

Safety Data Sheet
 acc. to OSHA HCS

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Printing date 04/14/2018
 Reviewed on 04/12/2018
 Version number: 4

1 Identification

- **Product identifier**
- **Trade name:** Hydrogen Peroxide 35 %
- **Article number:** 147145
- **Application of the substance / the mixture** Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 AppliChem GmbH
 Ottoweg 4
 D-64291 Darmstadt
- **Information department:** Dept. Compliance
- **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

Tel.: +49 (0)6151 93570
 Fax.: +49 (0)6151 935711
 msds@applichem.com

2 Hazard(s) identification

- **Classification of the substance or mixture**
 Acute Tox. 4 H302 Harmful if swallowed.
 Skin Corr. 1A H314 Causes severe skin burns and eye damage.
 Eye Dam. 1 H318 Causes serious eye damage.
 STOT SE 3 H335 May cause respiratory irritation.
- **Label elements**
- **GHS label elements**
 The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**


 GHS05 GHS07
- **Signal word** Danger
- **Hazard-determining components of labeling:**
 hydrogen peroxide solution
- **Hazard statements**
 H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H335 May cause respiratory irritation.
- **Precautionary statements**
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 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/doctor.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3
 Fire = 3
 Reactivity = 0

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The substance possesses oxidizing properties.

• **HMIS-ratings (scale 0 - 4)**

| | | |
|------------|---|----------------|
| HEALTH | 3 | Health = 3 |
| FIRE | 3 | Fire = 3 |
| REACTIVITY | 0 | Reactivity = 0 |

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** aqueous solution

• **Dangerous components:**

| | | |
|-----------|----------------------------|----------|
| 7722-84-1 | hydrogen peroxide solution | >30-≤40% |
|-----------|----------------------------|----------|

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately remove any clothing soiled by the product.
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth.
make victim drink water (maximum of 2 drinking glasses)
Seek medical treatment.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Water spray
- **For safety reasons unsuitable extinguishing agents:**
Foam
Extinguishing powder
Sand
Carbon dioxide
- **Special hazards arising from the substance or mixture**
Non-combustible.
Has a fire-promoting effect due to release of oxygen.

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(Contd. of page 2)

- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Avoid substance contact.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Ensure adequate ventilation
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (AppliSorb).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

| | | |
|-----------|----------------------------|--------|
| 7722-84-1 | hydrogen peroxide solution | 10 ppm |
|-----------|----------------------------|--------|

- **PAC-2:**

| | | |
|-----------|----------------------------|--------|
| 7722-84-1 | hydrogen peroxide solution | 50 ppm |
|-----------|----------------------------|--------|

- **PAC-3:**

| | | |
|-----------|----------------------------|---------|
| 7722-84-1 | hydrogen peroxide solution | 100 ppm |
|-----------|----------------------------|---------|

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Provide ventilation for receptacles.
- **Information about storage in one common storage facility:**
Away from sources of ignition and heat.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect from exposure to the light.
- **Recommended storage temperature:** +15 - +25°C
- **Storage class:** 5.1 B
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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• **Control parameters**

• **Components with limit values that require monitoring at the workplace:**

7722-84-1 hydrogen peroxide solution

| | |
|-----|--|
| PEL | Long-term value: 1.4 mg/m ³ , 1 ppm |
| REL | Long-term value: 1.4 mg/m ³ , 1 ppm |
| TLV | Long-term value: 1.4 mg/m ³ , 1 ppm |

• **Additional information:** The lists that were valid during the creation were used as basis.

• **Exposure controls**

• **Personal protective equipment:**

• **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

• **Breathing equipment:**

Respiratory protection required when vapours/aerosols are generated.
Special gas filter NO-P3

• **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

• **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

• **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.

• **For the permanent contact gloves made of the following materials are suitable:**

Recommended thickness of the material: ≥ 0.6 mm
Natural rubber, NR
Value for the permeation: Level ≥ 480 min

• **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level ≥ 30 min

• **Eye protection:**



Tightly sealed goggles

• **Body protection:** Acid resistant protective clothing

9 Physical and chemical properties

• **Information on basic physical and chemical properties**

• **General Information**

• **Appearance:**

Form: Fluid
Color: Colorless

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- | | |
|--|--|
| · Odor: | slightly pungent |
| · pH-value at 20 °C (68 °F): | 2.7 |
| · Change in condition | |
| Melting point/Melting range: | Undetermined. |
| Boiling point/Boiling range: | 110 °C (230 °F) |
| · Flash point: | Not applicable. |
| · Auto igniting: | Product is not selfigniting. |
| · Danger of explosion: | see chapter 10 |
| · Vapor pressure at 20 °C (68 °F): | 1.9 hPa (1.4 mm Hg) |
| · Density at 20 °C (68 °F): | 1.13 g/cm ³ (9.43 lbs/gal) |
| · Solubility in / Miscibility with Water: | Fully miscible. |
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Water: | 65.0 % |
| VOC content: | 0.00 % |
| | 0.0 g/l / 0.00 lb/gl |
| · Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity** No dangerous reactions known.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Heating
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
Risk of explosion with:/Risk of ignition or formation of inflammable gases or vapors with: alkali metals, alkali salts, alkali hydroxides, alkaline earth metals, metals in powder form, metallic oxides, metallic salts, nonmetals, nonmetallic oxides, aldehydes, alcohols, amines, ammonia, hydrazine and derivatives, hydrides, combustible substances, ethers, acids, anhydrides, oxidizing agent, organic substances, peroxi compounds, impurities/dust, permanganates, organic solvents, organic nitro compounds, brass.
- **Hazardous decomposition products:** Oxygen
- **Additional information:**
light sensitive
heat-sensitive

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

| Components | Type | Value | Species |
|---|----------|-------------------|---------|
| 7722-84-1 hydrogen peroxide solution | | | |
| Oral | LD50 | 2,000 mg/kg (rat) | |
| Dermal | LD50 | 4,060 mg/kg (rat) | |
| Inhalative | LC50/4 h | 2,000 mg/l (rat) | |

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- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

• **Carcinogenic categories**

• **IARC (International Agency for Research on Cancer)**

| | | |
|-----------|----------------------------|---|
| 7722-84-1 | hydrogen peroxide solution | 3 |
|-----------|----------------------------|---|

• **NTP (National Toxicology Program)**

None of the ingredients is listed.

• **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:**

• **Type of test Effective concentration Method Assessment**

| | | | |
|-----------|--------------------------|--|--|
| EC50/72 h | 1.38 mg/l (Algae) | | |
| EC50/96 h | 16.4 mg/l (fish) | | |
| LC50/48 h | 2.4 mg/l (daphnia magna) | | |
| NOEC/72 h | 0.63 mg/l (Algae) | | |

7722-84-1 hydrogen peroxide solution

| | |
|------|----------------|
| EC50 | 35 mg/l (fish) |
|------|----------------|

- **Persistence and degradability** The product is easily biodegradable.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:**
When introduced properly, no impairments in the function of adapted biological waste-water-treatment plans are to be expected.
- **Other information:** Quantitative data on the ecological effect of this product are not available.
- **Additional ecological information:**
- **General notes:**
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow to enter waters, waste water, or soil.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- | | |
|---|--------------------------------------|
| · UN-Number | UN2014 |
| · DOT, ADR, IMDG, IATA | |
| · UN proper shipping name | Hydrogen peroxide, aqueous solutions |
| · DOT, ADR | HYDROGEN PEROXIDE, AQUEOUS SOLUTION |
| · IMDG, IATA | |
| · Transport hazard class(es) | |
| · DOT | |
|   | |
| · Class | 5.1 Oxidizing substances |
| · Label | 5.1, 8 |
| · ADR | |
|   | |
| · Class | 5.1 (OC1) Oxidizing substances |
| · Label | 5.1+8 |
| · IMDG | |
|   | |
| · Class | 5.1 Oxidizing substances |
| · Label | 5.1/8 |
| · IATA | |
|   | |
| · Class | 5.1 Oxidizing substances |
| · Label | 5.1 (8) |
| · Packing group | II |
| · DOT, ADR, IMDG, IATA | |
| · Environmental hazards: | |
| · Marine pollutant: | No |

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| | |
|---|--|
| <ul style="list-style-type: none"> • Special precautions for user • Danger code (Kemler): • EMS Number: • Segregation groups • Stowage Category • Stowage Code • Segregation Code | Warning: Oxidizing substances 58 F-H,S-Q Peroxides D SW1 Protected from sources of heat. SG16 Stow "separated from" class 4.1 SG59 Stow "separated from" permanganates SG72 See 7.2.6.3.2. |
| <ul style="list-style-type: none"> • Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| <ul style="list-style-type: none"> • Transport/Additional information: | |
| <ul style="list-style-type: none"> • ADR • Excepted quantities (EQ) | Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml |
| <ul style="list-style-type: none"> • IMDG • Limited quantities (LQ) • Excepted quantities (EQ) | 1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml |
| <ul style="list-style-type: none"> • UN "Model Regulation": | UN 2014 HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS, 5.1 (8), II |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

• **Section 355 (extremely hazardous substances):**

7722-84-1 hydrogen peroxide solution

• **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

• **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

• **Proposition 65**

• **Chemicals known to cause cancer:**

None of the ingredients is listed.

• **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

• **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

• **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

• **Carcinogenity categories**

• **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

• **TLV (Threshold Limit Value established by ACGIH)**

7722-84-1 hydrogen peroxide solution

A3

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• **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

• **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

• **Hazard pictograms**



GHS05 GHS07

• **Signal word** Danger

• **Hazard-determining components of labeling:**

hydrogen peroxide solution

• **Hazard statements**

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

• **Precautionary statements**

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

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/doctor.

• **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Department issuing SDS:** Dept. Compliance

• **Date of preparation / last revision** 04/14/2018 / 3

• **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3