

SAFETY DATA SHEET

Revision Date 21.05.2014

INTEROX® AG-DUAL 35

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifiers

Product name : INTEROX® AG-DUAL 35
Chemical Name : Hydrogen peroxide
Other names : Hydroperoxide, Hydrogen dioxide
Molecular formula : H₂O₂
Type of product : Mixture

Identified uses / Uses advised against

Identified uses : Disinfectants

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 : 001800 1 2066 6751 (internal) / +65 3158 1074 [Carechem24]

2. HAZARDS IDENTIFICATION

GHS-Classification

This mixture is classified as dangerous according to Thai legislation.

Health hazard

Hazard class	Hazard category	Route of exposure	H Phrases
Acute toxicity	Category 4	Oral	H302
Serious eye damage	Category 1		H318
Skin irritation	Category 2		H315
Specific target organ toxicity - single exposure	Category 3	Inhalation	H335

Environmental hazards

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

GHS Label elements, including precautionary statements

Name(s) on label

Hazardous components : Hydrogen peroxide (35 %)

Signal word:

Danger

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Hazard symbols:



Hazard statements:

Harmful if swallowed.
Causes serious eye damage.
Causes skin irritation.
May cause respiratory irritation.
Toxic to aquatic life.

Precautionary statements

Prevention Wear protective gloves/ protective clothing/ eye protection/ face protection.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Response IF ON SKIN: Wash with plenty of soap and water.
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Other hazards which do not result in classification

- None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name:	Concentration
Hydrogen peroxide CAS-No.: 7722-84-1	ca. 35 %

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 1		H314
	Specific target organ toxicity - single exposure	Category 3	Inhalation	H335
	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.
- 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.

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

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

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 delayedInhalation

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

Skin contact

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

Eye contact

- Corrosive
- May cause irreversible eye damage.
- 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.
- 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

- 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.

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.
- Prevent fire extinguishing water from contaminating surface water or the ground water system.

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.

Environmental precautions

- Should not be released into the environment.
- 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.
- Keep in suitable, closed containers for disposal.
- 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.
- 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.

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 container closed.
- Keep in a bunded area.
- Keep away from Incompatible products.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Regularly check the condition and temperature of the containers.
- Electrical equipment should be protected to the appropriate standard.

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 2013
time weighted average = 1 ppm

Exposure controlsAppropriate engineering controls

- Ensure 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.
- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Recommended Filter type: NO, P3

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).

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
- Suitable material
- PVC

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- Natural Rubber
- If splashes are likely to occur, wear: Apron, Boots

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.

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** pungent
- **Molecular weight** 34 g/mol

Important health safety and environmental information

- **pH** 2,02 (H₂O₂ 50 %); 21 °C
- **pKa** pKa1= 11,62 at 25 °C
- **Melting point/freezing point** -33 °C (H₂O₂ 35 %)
- **Boiling point/boiling range** 108 °C (H₂O₂ 35 %)
- **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** 1 mbar (H₂O₂ 50 %), at 30 °C
- **Vapour density** 1(H₂O₂ 50 %)
- **Relative density** 1,1 - 1,2
- **Bulk density** not applicable
- **Solubility(ies)** No data available
- **Solubility/qualitative** completely miscible (Water)
- **Partition coefficient: n-octanol/water** log Pow: -1,57, Method: calculated value
- **Auto-ignition temperature** The product is not flammable.
- **Decomposition temperature** >= 60 °C, Self-Accelerating decomposition temperature (SADT)

- **Viscosity** < 60 °C, Slow decomposition
1,17 mPa.s (H₂O₂ 50 %), at 20 °C
- **Oxidizing properties** Non oxidizer

Other information

- Surface tension 75,6 mN/m (H₂O₂ 50 %) at 20 °C

10. STABILITY AND REACTIVITY**Reactivity**

- 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, 1.193 - 1.270 mg/kg (H₂O₂ 35 %)

Acute inhalation toxicity

- LC₅₀, 4 h, rat, > 0,17 mg/l, vapour (H₂O₂ 50 %)

Acute dermal toxicity

- LD₅₀, rabbit, > 2.000 mg/kg (H₂O₂ 35 %)

Skin corrosion/irritation

- rabbit, Skin irritation (H₂O₂ 35 %)

Serious eye damage/eye irritation

- rabbit, Severe eye irritation (H₂O₂ 10 %)

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, rat, 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, 4,3 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, 2,6 mg/l (Pure substance)
- Algae, Skeletonema costatum, NOEC, 72 h, 0,63 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

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- 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 mPa.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

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· 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

· 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
- Safety Occupational Health and Environmental in Work Place B.E 2554, Jan 2011
- Notification of Ministry of Industry: List of Hazardous Substances B.E. 2538
- List of Hazardous Substances, Appendix A (Notification of Ministry of Industry Re: List of Hazardous Substances B.E. 2538 (1995), as amended through Notification No. 7, B.E. 2553 (2010))
- List of Hazardous Substances, Appendix B (Notification of Ministry of Industry Re: List of Hazardous Substances B.E. 2538 (1995), as amended through Notification No. 7, B.E. 2553 (2010))

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- Hazardous Substances Prohibited from On-line Notification System - Notification of Ministry of Industry, B.E. 2547

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 INSQ (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.
H335	· May cause respiratory irritation.
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): 2, 12
- Distribute new edition to clients

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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