

INTEROX® ST-50 (H₂O₂ < 50 %)

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

1.1. Identification of the substance or mixture

Product name : INTEROX® ST-50 (H₂O₂ < 50 %)
Chemical Name : Hydrogen peroxide
Synonyms : Hydroperoxide, Hydrogen dioxide
Molecular formula : H₂O₂
Molecular weight : 34 g/mol

1.2. Use of the Substance/Mixture

Recommended use : - Bleaching agent
- Chemical industry
- Electronic industry
- Metal treatment
- Odour agents
- Oxidising Agents
- Textile industry
- Water treatment
- Pulp and paper

1.3. Company/Undertaking Identification

Address : SOLVAY INTEROX Pty Ltd
MCPHERSON STREET, 20-22
AUS- 2019 BANKSMEADOW

Telephone : 61293168000

Telefax : 61293166445

1.4. Emergency and contact telephone numbers

Emergency telephone number : +61 2801 44558 [Carechem 24]
E-mail address : manager.sds@solvay.com

2. HAZARDS IDENTIFICATION

Appearance : liquid
Colour : colourless
Odour : pungent

- Classified as hazardous according to criteria of NOHSC.
- Classified as dangerous goods according to the ADG Code
- Harmful if swallowed.
- Causes serious eye damage.
- Causes skin irritation.

- May cause respiratory irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name (CAS-No. / EC-No. / Annex-1)	Concentration (W/W)	Classification	R-phrases(s)
Hydrogen peroxide (7722-84-1 / 231-765-0 / 008-003-00-9)	< 50 %	O C Xn	R 5 R 8 R35 R20/22

4. FIRST AID MEASURES

4.1. 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 or doctor/ physician if you feel unwell.

4.2. 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.

4.3. Skin contact

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

4.4. 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.

4.5. 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.

5. FIREFIGHTING MEASURES

5.1. Suitable extinguishing media

- Water
- Water spray

5.2. Extinguishing media which shall not be used for safety reasons

- None.

5.3. Special exposure hazards in a fire

- Oxygen released in thermal decomposition may support combustion
- Contact with combustible material may cause fire.
- Contact with flammables may cause fire or explosions.
- Risk of explosion if heated under confinement.

5.4. Special protective equipment for firefighters

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.
- Wear chemical resistant oversuit
- Cool containers/tanks with water spray.
- Prevent fire extinguishing water from contaminating surface water or the ground water system.

5.5. Other information

- HAZCHEM Code: 2P

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

- Prevent further leakage or spillage if safe to do so.
- Keep away from Incompatible products.
- Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.
- Use personal protective equipment.
- Refer to protective measures listed in sections 7 and 8.

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 for cleaning up

- Dam up.
- Do not mix waste streams during collection.
- Soak up with inert absorbent material.
- Keep in suitable, closed containers for disposal.
- Never return spills in original containers for re-use.

7. HANDLING AND STORAGE

7.1. 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.

7.2. Storage

- 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 banded area.
- Keep away from Incompatible products.
- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- Regularly check the condition and temperature of the containers.
- Electrical equipment should be protected to the appropriate standard.

7.3. Specific use(s)

- For further information, please contact: Supplier

7.4. Packaging material

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

7.5. Other information

- Do not confine the product in a circuit, between closed valves, or in a container without a vent.
- In industrial installations, apply the rules for the prevention of major accidents (consult an expert).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure Limit Values

Hydrogen peroxide

- US. ACGIH Threshold Limit Values 02 2014
time weighted average = 1 ppm
- National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A) 08 2005
time weighted average = 1 ppm
time weighted average = 1.4 mg/m³
- Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment) 08 2005
Remarks: Listed
- National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A) 12 2011
time weighted average = 1 ppm
time weighted average = 1.4 mg/m³

8.2. Exposure controls

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

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Recommended Filter type:
 - NO
 - P3

8.2.1.2. Hand protection

- Impervious gloves
- Suitable material : PVC, Natural Rubber, butyl-rubber, Nitrile rubber
- 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).

8.2.1.3. Eye protection

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

8.2.1.4. Skin and body protection

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

8.2.1.5. Hygiene measures

- Eye wash bottles or eye wash stations in compliance with applicable standards.
- 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.

8.2.2. Environmental exposure controls

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information (appearance, odour)

Appearance	: liquid
Colour	: colourless
Odour	: pungent

9.2. Important health safety and environmental information

pH	: 2.02 (H ₂ O ₂ 50 %) <i>Temperature: 21 °C</i>
pKa	: pKa1= 11.62 <i>Temperature: 25 °C</i>
Boiling point/boiling range	: 108 °C (H ₂ O ₂ 35 %)
Flash point	: <i>Remarks: Not applicable</i>
Flammability	: <i>Remarks: The product is not flammable.</i>
Explosive properties	: <i>Explosion danger:</i> <i>Remarks: Not explosive</i> <i>Remarks: With certain materials (see section 10).</i>
Oxidizing properties	: <i>Remarks: Non oxidizer</i>

Vapour pressure	:	1 mbar (H ₂ O ₂ 50 %) <i>Temperature: 30 °C</i>
Relative density / Density	:	1.1 - 1.2
Bulk density	:	<i>Remarks: Not applicable</i>
Solubility(ies)	:	Water <i>Remarks: completely miscible</i>
Partition coefficient: n-octanol/water	:	<i>log Pow:</i> -1.57 <i>Method: calculated value</i>
Viscosity	:	1.17 mPa.s (H ₂ O ₂ 50 %) <i>Temperature: 20 °C</i>
Vapour density	:	1 (H ₂ O ₂ 50 %)

9.3. Other data

Freezing point:	:	-33 °C (H ₂ O ₂ 35 %)
Auto-flammability	:	<i>Remarks: The product is not flammable.</i>
Surface tension	:	75.6 mN/m (H ₂ O ₂ 50 %) <i>Temperature: 20 °C</i>
Decomposition temperature	:	>= 60 °C <i>Remarks: Self-Accelerating decomposition temperature (SADT)</i> < 60 °C <i>Remarks: Slow decomposition</i>

10. STABILITY AND REACTIVITY

10.1. Stability

- Stable under recommended storage conditions.
- Decomposes on heating.
- Potential for exothermic hazard

10.2. Conditions to avoid

- Contamination
- To avoid thermal decomposition, do not overheat.
- Contact with combustible material may cause fire.
- Contact with flammables may cause fire or explosions.
- Risk of explosion if heated under confinement.
- Fire or intense heat may cause violent rupture of packages.

10.3. Materials to avoid

- Acids, Bases, Metals, Heavy metal salts, Powdered metal salts, Reducing agents, Organic materials, Flammable materials

10.4. Hazardous decomposition products

- Oxygen

11. TOXICOLOGICAL INFORMATION

11.1 Toxicological data

Acute oral toxicity

- LD50, Rat, 1,193 - 1,270 mg/kg (H₂O₂ 35 %)

Acute inhalation toxicity

- LC50, 4 h, Rat, > 0.17 mg/l (H₂O₂ 50 %), Remarks: vapour
- RD 50, mice, 665 mg/m³ (H₂O₂ 50 %), Remarks: Irritating to respiratory system.

Acute dermal toxicity

- LD50, Rabbit, > 2,000 mg/kg (H₂O₂ 35 %)

Skin irritation

- Rabbit, Skin irritation (H₂O₂ 35 %)

Eye irritation

- Rabbit, Severe eye irritation (H₂O₂ 10 %)

Sensitisation

- Guinea pig, Did not cause sensitisation on laboratory animals.

Chronic toxicity

- Oral, 90-day, Mouse, Target Organs: Gastrointestinal tract, Lowest observed effect level: 300 ppm, LOAEL, (Pure substance)
- Oral, 90-day, Mouse, NOEL: 100 ppm, NOAEL, (Pure substance)
- Inhalation, 28-day, Rat, Target Organs: Respiratory system, Lowest observed effect level: 10 ppm, LOAEL, vapour, (Pure substance)
- Inhalation, 28-day, Rat, NOEL: 2 ppm, NOAEL, vapour, (Pure substance)

Carcinogenicity

- Oral, Prolonged exposure, Mouse, Target Organs: duodenum, carcinogenic effects
- Dermal, Prolonged exposure, Mouse, Animal testing did not show any carcinogenic effects.

Genetic toxicity in vitro

- In vitro tests have shown mutagenic effects.

Genetic toxicity in vivo

- In vivo tests did not show mutagenic effects

Reproductive toxicity

- Substance is totally biotransformed (metabolised).
- study scientifically unjustified

11.2. Health effects

Inhalation

- irritation of the upper respiratory tract
- Symptoms: Nose bleeding, sore throat, Cough.

Eye contact

- Corrosive
- May cause irreversible eye damage.
- Symptoms: Redness, Lachrymation, Swelling of tissue.

Skin contact

- Corrosive
- Causes severe burns.
- Symptoms: Redness, Swelling of tissue.

Ingestion

- If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- Symptoms: Nausea, Abdominal pain, Bloody vomiting, Diarrhoea, Suffocation, Cough, Severe shortness of breath.
- Risk of: Respiratory disorder.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Fishes, Pimephales promelas, LC₅₀, 96 h, 16.4 mg/l (Pure substance)
- Fishes, Pimephales promelas, NOEC, 96 h, 4.3 mg/l (Pure substance)
- Crustaceans, Daphnia pulex, EC₅₀, 48 h, 2.4 mg/l (Pure substance)
Remarks: fresh water, semi-static test
- Crustaceans, Daphnia pulex, NOEC, 48 h, 1 mg/l (Pure substance)
Remarks: fresh water, semi-static test
- Crustaceans, Daphnia magna, NOEC, 21 Days, 0.63 mg/l (Pure substance)
Remarks: Reproduction Test

Chronic toxicity

- Algae, Skeletonema costatum, EC₅₀, Growth rate, 72 h, 2.6 mg/l (Pure substance)
- Algae, Skeletonema costatum, NOEC, 72 h, 0.63 mg/l (Pure substance)

12.2. Mobility

- Air, Volatility, Henry's law constant (H) = 0.75 mPa.m³/mol , 20 °C
Remarks: not significant
- Water
Remarks: considerable solubility and mobility
- Soil/sediments, log KOC:0.2
Remarks: non-significant evaporation and adsorption

12.3. Persistence and degradability

Abiotic degradation

- Air, indirect photo-oxidation, t 1/2 24 h
Conditions: sensitizer: OH radicals
- Water, redox reaction, t 1/2 120 h
Conditions: mineral and enzymatic catalysis, fresh water, salt water
- Soil, redox reaction, t 1/2 12 h
Conditions: mineral and enzymatic catalysis

Biodegradation

- aerobic, t 1/2 < 2 min
Conditions: biological treatment sludge
Remarks: Readily biodegradable.
- aerobic, t 1/2 from 0.3 - 5 d
Conditions: fresh water
Remarks: Readily biodegradable.
- anaerobic
Conditions: Soil/sediments
Remarks: Not applicable

- aerobic, t 1/2 12 h
Conditions: Soil
Remarks: Readily biodegradable.

12.4. Bioaccumulative potential

- Bioaccumulative potential: -1.57
Result: Does not bioaccumulate.

12.5. Other adverse effects

- No data available

12.6. Possible hazards (summary)

- No data available

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- 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.

13.2. Packaging treatment

- 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.

14. TRANSPORT INFORMATION

International transport regulations

- IATA-DGR

14.1. UN number	UN2014
14.2. UN proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
14.3. Transport hazard class(es)	
Hazard class	5.1
Labels	5.1 - Oxidizing substances 8 - Corrosive
14.4. Packing group	II
14.5. Environmental hazards	
14.6. Special precautions for user	

- IMDG

14.1. UN number	UN2014
14.2. UN proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION

14.3. Transport hazard class(es)

Hazard class	5.1
Labels	5.1 - Oxidizing substances 8 - Corrosive

14.4. Packing group

II

14.5. Environmental hazards

14.6. Special precautions for user

EmS	F-H S-Q
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- ADG

14.1. UN number

UN2014

14.2. UN proper shipping name

HYDROGEN PEROXIDE, AQUEOUS SOLUTION

14.3. Transport hazard class(es)

Hazard class	5.1
Labels	5.1 - Oxidizing substances 8 - Corrosive

14.4. Packing group

II

14.5. Environmental hazards

14.6. Special precautions for user

Hazchem Code	2P
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IATA: forbidden over 40 %

15. REGULATORY INFORMATION

15.1. Labels

- Hazardous components which must be listed on the label: Hydrogen peroxide
- Classified as hazardous according to criteria of NOHSC.

Symbol(s)	Xn	Harmful
R-phrase(s)	R22 R37/38 R41	Harmful if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes.
S-phrase(s)	S 1/2 S26 S28 S36/37/39 S45	Keep locked up and out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

15.2. Other information

- The percentage concentration of the solution has to be indicated next to the product name.

15.3. Inventory Information

USA. Toxic Substances Control Act (TSCA)	: -	In compliance with inventory.
Australia. Inventory of Chemical Substances (AICS)	: -	In compliance with inventory.
Canada. Domestic Substances List (DSL)	: -	In compliance with inventory.
Korea. Existing Chemicals Inventory (KECI (KR))	: -	In compliance with inventory.
EU list of existing chemical substances (EINECS)	: -	In compliance with inventory.
Japan. Inventory of Existing & New Chemical Substances (ENCS)	: -	In compliance with inventory.
China. Inventory of Existing Chemical Substances (IECSC)	: -	In compliance with inventory.
Philippine. Inventory of Chemicals and Chemical Substances (PICCS)	: -	In compliance with inventory.
New Zealand. Inventory of Chemicals (NZIOC)	: -	In compliance with inventory.
Mexico INSQ (INSQ)	: -	In compliance with inventory.

15.4. National regulatory information

- Expert judgement
- GHS Hazardous Chemical Information List (Hazardous Substances Information System (HSIS), as amended through September 2014)
- List of Designated Hazardous Substances (Hazardous Substances Information System (HSIS), as amended)
- SUSMP, Poisons to be labeled (Standard for Uniform Scheduling of Medicines & Poisons, No. 3, as amended thru SUSMP No. 3, Amd. 2, Aug. 8, 2012)

16. OTHER INFORMATION

16.1. Administrative information

- Update
This data sheet contains changes from the previous version in section(s): general revision
- Distribute new edition to clients

16.2. Text of R phrases mentioned in Section 3

- R 5: Heating may cause an explosion.
- R 8: Contact with combustible material may cause fire.
- R20/22: Harmful by inhalation and if swallowed.
- R35: Causes severe burns.

The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.