SAFETY DATA SHEET
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

Product number
1208

REACH registration notes
All the ingredients are listed or exempt.

CAS number
7722-84-1

EU index number
008-003-00-9

EC number
231-765-0

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses
Cleaning agent. Disinfectant. Laboratory reagent.

Uses advised against
No specific uses advised against are identified. Use only for intended applications.

1.3. Details of the supplier of the safety data sheet
Supplier
Reagent Chemical Services
18 Aston Fields Road
Whitehouse Industrial Estate
Runcorn
Cheshire WA7 3DL

T: 01928 716903 (08.30 - 17.00)
F: 01928 716425
E: info@reagent.co.uk

1.4. Emergency telephone number
Emergency telephone
OHES Environmental Ltd 24-7
Tel. 0333 333 9939 (24 hour)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)

Physical hazards
Not Classified

Health hazards
Acute Tox. 4 - H302 Skin Corr. 1A - H314 Eye Dam. 1 - H318 STOT SE 3 - H335

Environmental hazards
Not Classified

2.2. Label elements
EC number
231-765-0
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

Pictogram

Signal word
Danger

Hazard statements
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary statements
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.
Rinse skin with water/ shower.
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.
P405 Store locked up.

Contains
HYDROGEN PEROXIDE SOLUTION ... %

Supplementary precautionary statements
P261 Avoid breathing vapour/ spray.
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P301+P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P321 Specific treatment (see medical advice on this label).
P363 Wash contaminated clothing before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards
This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>HYDROGEN PEROXIDE SOLUTION ... %</th>
<th>10-30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 7722-84-1</td>
<td>EC number: 231-765-0</td>
</tr>
<tr>
<td>REACH registration number: 01-2119494219-28-0000</td>
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</tr>
</tbody>
</table>

Classification
Ox. Liq. 1 - H271
Acute Tox. 4 - H302
Acute Tox. 4 - H332
Skin Corr. 1A - H314
Eye Dam. 1 - H318
STOT SE 3 - H335

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Ingredient notes
Acquisition, possession or use by the general public is restricted.

SECTION 4: First aid measures
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

4.1. Description of first aid measures

General information
Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Show this Safety Data Sheet to the medical personnel.

Inhalation
Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if symptoms are severe or persist.

Ingestion
Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention immediately.

Skin contact
Remove contaminated clothing and rinse skin thoroughly with water. Continue to rinse for at least 15 minutes. Get medical attention immediately.

Eye contact
Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse for at least 15 minutes. Get medical attention immediately.

Protection of first aiders
First aid personnel should wear appropriate protective equipment during any rescue.

4.2. Most important symptoms and effects, both acute and delayed

General information
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
Harmful if inhaled. May cause respiratory system irritation.

Ingestion
Harmful if swallowed. Stomach pain. Nausea, vomiting.

Skin contact
Causes burns. Pain or irritation.

Eye contact
Prolonged contact may cause burns. Causes serious eye damage. Corneal damage.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.

Specific treatments
No specific chemical antidote is known to be required after exposure to this product.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
Use fire-extinguishing media suitable for the surrounding fire. Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards
May cause or intensify fire; oxidiser.

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances: Oxygen.

5.3. Advice for firefighters

Protective actions during firefighting
Fight fire from safe distance or protected location. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Control run-off water by containing and keeping it out of sewers and watercourses.
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

Special protective equipment for firefighters
Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation.

For emergency responders
Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions
To prevent release, place container with damaged side up. Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up
Wear protective clothing as described in Section 8 of this safety data sheet. No smoking, sparks, flames or other sources of ignition near spillage. Small Spillages: Wipe up with an absorbent cloth and dispose of waste safely. Large Spillages: Absorb spillage with inert, damp, non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Wash thoroughly after dealing with a spillage.

6.4. Reference to other sections

Reference to other sections
For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions
Do not handle until all safety precautions have been read and understood. Avoid inhalation of vapours/spray and contact with skin and eyes. Eliminate all sources of ignition. Take precautionary measures against static discharge.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions
Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep away from oxidising materials, heat and flames. Protect from freezing and direct sunlight.

Storage class
Chemical storage.

7.3. Specific end use(s)

Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits
HYDROGEN PEROXIDE SOLUTION ... %

Long-term exposure limit (8-hour TWA): WEL 1 ppm 1.4 mg/m³
Short-term exposure limit (15-minute): WEL 2 ppm 2.8 mg/m³
WEL = Workplace Exposure Limit
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

DNEL
Industry - Inhalation; Short term local effects: 3 mg/m³
Industry - Inhalation; Long term local effects: 1.4 mg/m³
Consumer - Inhalation; Short term local effects: 1.93 mg/m³
Consumer - Inhalation; Long term local effects: 0.21 mg/m³

PNEC
- Fresh water; 0.0126 mg/l
- Marine water; 0.0126 mg/l
- Intermittent release; 0.0138 mg/l
- STP; 4.66 mg/l
- Sediment (Freshwater); 0.047 mg/kg
- Sediment (Marine water); 0.047 mg/kg
- Soil; 0.0023 mg/kg

8.2. Exposure controls

Protective equipment
- Provide adequate general and local exhaust ventilation.

Eye/face protection
- Wear chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection
- Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. The breakthrough time for any glove material may be different for different glove manufacturers. For exposure up to 8 hours, wear gloves made of the following material: Butyl rubber. Rubber (natural, latex). Nitrile rubber. Thickness: ~ 0.33 mm Frequent changes are recommended.

Other skin and body protection
- Wear apron or protective clothing in case of contact.

Hygiene measures
- Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes wet or contaminated. Care should be taken to avoid contact with contaminants when removing contaminated clothing. Contaminated clothing should be placed in a closed container for disposal or decontamination.

Respiratory protection
- If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P2. Check that the respirator fits tightly and the filter is changed regularly. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls
- Store in a demarcated bunded area to prevent release to drains and/or watercourses. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance
- Liquid.

Colour
- Colourless.

Odour
- Odourless.
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

Odour threshold: No information available.

pH: pH (concentrated solution): 2.7 @ 21°C pH (diluted solution): 6 @ 21°C 0.35%

Melting point: Approx. -33°C

Initial boiling point and range: 108°C @ 1013 hPa

Flash point: Scientifically unjustified.

Evaporation rate: No information available.

Evaporation factor: No information available.

Flammability (solid, gas): Not applicable.

Upper/lower flammability or explosive limits: Scientifically unjustified.

Vapour pressure: 48 Pa @ °C

Vapour density: No information available.

Relative density: Approx. 1.13 @ 20 @ °C

Bulk density: Not applicable.

Solubility (ies): Miscible with water.

Partition coefficient: log Pow: -1.57 Estimated value.

Auto-ignition temperature: Scientifically unjustified.

Decomposition Temperature: No information available.

Viscosity: 1.11 mPa s @ 20°C

Explosive properties: Not considered to be explosive.

Oxidising properties: Not known.

9.2. Other information

Particle size: No information available.

Molecular weight: 34

Volatile organic compound: No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity: The reactivity data for this product will be typical of those for the following class of materials: Oxidising agents.

10.2. Chemical stability

Stability: Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions: The following materials may react strongly with the product: Strong acids. Strong alkalis. Strong reducing agents.

10.4. Conditions to avoid

Conditions to avoid: Avoid heat, flames and other sources of ignition. Avoid freezing.

10.5. Incompatible materials
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

Materials to avoid
Avoid contact with the following materials: Strong acids. Strong alkalis. Reducing agents. Powdered metal.

10.6. Hazardous decomposition products
Decomposition at ambient temperatures may generate the following substances: Oxygen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects
The toxicity of this substance has been assessed during REACH registration.

Acute toxicity - oral
Notes (oral LD₅₀) No specific test data are available.
ATE oral (mg/kg) 1,818.18

Acute toxicity - dermal
Notes (dermal LD₅₀) No specific test data are available.

Acute toxicity - inhalation
Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.
ATE inhalation (vapours mg/l) 40.0

Skin corrosion/irritation
Animal data Dose: 0.5ml of 35% w/w solution, 4 hours, Rabbit Primary dermal irritation index: 1.6 (mean)

Serious eye damage/irritation
Causes serious eye damage.

Respiratory sensitisation
Not sensitising.

Skin sensitisation
Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation:: Positive without metabolic activation. REACH dossier information.
Genotoxicity - in vivo Chromosome aberration: Negative. REACH dossier information.

Carcinogenicity
Scientifically unjustified.

Reproductive toxicity
Reproductive toxicity - fertility Scientifically unjustified. No adverse effects to reproduction
Reproductive toxicity - development Scientifically unjustified. Not toxic to reproductive development.

Specific target organ toxicity - single exposure
STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure Industry - Dermal; Long term systemic effects 22 mg/kg/day NOEL = 2.03 ppmV/6hr/day, Inhalation, Rat

Aspiration hazard
Not anticipated to present an aspiration hazard, based on chemical structure.
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

Inhalation
Harmful by inhalation.

Ingestion
Harmful if swallowed. May cause chemical burns in mouth, oesophagus and stomach.

Skin contact
May cause serious chemical burns to the skin. Causes skin irritation.

Eye contact
Risk of serious damage to eyes. Severe irritation, burning and tearing. Profuse watering of the eyes.

Route of entry
Skin and/or eye contact

Target organs
No specific target organs known.

HYDROGEN PEROXIDE SOLUTION ... %

<table>
<thead>
<tr>
<th>Acute toxicity - inhalation</th>
<th>11.0</th>
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</thead>
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Ingestion
May cause chemical burns in mouth, oesophagus and stomach.

Eye contact
This product is strongly corrosive. Immediate first aid is imperative.

SECTION 12: Ecological Information

HYDROGEN PEROXIDE SOLUTION ... %

Ecotoxicity
The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

12.1. Toxicity

Toxicity
The product contains a substance which may have hazardous effects on the environment.

Acute toxicity - fish
LC50, 96 hours: 16.4 mg/l, Pimephales promelas (Fat-head Minnow)
REACH dossier information.

Acute toxicity - aquatic invertebrates
NOEC, 48 hours: 1 mg/l, REACH dossier information.

Acute toxicity - aquatic plants
EC50, 72 hours: 1.38 mg/l, Marinewater algae

Acute toxicity - microorganisms
EC50, 3 hours: > 1000 mg/l, Activated sludge

Acute toxicity - terrestrial
Scientifically unjustified.

Chronic toxicity - fish early life stage
Scientifically unjustified.

Chronic toxicity - aquatic invertebrates
NOEC, 21 days: 0.63 mg/l, Daphnia magna

Toxicity to terrestrial plants
Scientifically unjustified.

12.2. Persistence and degradability

Persistence and degradability
The product is readily biodegradable.

Phototransformation
Not available.
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

Stability (hydrolysis)  
Scientifically unjustified.

Biodegradation  
Water - Degradation (%) 99%; ~ 30 minutes

Biological oxygen demand  
Not available.

Chemical oxygen demand  
Not available.

12.3. Bioaccumulative potential  
Bioaccumulative potential  
Study scientifically unjustifiable.

Partition coefficient  
log Pow: -1.57 Estimated value.

12.4. Mobility in soil  
Mobility  
The product is soluble in water.

Adsorption/desorption  
Coefficient  
Scientifically unjustified.

Henry's law constant  
~ 0.00075 Pa m3/mol @ 20°C

Surface tension  
74.67 mN/m @ @ 20°C 37.33% solution

12.5. Results of PBT and vPvB assessment  
Results of PBT and vPvB assessment  
This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects  
Other adverse effects  
None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods  
General information  
The generation of waste should be minimised or avoided wherever possible. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

Disposal methods  
Reuse or recycle products wherever possible. Dispose of waste product or used containers in accordance with local regulations

SECTION 14: Transport information

14.1. UN number  
UN No. (ADR/RID)  
2014

UN No. (IMDG)  
2014

UN No. (ICAO)  
2014

14.2. UN proper shipping name  
Proper shipping name (ADR/RID)  
HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Proper shipping name (IMDG)  
HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Proper shipping name (ICAO)  
HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Proper shipping name (ADN)  
HYDROGEN PEROXIDE, AQUEOUS SOLUTION
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

14.3. Transport hazard class(es)
ADR/RID class 5.1
ADR/RID subsidiary risk 8
ADR/RID label 5.1 & 8
IMDG class 5.1
IMDG subsidiary risk 8
ICAO class/division 5.1
ICAO subsidiary risk 8

Transport labels

14.4. Packing group
ADR/RID packing group II
IMDG packing group II
ICAO packing group II

Transport in bulk according to Annex II of MARPOL and the IBC Code
Not applicable.

14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user
IMDG Code segregation group 1. Acids
EmS F-H, S-Q
Hazard Identification Number (ADR/RID) 58
Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations
Control of Substances Hazardous to Health Regulations 2002 (as amended).
Health and Safety at Work etc. Act 1974 (as amended).

EU legislation
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

Guidance  
Workplace Exposure Limits EH40.

Authorisations (Title VII Regulation 1907/2006)  
No specific authorisations are known for this product.

Restrictions (Title VIII Regulation 1907/2006)  
Restricted to industrial use and to professionals approved in certain EU Member States — verify where use is allowed.

15.2. Chemical safety assessment  
A chemical safety assessment has been carried out.

Inventories  
EU - EINECS/ELINCS  
All the ingredients are listed or exempt.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet  
ATE: Acute Toxicity Estimate.  
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstracts Service.  
DNEL: Derived No Effect Level.  
IATA: International Air Transport Association.  
IMDG: International Maritime Dangerous Goods.  
Kow: Octanol-water partition coefficient.  
PBT: Persistent, Bioaccumulative and Toxic substance.  
PNEC: Predicted No Effect Concentration.  
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.  
vPvB: Very Persistent and Very Bioaccumulative.  
LOAEL: Lowest Observed Adverse Effect Level.  
NOAEC: No Observed Adverse Effect Concentration.  
NOAEL: No Observed Adverse Effect Level.  
NOEC: No Observed Effect Concentration.  
DMEL: Derived Minimal Effect Level.

Classification abbreviations and acronyms  
Acute Tox. = Acute toxicity  
Aquatic Acute = Hazardous to the aquatic environment (acute)  
Aquatic Chronic = Hazardous to the aquatic environment (chronic)  
Eye Dam. = Serious eye damage  
Skin Corr. = Skin corrosion  
Skin Irrit. = Skin irritation  
STOT RE = Specific target organ toxicity-repeated exposure  
STOT SE = Specific target organ toxicity-single exposure

General information  
Only trained personnel should use this material.

Key literature references and sources for data  

Classification procedures according to Regulation (EC) 1272/2008  
Acute Tox. 4 - H302, Skin Corr. 1A - H314, Eye Dam. 1 - H318, STOT SE 3 - H335: Bridging principle (Dilution).

Revision date  
20/03/2018

Revision  
2

Supersedes date  
05/09/2012
HYDROGEN PEROXIDE 100 VOL (27.5% W/W)

SDS number 11802
SDS status Approved.

Hazard statements in full
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.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.