the presence of moisture liberating hydrogen gas. Use with caution in mixing with water due to some heat evolution that causes possibly spattering. Keep containers closed at all times. Check regularly for leaks.

Spills and disposal:

Clean up immediately. Wear protective equipment to protect skin, eyes, feet, hands and palms and to prevent inhalation of acid mist. Absorb with dry earth, or sand or dilute carefully with water, then neutralize with lime or soda ash. Wash area down with copious quantities of water. Do not drain into sewers. Collect residue in a container labeled as containing hazardous waste. Dispose off as hazardous waste.

Fire / explosion hazard:

Not combustible. However if involved in a fire, will emit toxic fumes including those of sulfuric acid fumes and sulfur dioxide and Titanium Dioxide. Fire fighters to wear self-

contained breathing apparatus. Heating can cause expansion or decomposition leading to violent rupture of containers.

Extinguishing media: water fog, foam, dry agent (carbon dioxide, dry chemical powder).

Other precautions:

Sulphuric acid is highly corrosive to most metals.

Avoid contaminating waterways.

Sulphuric acid is soluble in water and remains indefinitely in the environment as Sulphate.

Large discharges may contribute to the acidification of water and be fatal to aquatic life and soil micro-organisms.

Large discharges may contribute to the acidification of effluent treatment systems and injure sewage treatment organisms.

Subsidiary risk:

The international agency for research on cancer (IARC) has classified "strong inorganic acid mist containing sulphuric acid" as a category carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulphuric acid or sulphuric acid solutions. Inorganic acid mist (sulphuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may however result in the generation of sulphuric acid mist.

8. Exposure controls/personal protection

Additional information about design of technical systems:

No further data; see item 7.

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Personal protective equipment:

General protective and hygienic measures:

Avoid contact with the eyes and skin.
Do not eat, drink or smoke while working.

Breathing equipment:

None required under normal conditions.

Protection of hands:

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

Material of gloves: nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Value for the permeation: Level ≥ 6 (480 min)

Eye protection: Tightly sealed safety glasses.

Body protection: Protective work clothing.

9. Physical and chemical properties

Form:	Fluid
Colour:	Colourless
Odour:	Odourless
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	100°C
Flash point:	Not applicable
Danger of explosion:	Product is not explosive.
Density at 20°C:	Not determined
Solubility in / Miscibility with Water:	Fully miscible
pH-value at 20°C:	1
Solvent content:	
Organic solvents:	0.0 %
Water:	< 90 %
Solids content:	> 1 %

10. Stability and reactivity

Thermal decomposition / conditions to be avoided:

To avoid thermal decomposition do not overheat.

Materials to be avoided:

- ammonia (NH₃)
- alkalis
- acids
- metals
- combustible substances
- organic solvents
- oxidizing agents

Dangerous reactions:

- Corrosive action on metals
- Reacts with metals forming hydrogen
- Forms hydrogen in aqueous solution with metals
- > Explosive
- Reacts with organic substances

Dangerous products of decomposition:

- nitrous gases
- Sulphur oxides (SO_x) see chapter 5

11. Toxicological information

Acute toxicity: Quantative data on toxicity not available

LD/LC50 values that are relevant for classification:

7664-93-9 sulphuric acid

- Oral LD50 2140 (25%) mg/kg (rat)
- Inhalative LC 50 510 (pure) mg/m³/2h (rat)

14402-67-6 Potassium bis(oxalato)oxotitanate(IV) dihydrate

No data available

6381-92-6 EDTA Disodium Salt

Oral LD50 2000 mg/kg (Rat)

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritant effect.

Sensitization: No sensitizing effect known.

Experience with humans: May cause lung damages.

Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version: Irritant

12. Ecological information

Information about elimination (persistence and degradability):

Quantitative data on the ecological effect of this product are not available

The following statements refer to the individual components.

Ecotoxicological effects:

7664-93-9 sulphuric acid	Daphnia EC50 29 mg/l/24h (Daphnia magna)
	LC50 16-29 mg/l/96h (Oncorhynchus mykiss)

Remark:

Toxic for fish:	sulphates > 7 g/l Forms corrosive mixtures with water even if diluted. toxic for fish toxic for algae
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Bacterial toxicity:	sulphates toxic > 2.5 g/l
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Remark:	neutralization possible
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General notes:

Do not allow product to reach ground water, water bodies or sewage system.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms.

13. Disposal considerations

Product:

Recommendation:	Hand over to disposers of hazardous waste.
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European waste catalogue:

16 05 06 laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleaning agent: Water, if necessary with cleaning agent.

14. Transport information

Land transport ADR/RID (cross-border)

ADR/RID-GGVS/E Class: -

Maritime transport IMDG:

IMDG Class: -

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: -

15. Regulatory information

Code letter and hazard designation of product: Xi Irritant

Risk phrases:

R36/38 Irritating to eyes and skin.

Safety phrases:

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

GHS:

Signal Word: Warning

Hazard Statements:

H319 - Causes serious eye irritation

H315 - Causes skin irritation

H290 - May be corrosive to metals

Precautionary Statements - EU (§28, 1272/2008):

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

P234 - Keep only in original container

16. Other information

Abbreviations and acronyms:

EC50:	effective concentration, 50 percent (in vivo)
ADR:	Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID:	Reglement internationale concernent le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG:	International Maritime Code for Dangerous Goods
IATA:	International Air Transport Association
IATA-DGR:	Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO:	International Civil Aviation Organization
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals
LC50:	Lethal concentration, 50 percent
LD50:	Lethal dose, 50 percent