Safety Data Sheet
H₂O₂ Liquid Bleach

1. IDENTIFICATION

Synonyms none
CAS# see listing in Part 3, below
Material Use liquid oxygen bleach

IN AN EMERGENCY CALL: INFOTRAC 1-800-535-5053

2. HAZARD IDENTIFICATION

GHS Class
(Category) oxidizer skin irritant eye corrosive STOT
(3) (2) (1) (3)
Signal Words WARNING WARNING DANGER WARNING

Hazard Statements may intensify fire, oxidizer causes skin irritation causes serious eye damage may cause respiratory tract irritation
(H272) (H315) (H318) (H335)

GHS Precautionary Statements for Labeling
P260, P262, P264 Do not breathe mist, vapors or spray. Do not get in eyes, on skin or on clothing. Wash thoroughly after handling.
P270, P280 Do not eat, drink or smoke when using this product. Wear eye protection, protective gloves and clothing of nitrile butyl or neoprene.
P273, P391 Avoid release to the environment. Collect spillage.
P313 & P333 If skin irritation or rash occurs, get medical advice/attention.
P304 & P340 If inhaled, remove person to fresh air and keep comfortable for breathing.

3. COMPOSITION

<table>
<thead>
<tr>
<th>CAS NUMBER</th>
<th>%</th>
<th>TLV ppm / mg/m³</th>
<th>LD₅₀ (mg/kg) ORAL</th>
<th>LD₅₀ (mg/kg) SKIN</th>
<th>LC₅₀ ppm INHALATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Peroxide</td>
<td>7722-84-1</td>
<td>10-20%</td>
<td>1 / 1.4</td>
<td>376</td>
<td>690</td>
</tr>
<tr>
<td>Anionic Surfactant</td>
<td>on request</td>
<td>&lt;1%</td>
<td>not listed</td>
<td>990</td>
<td>1000</td>
</tr>
</tbody>
</table>

4. FIRST AID

SKIN: Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.

EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.

INHALATION: Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If victim’s breathing stops, administer artificial respiration and seek medical aid promptly.

INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim’s head below hips to prevent inhalation of vomited material. Seek medical help promptly.

NOTE: Corrosive substance: first aid must be applied immediately! Inadvertent inhalation of vomited material may seriously damage the lungs. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.

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5. **FLAMMABILITY & FIRE-FIGHTING**

- **Flash Point**: cannot burn – oxidizing substance
- **Autoignition Temperature**: cannot burn – oxidizing substance
- **Flammable Limits**: cannot burn – oxidizing substance
- **Combustion Products**: oxides of carbon, nitrogen & sulfur, part oxidised hydrocarbon fragments
- **Firefighting Precautions**: as for materials sustaining fire; compatible with water spray/fog; firefighters must wear SCBA
- **Static Discharge**: cannot accumulate a static charge

6. **ACCIDENTAL RELEASE MEASURES**

- **Leak Precaution**: dike to control spillage and prevent environmental contamination
- **Handling Spill**: recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep, shovel & store in closed containers for disposal

7. **HANDLING & STORAGE**

   Oxidizing material; store in original containers, away from combustible substances & materials listed in Part 10. Never cut, drill, weld or grind on or near this container, whether empty or full. Always replace drum, pail or IBC cap prior to moving the container.

   Avoid generating or breathing product vapor or mist. If mist or vapor form in use, install adequate ventilation to control airborne concentration to regulated limits (see Part 8, below). If dealing with a spill, and ventilation is impractical, wear a suitable respirator. Avoid contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

8. **EXPOSURE CONTROL & PERSONAL PROTECTION**

   - **ACGIH TLV**: 1ppm / 1.4mg/m³
   - **ACGIH STEL**: not listed
   - **OSHA PEL**: 1ppm / 1.4mg/m³
   - **OSHA STEL**: not listed
   - **Ventilation**: mechanical ventilation is probably not required
   - **Hands**: butyl, nitrile or neoprene gloves – always confirm suitability with supplier
   - **Eyes**: safety glasses with side shields or chemical goggles – always protect eyes!
   - **Clothing**: impermeable (hands, above) apron, boots, long sleeves, if splashing is anticipated

9. **PHYSICAL AND CHEMICAL PROPERTIES**

   **NOTE**: for Flash Point, Autoignition Temperature & Flammable Limits see Part 5.
   - **Odor & Appearance**: clear, colorless liquid with slightly “sharp” odor
   - **Odor Threshold**: not known
   - **Vapor Pressure**: as for water
   - **Evaporation Rate (Butyl Acetate = 1)**: as for water
   - **Vapor Density (air = 1)**: 0.6 (water), 1.2 (hydrogen peroxide)
   - **Boiling Point**: not measured; ~105°C / 221°F
   - **Freezing Point**: not measured; ~10°C / 14°F
   - **Decomposition Temperature**: not known (hydrogen peroxide); above 300°C / 573°F (surfactant)
   - **Specific Gravity**: 1.034-1.046 (20/20°C)
   - **Water Solubility**: complete
   - **Log P_{aw} (Octanol/H₂O Partition Coefficient)**: not known
   - **Viscosity**: not known – thin, mobile liquid
   - **pH**: 5.2-6.8
   - **Molecular Weight**: 34grams/mole (hydrogen peroxide); 18grams/mole (water), 543 (surfactant)

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**PLEASE ENSURE THAT THIS SDS IS GIVEN TO, AND EXPLAINED TO PEOPLE USING THIS PRODUCT.**

**EMERGENCY INFORMATION:** INFOtrac 1-800-535-5053
10. REACTIVITY

Dangerously Reactive With: flammable materials; may explode on contact with strong alkalies, sulphuric acid, nitric acid or potassium permanganate; may react violently with reducing agents such as metal hydrides

Also Reactive With: may be corrosive to some metals

Chemical Stability: will not polymerize; stable if kept pure

Decomposes in Presence of: various metals and some salts

Decomposition Products: oxygen – partly as highly reactive oxygen radicals

Mechanical Impact: not sensitive

11. TOXICITY INFORMATION

i. ACUTE EXPOSURE

Skin Contact: may be irritating; hydrogen peroxide decomposes rapidly on contact with skin – if the oxygen & oxygen radicals cannot escape to the air, the irritation may be severe.

Skin Absorption: yes, slowly; toxic effects unlikely by this route

Eye Contact: severely irritating, may damage eyes if not removed promptly

Inhalation: irritating to respiratory system

Ingestion: abdominal pain, foaming at the mouth, vomiting; large amounts are life-threatening – not a route of industrial exposure

ii. CHRONIC EXPOSURE

General: prolonged or repeated exposure may cause dermatitis

Sensitizing: not a sensitizer

Carcinogen/Tumorigen: hydrogen peroxide is an ACGIH animal carcinogen A3, not classifiable as to human carcinogenicity

Reproductive Effect: no known effect on humans or animals

Mutagen: not known to be a mutagen or teratogen in humans or animals

Synergistic With: not known

Calculated LD₅₀ (oral): 3110mg/kg (rat)
Calculated LD₅₀ (skin): 6670mg/kg (rabbit)
Calc. LC₅₀ (inhalation): 14,300ppm (rat)

12. ECOLOGICAL INFORMATION

Hydrogen Peroxide:

Bioaccumulation: decomposes rapidly in the environment and cannot bioaccumulate

Biodegradation: does not biodegrade, but does not persist in the environment; ½-life in ground water >1hr; ½-life in waste water depends on cleanliness – hours in clean water, minutes in dirty water; ¼-life in sewage sludge is just seconds

Abiotic Degradation: reacts with many substances in the environment; ½-life in air 10-20hours

Mobility in soil, water: water soluble, but reacts with soil substances so rapidly that it cannot move readily

Aquatic Toxicity

LC₅₀ (Fish, 96hr) 16.4mg/liter (Pimephelas promelas), 37.4mg/liter (Ictalurus punctatus & melas)
EC₅₀ (Crustacea, 24hr) 7.7mg/liter (Daphnia magna), 2.4mg/liter (Daphnia pulex, 48hr), 4.4mg/liter (Gammarus sp.)
EC₅₀ (Algae) 2.5mg/liter (Chlorella vulgaris), 5mg/liter (Anabena variabilis), 17mg/liter (Chlorella emersonii)
EC₅₀ (Bacteria) 30mg/liter (Escherichia coli)

Anionic Surfactant:

Bioaccumulation: low bioaccumulation¹

Biodegradation: biodegrades slowly in the presence of oxygen; 21% - 51% in 21 days¹

Abiotic Degradation: reacts with atmospheric hydroxyl (OH) radicals; estimated ½-life in air 7 hours¹

Mobility in soil, water: water soluble; moves readily through soil & the water column

Aquatic Toxicity

LC₅₀ (Fish 96 hr, mg/l) 1.93 (Pimephelas promelas)¹, 3.4 (Lepomis macrochirus)¹, 2.3 (Salmo gairdneri)¹
LC₅₀ (Crustacea, 48hr, mg/l) 2.3 (Daphnia magna)
EC₅₀ (Algae, 96hr, mg/l) 42 (Pseudokirchnerella subcapitata)¹
LC₅₀ (Microorganisms) not known

¹cont’d next page
13. DISPOSAL CONSIDERATIONS

Waste Disposal: do not flush to sewer; may be incinerated in approved facility with flue gas monitoring & scrubbing, mix (carefully) with a suitable flammable waste before incineration.

Containers: Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.

Pails must be vented and thoroughly dried prior to crushing and recycling.

IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5 years). Steel containers must be inspected, pressure tested & recertified every 5 years.

Warning: never cut, drill, weld or grind on or near this container, even if empty.

14. TRANSPORT INFORMATION

USA 49 CFR & Canada/International TDG:

Product Identification Number: UN – 2984

Shipping Name: hydrogen peroxide, aqueous solution with not less than 8 per cent but less than 20 per cent hydrogen peroxide

Classification: Class 5.1; Packing Group III

Marine Pollution: not a marine pollutant

Reportable Quantity (RQ): none

15. REGULATIONS

Canada DSL: on inventory

U.S.A. TSCA: on inventory

Europe EINECS: on inventory

U.S.A. Regulations:

Immediately Dangerous to Life or Health: 75 ppm

Allowable Tolerances: An exemption from the requirement of a tolerance is established for residues of hydrogen peroxide in or on all food commodities at the rate of less than or equal to 1% hydrogen peroxide per application on growing crops and post harvest potatoes when applied as an algaecide, fungicide and bactericide.

OSHA Standards: Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 1 ppm (1.4 mg/cu m).

NIOSH Recommendations: Recommended Exposure Limit: 10 hr Time-Weighted Avg: 1 ppm (1.4 mg/cu m).

Threshold Limit Values: 8 hr Time Weighted Avg (TWA): 1 ppm Excursion Limit Recommendation: Excursions in worker exposure levels may exceed 3 times the TLV-TWA for no more than a total of 30 minutes during a work day, and under no circumstances should they exceed 5 times the TLV-TWA, provided that the TLV-TWA is not exceeded. A3; Confirmed animal carcinogen with unknown relevance to humans.

CERCLA Reportable Quantities: Releases of CERCLA hazardous substances are subject to the release reporting requirement of CERCLA section 103, codified at 40 CFR part 302, in addition to the requirements of 40 CFR part 355. Hydrogen peroxide (Conc >52%) is an extremely hazardous substance (EHS) subject to reporting requirements when stored in amounts in excess of its threshold planning quantity (TPQ) of 1,000 lbs.

16. OTHER INFORMATION

Date of Preparation: March 2015

Date of Revision: -

Prepared for Tomco-Harwel, by Peter Bursztyn

With data from the Registry of Toxic Effects of Chemical Substances (RTECS), Hazardous Substance Data Base (HSDB), Cheminfo (CCOHS), OSHA, IUCLID Datosheets (European Chemical Substance Information System - ESIS), & others sources (below if used), as required/available

(1) U.S.A. E.P.A. Screening-Level Hazard Characterization; Alkyl Diphenyl Oxide Disulfonates, September 2010:

http://www.epa.gov/chemrtk/hpvis/hazchar/Category_ADPODS_September_2010.pdf

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