

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name IX 275
- Synonyms Hydroperoxide, Hydrogen dioxide
- Formula H₂O₂

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance/Mixture**

- Food and feed area disinfectants
- Water treatment
- Food processing aid
- Bleaching agents
- Oxidizing agents

1.3 Details of the supplier of the safety data sheet**Company**

SOLVAY CHEMICALS INTERNATIONAL SA
RUE DE RANSBEEK, 310
1120, BRUXELLES
BELGIUM
Tel: +32-2-2642111
Fax: +32-2-2641802

E-mail address

manager.sds@solvay.com

1.4 Emergency telephone number

+44(0)1235 239 671 [CareChem 24]

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****GHS Classification (UN)**

Acute toxicity, Category 4	H302: Harmful if swallowed.
Serious eye damage/eye irritation, Category 1	H318: Causes serious eye damage.
Short-term (acute) aquatic hazard, Category 2	H401: Toxic to aquatic life.

2.2 Label elements

GHS label elements (UN)

Hazardous products which must be listed on the label

- CAS-No. 7722-84-1 hydrogen peroxide

Pictogram



Signal word

- Danger

Hazard statements

- H302 Harmful if swallowed.
- H318 Causes serious eye damage.
- H401 Toxic to aquatic life.

Precautionary statements

General

- None

Prevention

- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear eye protection/ face protection.

Response

- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
- P305 + P351 + P338 + P310 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/doctor.

Storage

- None

Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

None known.

SECTION 3: Composition/information on ingredients

3.1 Substance

- Not applicable, this product is a mixture.

3.2 Mixture

Information on Components and Impurities

Chemical name	CAS-No.	GHS Classification	Concentration [%]
hydrogen peroxide	CAS-No. : 7722-84-1	Oxidizing liquids, Category 1 ; H271 Acute toxicity, Category 4 ; H302 Skin corrosion, Sub-category 1A ; H314 Serious eye damage, Category 1 ; H318 Specific target organ toxicity - single exposure, Category 3 ; H335 Short-term (acute) aquatic hazard, Category 2 ; H401 Long-term (chronic) aquatic hazard, Category 3 ; H412 Specific concentration limits: C: ≥ 70 %, Oxidizing liquids, Category 1; H271 C: $50 < 70$ %, Oxidizing liquids, Category 2; H272 C: ≥ 70 %, Skin corrosion, Category 1A; H314 C: $50 < 70$ %, Skin corrosion, Category 1B; H314 C: $35 < 50$ %, Skin irritation, Category 2; H315 C: $8 < 50$ %, Serious eye damage, Category 1; H318 C: $5 < 8$ %, Eye irritation, Category 2; H319 C: ≥ 35 %, Specific target organ toxicity - single exposure, Category 3; H335	$\geq 27.5 - \leq 27.7$

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

- Show this safety data sheet to the doctor in attendance.

In case of inhalation

- Move to fresh air.
- If symptoms persist, call a physician.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Call a POISON CENTER/doctor if you feel unwell.

In case of skin contact

- Remove and wash contaminated clothing before re-use.
- Wash off with soap and water.
- If symptoms persist, call a physician.

In case of eye contact

- Call a physician or poison control centre immediately.
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- Take victim immediately to hospital.

In case of ingestion

- Call a physician or poison control centre immediately.
- Take victim immediately to hospital.
- If swallowed, rinse mouth with water (only if the person is conscious).
- Do NOT induce vomiting.
- Artificial respiration and/or oxygen may be necessary.

- If victim is unconscious:
 - Artificial respiration and/or oxygen may be necessary.

- If victim is conscious:
 - If swallowed, rinse mouth with water (only if the person is conscious).
 - Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed**In case of inhalation****Symptoms**

- Nose bleeding
- sore throat
- Cough

Effects

- irritation of the upper respiratory tract

In case of skin contact**Symptoms**

- Redness
- Swelling of tissue

Effects

- Prolonged skin contact may cause skin irritation.

In case of eye contact**Symptoms**

- Redness
- Lachrymation
- Swelling of tissue

Effects

- Corrosive
- Causes severe burns.
- Small amounts splashed into eyes can cause irreversible tissue damage and blindness.

In case of ingestion**Symptoms**

- Nausea
- Abdominal pain
- Bloody vomiting
- Diarrhoea
- Suffocation
- Cough
- Severe shortness of breath

Effects

- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- Risk of respiratory disorder

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- Take victim immediately to hospital.
- Immediate medical attention is required.
- Consult with an ophthalmologist immediately in all cases.
- If swallowed
- Avoid gastric lavage (risk of perforation).
- Keep under medical supervision for at least 48 hours.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

- Water
- Water spray

Unsuitable extinguishing media

- None

5.2 Special hazards arising from the substance or mixture

- Decomposition will cause oxygen release which may intensify fire
- Contact with combustible material may cause fire.
- Contact with flammables may cause fire or explosions.
- Risk of explosion if heated under confinement.

5.3 Advice for firefighters**Special protective equipment for firefighters**

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.
- Wear chemical resistant oversuit

Further information

- Keep product and empty container away from heat and sources of ignition.
- Keep containers and surroundings cool with water spray.
- Approach from upwind.
- Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****Advice for non-emergency personnel**

- Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.

Advice for emergency responders

- Use personal protective equipment.
- Drying of this product on clothing or combustible materials may cause fire.
- Keep wetted with water.
- Prevent further leakage or spillage.
- Keep away from incompatible products

6.2 Environmental precautions

- Should not be released into the environment.
- If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

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

6.4 Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Use only in well-ventilated areas.
- Use only clean and dry utensils.
- Never return unused material to storage receptacle.
- Keep away from heat.
- Avoid inhalation, ingestion and contact with skin and eyes.
- Keep away from incompatible products

Hygiene measures

- Ensure that eyewash stations and safety showers are close to the workstation location.
- Take off contaminated clothing and shoes immediately.
- Wash contaminated clothing before re-use.
- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Keep only in the original container.
- Store in a receptacle equipped with a vent.
- Store in a well-ventilated place. Keep cool.
- Keep container closed.
- Keep in a bunded area.
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- Regularly check the condition and temperature of the containers.

- Keep away from:
- Incompatible products

Packaging material

Suitable material

- aluminium 99,5 %
- stainless steel 304L / 316L
- Approved grades of HDPE.

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Components with other occupational exposure limits**

Components	Value type	Value	Basis
Hydrogen peroxide	TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)

8.2 Exposure controls**Control measures****Engineering measures**

- Provide adequate ventilation.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures**Respiratory protection**

- Use respirator when performing operations involving potential exposure to vapour of the product.
- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Respirator with a vapour filter (EN 141)
- Recommended Filter type: ABEK-P2

Hand protection

- Impervious gloves
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Suitable material

- Nitrile rubber
- Break through time: > 480 min
- Glove thickness: 1.3 mm
- Nitrile/Neopren gloves
- Break through time: 190 min
- Glove thickness: 0.2 mm

Eye protection

- Chemical resistant goggles must be worn.
- If splashes are likely to occur, wear:
 - Tightly fitting safety goggles
 - Face-shield

Skin and body protection

- Impervious clothing
- If splashes are likely to occur, wear:
 - Chemical resistant apron
 - Boots
 - Suitable material
 - PVC
 - Natural Rubber

Hygiene measures

- Ensure that eyewash stations and safety showers are close to the workstation location.
- Take off contaminated clothing and shoes immediately.
- Wash contaminated clothing before re-use.
- When using do not eat, drink or smoke.

- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

<u>Appearance</u>	<u>Physical state:</u> liquid <u>Colour:</u> colourless
<u>Odour</u>	pungent
<u>Odour Threshold</u>	No data available
<u>Molecular weight</u>	34 g/mol
<u>pH</u>	2.0 (21 °C) H ₂ O ₂ 50 % pKa: 11.6 (25 °C)
<u>Melting point/freezing point</u>	<u>Freezing point:</u> -33 °C H ₂ O ₂ 35 %
<u>Initial boiling point and boiling range</u>	<u>Boiling point/boiling range:</u> 108 °C H ₂ O ₂ 35 %
<u>Flash point</u>	does not flash
<u>Evaporation rate (Butylacetate = 1)</u>	No data available
<u>Flammability (liquids)</u>	The product is not flammable.
<u>Flammability/Explosive limit</u>	<u>Explosiveness:</u> Not explosive With certain materials (see section 10).
<u>Auto-ignition temperature</u>	The product is not flammable.
<u>Vapour pressure</u>	1 hPa (30 °C) H ₂ O ₂ 50 %
<u>Vapour density</u>	1 H ₂ O ₂ 50 %
<u>Density</u>	<u>Bulk density:</u> Not applicable
<u>Relative density</u>	1.1 - 1.2
<u>Solubility</u>	<u>Water solubility:</u> completely soluble

<u>Partition coefficient: n-octanol/water</u>	log Pow: -1.57 Method: Calculation method
<u>Decomposition temperature</u>	≥ 60 °C Self-Accelerating decomposition temperature (SADT)
<u>Decomposition temperature</u>	< 60 °C Slow decomposition
<u>Viscosity</u>	<u>Viscosity, dynamic</u> : 1.17 mPa.s (20 °C) H2O2 50 %
<u>Explosive properties</u>	No data available
<u>Oxidizing properties</u>	Not considered as oxidizing

9.2 Other information

<u>Henry's Constant</u>	0.00075 Pa.m ³ /mol (20 °C) not significant, Air, Volatility
<u>Surface tension</u>	75.6 mN/m (20 °C) H2O2 50 %

SECTION 10: Stability and reactivity

10.1 Reactivity

- Decomposes on heating.
- Potential for exothermic hazard

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- Contact with combustible material may cause fire.
- Contact with flammables may cause fire or explosions.
- Contact with incompatible material may cause exothermic decomposition with gas release.
- Risk of explosion if heated under confinement.
- Fire or intense heat may cause violent rupture of packages.

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

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

Acute toxicity estimate : 431 mg/kg - Rat , male and female
 Test substance: Hydrogen peroxide
 Unpublished reports

Acute inhalation toxicity

LC50 - 4 h (vapour) > 0.17 mg/l - Rat
 Test substance: Hydrogen peroxide
 No mortality observed at this concentration.
 Unpublished reports

Acute dermal toxicity

Acute toxicity estimate 6,440 mg/kg - Rabbit
 Test substance: Hydrogen peroxide
 Unpublished reports

Acute toxicity (other routes of administration)

No data available

Skin corrosion/irritation

Not classified as irritating to skin

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

hydrogen peroxide

Does not cause skin sensitisation.
 not sensitising

Mutagenicity**Genotoxicity in vitro**

hydrogen peroxide

Ames test
with and without metabolic activationpositive
Published dataChromosome aberration test in vitro
with and without metabolic activationpositive
Unpublished reports**Genotoxicity in vivo**

hydrogen peroxide

In vivo micronucleus test - Mouse
Oral
Method: OECD Test Guideline 474negative
Unpublished reports**Carcinogenicity**

hydrogen peroxide

No data available

Toxicity for reproduction and development**Toxicity to reproduction/Fertility**

hydrogen peroxide

No toxicity to reproduction

Developmental Toxicity/Teratogenicity

hydrogen peroxide

No toxicity to reproduction

STOT**STOT - single exposure**

hydrogen peroxide

Exposure routes: Inhalation
Target Organs: Respiratory Tract
May cause respiratory irritation.**STOT - repeated exposure**

hydrogen peroxide

The substance or mixture is not classified as specific target organ toxicant,
repeated exposure according to GHS criteria.

hydrogen peroxide

Inhalation (vapour) 90-day - Rat
NOAEC: 7 ppm
Target Organs: Respiratory Tract
Method: OECD Test Guideline 413
Unpublished reports90-day - Rat
NOAEL: 100 ppm
Target Organs: Gastrointestinal tract
Method: OECD Test Guideline 408
drinking water
Unpublished reports

Experience with human exposure No data available

Aspiration toxicity No data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish

hydrogen peroxide

LC50 - 96 h : 16.4 mg/l - Pimephales promelas (fathead minnow)
semi-static test
Analytical monitoring: yes

Unpublished internal reports
Harmful to fish.

Acute toxicity to daphnia and other aquatic invertebrates

hydrogen peroxide

EC50 - 48 h : 2.4 mg/l - Daphnia pulex (Water flea)
semi-static test
Analytical monitoring: yes
Unpublished internal reports
Toxic to aquatic invertebrates.

Toxicity to aquatic plants

hydrogen peroxide

ErC50 - 72 h : 2.62 mg/l - Skeletonema costatum (marine diatom)
static test
Analytical monitoring: yes
Unpublished internal reports
Toxic to algae.

Toxicity to microorganisms

hydrogen peroxide

EC50 - 0.5 h : 466 mg/l - activated sludge
static test
Analytical monitoring: yes
Method: OECD Test Guideline 209
Unpublished internal reports

Chronic toxicity to fish

No data available

Chronic toxicity to daphnia and other aquatic invertebrates

hydrogen peroxide

NOEC: 0.63 mg/l - 21 Days - Daphnia magna (Water flea)
flow-through test
Analytical monitoring: yes
Published data
Harmful to aquatic invertebrates with long lasting effects.

12.2 Persistence and degradability

Abiotic degradation

No data available

Physical- and photo-chemical elimination

No data available

Biodegradation**Biodegradability**

hydrogen peroxide

Ready biodegradability study:
 Method: Degradation in sewage treatment plants
 The substance fulfills the criteria for ultimate aerobic biodegradability and ready biodegradability
 Inoculum: activated sludge
 Unpublished internal reports

Degradability assessment

hydrogen peroxide

The product is considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential**Partition coefficient: n-octanol/water**

hydrogen peroxide

Not potentially bioaccumulable

Bioconcentration factor (BCF)

hydrogen peroxide

Not potentially bioaccumulable

12.4 Mobility in soil**Adsorption potential (Koc)**

hydrogen peroxide

Adsorption/Soil
 Koc: 1.58
 Log Koc: 0.2
 Method: Structure-activity relationship (SAR)
 Unpublished reports

Known distribution to environmental compartments

hydrogen peroxide

Ultimate destination of the product : Water

12.5 Results of PBT and vPvB assessment

hydrogen peroxide

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects**Ecotoxicity assessment**

Short-term (acute) aquatic hazard	Toxic to aquatic life.
Long-term (chronic) aquatic hazard	Not classified due to data which are conclusive although insufficient for classification.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product Disposal**

- Limited quantity
- Dilute with plenty of water.
- Flush into sewer with plenty of water.
- Maximum quantity
- Contact manufacturer.
- Contact waste disposal services.
- In accordance with local and national regulations.

Advice on cleaning and disposal of packaging

- Empty containers.
- 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.

SECTION 14: Transport information**IMDG**

14.1 UN number	UN 2014
14.2 Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
14.3 Transport hazard class	5.1
Subsidiary hazard class:	8
Label(s):	5.1 (8)
14.4 Packing group	
Packing group	II
14.5 Environmental hazards	NO
Marine pollutant	
14.6 Special precautions for user	
EmS	F-H , S-Q

For personal protection see section 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

IATA

14.1 UN number	UN 2014
14.2 Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
14.3 Transport hazard class	5.1
Subsidiary hazard class:	8
Label(s):	5.1 (8)
14.4 Packing group	
Packing group	II
14.5 Environmental hazards	NO
14.6 Special precautions for user	
Packing instruction (cargo aircraft)	554
Max net qty/pkg	5.00 L
Packing instruction (passenger aircraft)	550
Max net qty/pkg	1.00 L

Remarks : IATA: permitted under 40%
For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Local regulations**

No data available

Notification status

Inventory Information	Status
United States TSCA Inventory	- All substances listed as active on the TSCA inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
Mexico INSQ (INSQ)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- Listed on Inventory
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)	- When purchased from a Solvay legal entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.

SECTION 16: Other information**Full text of H-Statements**

- 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.
- H335 May cause respiratory irritation.
- H401 Toxic to aquatic life.
- H412 Harmful to aquatic life with long lasting effects.

Key or legend to abbreviations and acronyms used in the safety data sheet

- TWA 8-hour, time-weighted average

Further information

- Distribute new edition to clients
- Update

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. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only

relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.