

SAFETY DATA SHEET

Revision Date 24.05.2013

INTEROX® FG 50

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifiers

Product name : INTEROX® FG 50
Chemical Name : Hydrogen peroxide
Other names : Hydroperoxide, Hydrogen dioxide
Molecular formula : H₂O₂
Type of product : Mixture

Identified uses / Uses advised against

Identified uses : Bleaching agent
Food processing aid

Manufacturer or supplier's details

Company : SOLVAY PEROXYTHAI LIMITED
Address : 16TH FL. WAVE PLACE, 55 WIRELESS RD
T. 10330 BANGKOK
Telephone : +6626106470
Fax : +66662/3673272
E-mail address : manager.sds@solvay.com
Emergency telephone number : +86 10 5100 3039 [CareChem 24]
+86 532-83889090 [NRCC]

2. HAZARDS IDENTIFICATION

GHS-Classification

This mixture is classified as dangerous according to Chinese legislation.

Physical Hazard

Hazard class	Hazard category	Route of exposure	H Phrases
Oxidizing liquids	Category 2		H272

Health hazard

Hazard class	Hazard category	Route of exposure	H Phrases
Skin corrosion	Category 1B		H314
Acute toxicity	Category 4	Oral	H302
Acute toxicity	Category 4	Inhalation	H332

Environmental hazards

Hazard class	Hazard category	Route of exposure	H Phrases
Acute aquatic toxicity	Category 2		H401
Chronic aquatic toxicity	Category 3		H412

GHS Label elements, including precautionary statements

Name(s) on label

Hazardous components : Hydrogen peroxide (50 %)

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Signal word:

Danger

Hazard symbols:Hazard statements:

May intensify fire; oxidiser.
 Causes severe skin burns and eye damage.
 Harmful if swallowed.
 Harmful if inhaled.
 Toxic to aquatic life.
 Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

Keep/Store away from clothing/ flammable /combustible materials.
 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Response

Wear protective gloves/ protective clothing/ eye protection/ face protection.
 Immediately call a POISON CENTER or doctor/ physician.
 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.
 Rinse skin with water/ shower.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 In case of fire: Use Water, Water spray for extinction.

Other hazards which do not result in classification

- none

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name:	Concentration
Hydrogen peroxide CAS-No.: 7722-84-1	ca. 50 %

Hazardous components

Substance name	Hazard class	Hazard category	Route of exposure	H Phrases
Hydrogen peroxide	Oxidizing liquids	Category 1		H271
	Acute toxicity	Category 4	Inhalation	H332
	Acute toxicity	Category 4	Oral	H302
	Skin corrosion	Category 1A		H314
	Acute aquatic toxicity	Category 2		H401
	Chronic aquatic toxicity	Category 3		H412

4. FIRST AID MEASURES

Description of necessary first-aid measures

If inhaled

- Move to fresh air.
- Oxygen or artificial respiration if needed.
- Victim to lie down in the recovery position, cover and keep him warm.
- Call a physician immediately.

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 skin contact

- Take off contaminated clothing and shoes immediately.
- Wash off immediately with plenty of water.
- Keep warm and in a quiet place.
- Call a physician or poison control centre immediately.
- Wash contaminated clothing before re-use.

If swallowed

- 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.

Most important symptoms/effects, acute and delayed

Inhalation

- Corrosive to respiratory system
- Symptoms: Breathing difficulties, Cough, pulmonary oedema, Nausea, Vomiting
- Repeated or prolonged exposure: Nose bleeding, chronic bronchitis

Skin contact

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

Eye contact

- Corrosive
- Causes severe burns.
- Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
- Symptoms: Redness, Lachrymation, 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

Indication of immediate medical attention and special treatment needed, if necessary

- Take victim immediately to hospital.
- Immediate medical attention is required.
- Consult with an ophthalmologist immediately in all cases.

- Burns must be treated by a physician.
- If swallowed
- Avoid gastric lavage (risk of perforation).
- Keep under medical supervision for at least 48 hours.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- Water
- Water spray

Unsuitable extinguishing media

- None.

Specific hazards arising from the chemical

- Oxidising
- Hazardous decomposition products formed under fire conditions.
- Oxygen
- Sustains combustion
- Contact with combustible material may cause fire.
- Contact with flammables may cause fire or explosions.
- Risk of explosion if heated under confinement.

Special protective actions for fire-fighters

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.
- Wear chemical resistant oversuit
- Cool containers / tanks with water spray.
- Keep product and empty container away from heat and sources of ignition.
- Approach from upwind.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel

- Prevent further leakage or spillage if safe to do so.
- Keep away from Incompatible products.

Advice for emergency responders

- Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.
- Use personal protective equipment.
- Drying of this product on clothing or combustible materials may cause fire.
- Keep wetted with water.

Environmental precautions

- Do not flush into surface water or sanitary sewer system.
- If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up

- Dam up.
- Do not mix waste streams during collection.
- Soak up with inert absorbent material.
- Dilute with plenty of water.

- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".
- Never return spills in original containers for re-use.

Reference to other sections

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

7. HANDLING AND STORAGE**Precautions for safe handling**

- Use only in well-ventilated areas.
- Before all operations, passivate the piping circuits and vessels according to the procedure recommended by the producer.
- Use only clean and dry utensils.
- Never return unused material to storage receptacle.
- May not get in touch with:
 - Organic materials
 - Keep away from Incompatible products.
 - Keep away from heat.

Conditions for safe storage, including any incompatibilitiesStorage

- Keep only in the original container.
- Store in a receptacle equipped with a vent.
- Store in a well-ventilated place. Keep cool.
- Keep in properly labelled containers.
- Keep container closed.
- Keep in a bunded area.
- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- Electrical equipment should be protected to the appropriate standard.
- Keep away from Incompatible products.
- Regularly check the condition and temperature of the containers.

Packaging material**Suitable material**

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

Specific use(s)

- For further information, please contact: Supplier

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters**Exposure Limit Values**Hydrogen peroxide**

- US. ACGIH Threshold Limit Values 03 2012
time weighted average = 1 ppm
- China. OELs (Occupational Exposure Limits for Hazardous Agents in the Workplace) (GBZ 2.1) 03 2008
time weighted average = 1.5 mg/m³
- China. OELs (Occupational Exposure Limits for Hazardous Agents in the Workplace) (GBZ 2.1) 2002
Remarks: Listed

Exposure controlsAppropriate engineering controls

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

Individual protection measures

Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- Respirator with a vapour filter (EN 141)
- Recommended Filter type: NO
- Self-contained breathing apparatus in case of: 1) large uncontrolled emissions, 2) insufficient oxygen, 3) the mask and cartridge do not give adequate protection.

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: PVC, Natural Rubber, butyl-rubber, Nitrile rubber

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

- Chemical resistant apron
- If splashes are likely to occur, wear: 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.

9. PHYSICAL AND CHEMICAL PROPERTIES**Physical and chemical properties**General Information

- | | |
|---------------------------|------------|
| · Appearance | liquid |
| · Colour | colourless |
| · Odour | odourless |
| · Molecular Weight | 34 g/mol |

Important health safety and environmental information

- | | |
|---------------------------------------|--|
| · pH | 2.02 (H ₂ O ₂ 50 %); 21 °C |
| · pKa | pKa1= 11.62 at 25 °C |
| · Melting point/freezing point | -0.43 °C (Pure substance)
-40.3 °C (H ₂ O ₂ 70 %) |
| · Boiling point/boiling range | 150.2 °C (Pure substance) |

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	125 °C (H2O2 70 %)
· Flash point	not applicable
· Evaporation rate	No data
· Flammability (solid, gas)	not applicable
· Flammability	The product is not flammable.
· Explosive properties	Not explosive With certain materials (see section 10).
· Vapour pressure	200 Pa (H2O2 70 %), at 30 °C 214 Pa (Pure substance), at 20 °C
· Vapour density	1.02
· Relative density	1.29 (H2O2 70 %) 1.44 (Pure substance), at 25 °C
· Bulk density	not applicable
· Solubility(ies)	no data available
· Solubility/qualitative	Soluble in:, Water
· Partition coefficient: n-octanol/water	log Pow: -1.57, Method: calculated value
· Auto-ignition temperature	not applicable
· Decomposition temperature	>= 60 °C, Self-Accelerating decomposition temperature (SADT) < 60 °C, Slow decomposition
· Viscosity	1.26 mPa.s (H2O2 70 %), at 20 °C 1.249 mPa.s (Pure substance), at 20 °C
· Oxidizing properties	Oxidizer
Other information	
· Surface tension	77.2 mN/m (H2O2 70 %) at 20 °C 80.4 mN/m (Pure substance) at 20 °C

10. STABILITY AND REACTIVITY

Reactivity

- Strong oxidizer. Contact with other material may cause fire.
- Decomposes on heating.
- Potential for exothermic hazard

Chemical stability

- Stable under recommended storage conditions.

Possibility of hazardous reactions

- 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.

Conditions to avoid

- Contamination
- To avoid thermal decomposition, do not overheat.

Materials to avoid

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

Hazardous decomposition products

- Oxygen

11. TOXICOLOGICAL INFORMATION**Acute toxicity**Acute oral toxicity

- LD50, rat, 801 - 872 mg/kg (H2O2 60 %)

Acute inhalation toxicity

- LC50, 4 h, rat, > 0.17 mg/l, vapour (H2O2 50 %)

Acute dermal toxicity

- LD50, rabbit, > 2,000 mg/kg (H2O2 70 %)

Skin corrosion/irritation

- rabbit, Corrosive (H2O2 50 %)

Serious eye damage/eye irritation

- rabbit, Corrosive (H2O2 50 %)

Sensitisation

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

Mutagenicity

- In vitro tests have shown mutagenic effects.
- In vivo tests did not show mutagenic effects

Carcinogenicity

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

Toxicity for reproduction

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

Specific target organ toxicity - single exposure

- Inhalation, mice, 665 mg/m³, Remarks: RD 50, Irritating to respiratory system., H2O2 50 %

Repeated dose toxicity

- Oral, 90-day, mouse, Target Organs: Gastrointestinal tract, 300 ppm, LOAEL (Pure substance)
- Oral, 90-day, mouse, 100 ppm, NOAEL (Pure substance)
- Inhalation, 28-day, rat, Target Organs: Respiratory system, 10 ppm, LOAEL, vapour (Pure substance)
- Inhalation, 28-day, 2 ppm, NOAEL, vapour (Pure substance)

Other information

- no data available

12. ECOLOGICAL INFORMATION**Toxicity**

- Fishes, Pimephales promelas, LC50, 96 h, 16.4 mg/l (Pure substance)
- Fishes, Pimephales promelas, NOEC, 96 h, 5 mg/l (Pure substance)
- Crustaceans, Daphnia pulex, EC50, 48 h, 2.4 mg/l, fresh water, semi-static test (Pure substance)
- Crustaceans, Daphnia pulex, NOEC, 48 h, 1 mg/l, fresh water, semi-static test (Pure substance)
- Crustaceans, Daphnia magna, NOEC, 21 Days, 0.63 mg/l, Reproduction Test (Pure substance)
- Algae, Skeletonema costatum, EC50, Growth rate, 72 h, 2.62 mg/l (Pure substance)
- Algae, Skeletonema costatum, NOEC, 72 h, 0.63 mg/l (Pure substance)
- Algae, Chlorella vulgaris, EC50, Growth rate, 72 h, 4.3 mg/l (Pure substance)
- Algae, Chlorella vulgaris, NOEC, 72 h, 0.1 mg/l (Pure substance)

Persistence and degradabilityAbiotic 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
Readily biodegradable.
- aerobic, t 1/2, from 0.3 - 5 d
Conditions: fresh water
Readily biodegradable.
- anaerobic
Conditions: Soil/sediments
not applicable
- aerobic, t 1/2, 12 h
Conditions: Soil
Readily biodegradable.

Bioaccumulative potential

- Bioaccumulative potential: log Pow -1.57,
Result: Does not bioaccumulate.

Mobility in soil

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

Other adverse effects

- no data available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods**

- 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.

Contaminated 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.

14. TRANSPORT INFORMATION**International transport regulations****· IATA-DGR**

UN number	UN 2014
Class	5.1
Packing group	II
Labels	5.1 - Oxidizing substances 8 - Corrosive
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION

· IMDG

UN number	UN 2014
Class	5.1
Packing group	II
Labels	5.1 - Oxidizing substances 8 - Corrosive
HI/UN No.	2014
EmS	F-H S-Q
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION

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· ADR

UN number	UN 2014
Class	5.1
Packing group	II
Labels	5.1 - Oxidizing substances 8 - Corrosive
HI/UN No.	58 / 2014
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION

· RID

UN number	UN 2014
Class	5.1
Packing group	II
Labels	5.1 - Oxidizing substances 8 - Corrosive
HI/UN No.	58 / 2014
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION

· ADN

UN number	UN 2014
Class	5.1
Packing group	II
Labels	5.1 - Oxidizing substances 8 - Corrosive
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION

- IATA: forbidden over 40 %

15. REGULATORY INFORMATION

Applicable Laws or Regulations

- Expert judgement
- List of Dangerous Goods (GB 12268-2005)
- Classification and Labelling of Commonly Used Dangerous Chemical Substances
- Dangerous Chemical Products (Public Notice of the State Administration of Work Safety)
- Explosive Precursor Hazardous Chemicals (Ministry of Public Safety, 2011 version, December 25, 2011)

Notification status

Inventory Information	Status
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
Inventory of Existing Chemical Substances (China) (IECS)	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. National Inventory of Chemical Substances (INSQ)	In compliance with inventory

16. OTHER INFORMATION**Full text of H-Statements referred to under section 3**

H271	·	May cause fire or explosion; strong oxidiser.
H302	·	Harmful if swallowed.
H314	·	Causes severe skin burns and eye damage.
H332	·	Harmful if inhaled.
H401	·	Toxic to aquatic life.
H412	·	Harmful to aquatic life with long lasting effects.

Other information

- Update
This data sheet contains changes from the previous version in section(s): LOGO

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.

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