PAGE: 1
DATE PREPARED: SEP 17, 1995
MSDS NO.: 92842583

EXXON CHEMICAL DRYCLEANING FLUID-2000

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: EXXON CHEMICAL DRYCLEANING FLUID-2000
CHEMICAL NAME:
Synthetic Aliphatic Hydrocarbon, Hydrotreated 64742-48-9
CHEMICAL FAMILY:
Petroleum Hydrocarbon
PRODUCT DESCRIPTION:
Clear colorless liquid.

CONTACT ADDRESS:
EXXON CHEMICAL AMERICAS
P.O. BOX 3272, HOUSTON, TEXAS 77253-3272

** EMERGENCY TELEPHONE NUMBERS: (24 Hours) **
** CHEMTREC (800) 424-9300 **
** EXXON CHEMICAL AMERICAS (800) 726-2015 **

NON EMERGENCY TELEPHONE NUMBERS : (8am-5pm M-F)
FOR HEALTH AND SAFETY INFORMATION CALL : (713) 870-6884
FOR GENERAL PRODUCT INFORMATION CALL : (713) 870-6000

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

This product is hazardous as defined in 29 CFR1910.1200.
OSHA HAZARD
Combustible

SECTION 3 HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS
EYE CONTACT:
Slightly irritating but does not injure eye tissue.
SKIN CONTACT:
Low order of toxicity.
Frequent or prolonged contact may irritate and cause dermatitis.
Skin contact may aggravate an existing dermatitis condition.
INHALATION:
High vapor/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death.
INGESTION:
Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly

Continues on page 2

progressing to death.
Minimal toxicity.

SECTION 4 FIRST AID MEASURES

EYE CONTACT:
Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.
SKIN CONTACT:
Flush with large amounts of water; use soap if available.
Remove grossly contaminated clothing, including shoes, and launder before reuse.
INHALATION:
Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.
INGESTION:
If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

SECTION 5 FIRE-FIGHTING MEASURES

FLASHPOINT: 147 Deg F. METHOD: TCC NOTE: Typical
FLAMMABLE LIMITS: LEL: 1.3 UEL: 8.8 @ 77 Deg F. NOTE: Approximate
AUTOIGNITION TEMP.: 640 Deg F. NOTE: Approximate
GENERAL HAZARD
Combustible Liquid, can form combustible mixtures at temperatures at or above the flashpoint.
Static Discharge, material can accumulate static charges which can cause an incendiary electrical discharge .
"Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.
Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.
FIRE FIGHTING
Use water spray to cool fire exposed surfaces and to protect personnel.
Isolate "fuel" supply from fire.
Use foam, dry chemical, or water spray to extinguish fire.
Avoid spraying water directly into storage containers due to danger of boilover.
This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

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DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
No unusual

SECTION 6 ACCIDENTAL RELEASE MEASURES

LAND SPILL
Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 15 REGULATORY INFORMATION) notify the National Response Center.
Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust.
Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
WATER SPILL
Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear.
Remove from surface by skimming or with suitable adsorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in non-confined waters.
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

SECTION 7 STORAGE AND HANDLING

ELECTROSTATIC ACCUMULATION HAZARD:
Yes, use proper grounding procedure
STORAGE TEMPERATURE, Deg F:
Ambient
LOADING/UNLOADING TEMPERATURE, Deg F:
Ambient
STORAGE/TRANSPORT PRESSURE, mmHg:
Atmospheric
LOADING/UNLOADING VISCOSITY, cSt:
2.0
STORAGE AND HANDLING:
Keep container closed. Handle and open containers with care.
Store in a cool, well ventilated place away from incompatible materials.
Do NOT handle or store near an open flame, heat or other sources of

Continues on page 4

ignition. Protect material from direct sunlight.
Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.
Do NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS
The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated.
PERSONAL PROTECTION
For open systems where contact is likely, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where contact may occur, wear safety glasses with side shields.
Where concentrations in air may exceed the limits given in this Section and engineering, work practice or other means of exposure reduction are not adequate, NIOSH/MSHA approved respirators may be necessary to prevent overexposure by inhalation.
WORKPLACE EXPOSURE GUIDELINES
EXXON RECOMMENDS THE FOLLOWING OCCUPATIONAL EXPOSURE LIMITS:
300 ppm total hydrocarbon based on composition.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

SPECIFIC GRAVITY at Deg F:	0.77 at 60
VAPOR PRESSURE, mmHg at Deg F:	1 at 68 Approximate
SOLUBILITY IN WATER, wt. % at Deg F:	Less than 0.01 at 77
VISCOSITY OF LIQUID, cSt at Deg F:	2.1 at 77 Approximate
SP. GRAV. OF VAPOR, at 1 atm (Air=1):	5.90 Calculated
FREEZING/MELTING POINT, Deg F:	Less than -76
EVAPORATION RATE, n-Bu Acetate=1:	Less than 0.1
BOILING POINT, Deg F:	376 to 401

SECTION 10 STABILITY AND REACTIVITY

STABILITY:
Stable
CONDITIONS TO AVOID INSTABILITY:
Not Applicable
HAZARDOUS POLYMERIZATION:
Will not occur
CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION:
Not Applicable

Continues on page 5

MATERIALS AND CONDITIONS TO AVOID INCOMPATIBILITY:
Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS:
None

SECTION 11 TOXICOLOGICAL INFORMATION

Please refer to Section 3 for available information on potential health effects.

SECTION 12 ECOLOGICAL INFORMATION

No specific ecological data are available for this product. Please refer to Section 6 for information regarding accidental releases and Section 15 for regulatory reporting information.

SECTION 13 DISPOSAL CONSIDERATIONS

Please refer to Sections 5, 6 and 15 for disposal and regulatory information.

SECTION 14 TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (DOT):
DOT SHIPPING DESCRIPTION: PETROLEUM DISTILLATE, N.O.S., COMBUSTIBLE LIQUID, 1268, III
Note: In containers of 119 gallons capacity or less this product is not regulated by DOT.

SECTION 15 REGULATORY INFORMATION

TSCA:
This product is listed on the TSCA Inventory at CAS Registry Number 64742-48-9
Clean Water Act/Oil Pollution Act:
This product is classified as an oil under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Act of 1990. Discharge or spills which produce a visible sheen on either surface water, or in waterways/sewers which lead to surface water, must be reported to the National Response Center at 800-424-8802.
CERCLA:
If this product is accidentally spilled, it is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act. We recommend you contact local authorities to determine if there may be other local reporting requirements.

Continues on page 6

SARA TITLE III:
Under the provisions of Title III, Sections 311/312 of the Superfund Amendments and Reauthorization Act, this product is classified into the following hazard categories:
Fire.
This information may be subject to the provisions of the Community Right-to-Know Reporting Requirements (40 CFR 370) if threshold quantity criteria are met.

SECTION 16 OTHER INFORMATION

HAZARD RATING SYSTEMS:
This information is for people trained in:
National Paint & Coatings Association's (NPCA)
Hazardous Materials Identification System (HMIS)
National Fire Protection Association (NFPA 704)
Identification of the Fire Hazards of Materials

	NPCA-HMIS	NFPA 704
HEALTH	1	1
FLAMMABILITY	2	2
REACTIVITY	0	0

KEY
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

REVISION SUMMARY:
Since April 3, 1995 this MSDS has been revised in Section(s):
7

REFERENCE NUMBER:
HDHA-C-25233

SUPERSEDES ISSUE DATE:
April 3, 1995

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the users responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

ALEXANDER CHEMICAL CORPORATION

KINGSBURY INDUSTRIAL PARK
KINGSBURY, IN. 46345
800-348-8827

2525 CABOT DRIVE
LISLE, IL. 60532
800-445-9458

Material Safety Data Sheet

1. Chemical Product and Supplier Identification

Product Name: Hydrogen Peroxide, 20 - 60%

Chemical Name: Hydrogen peroxide, aqueous solution

Synonyms: Hydrogen dioxide, hydroperoxide, peroxide

Grades / Trade Names: 27.5% Technical

31% Electronic , Electronic , Low Carbon, UltraPure, UltraHigh Purity, UltraPure Plus, Pico-Pure™

35% Technical, Oxyfirst™ Textile, PeroGard®, Cosmetic, Food, PFP™ , Universal Food, PC, Chemical, Chemical/1, Chemical LP, Ultra Cosmetic™, PeroxClean™

40% Technical

50% Technical, Oxyfirst™ Textile, PeroGard®, Dilution, Cosmetic, Electronic, Food, PFP™, Universal Food, PC, UltraPure, Chemical, Chemical/1, Chemical LP, SVP-HP™(1) , PeroxClean™

Manufacturer:	Solvay Interox, Inc. 3333 Richmond Avenue Houston, Texas 77098	**Office:**	713/525-6500 (7:30 am - 5:00 pm CST M-F)
		Emergency:	281/479-2826 (24 hours every day)
		CHEMTREC:	800/424-9300 (24 hours every day)
		CANUTEC:	613/996-6666 (24 hours every day)

Product Uses: Used in bleaching textiles, food, hair, paper and other materials; component of rocket propellant; in the manufacture of a wide range of chemicals, plastics, pharmaceuticals; used in photography, electroplating, water treatment and wastewater treatment.

MSDS Number: HL0002-00-97 **Effective Date:** April 18, 1997

NOTE: NOT VALID TWO YEARS AFTER EFFECTIVE DATE.

To our knowledge the information herein is accurate as of the date of this document. However, neither Solvay Interox nor any of its affiliates makes any warranty, expressed or implied, or accepts any liability in connection with this information or its use. This information is for use by technically skilled persons at their own discretion and risk and does not relate to use of the product in combination with any other substance or in any process. This is not a license under any patent. The user alone must finally determine suitability of any information or material for any contemplated use, the manner of use and whether any patents are infringed.

Solvay Interox, Inc.
3333 Richmond Avenue, Houston, Texas 77098-3099
Mailing Address: P.O. Box 27322, Houston, Texas 77227-7322
Telephone Interox T 713/525-6000 Fax 713/525-6800
Solvay Companies Website: http://www.solvay.com

Solvay Interox

SOLVAY

a Passion for Progress

2. Composition/Information on Ingredients

Components	Formula	CAS No.	Percent
Hydrogen peroxide	H_2O_2	7722-84-1	20 - 60
Water	H_2O	7732-18-5	balance

3. Hazards Identification

Emergency Overview:

- Toxicity effects principally related to its corrosive properties.
- Non-combustible, but may contribute to the combustion of other substances and causes violent and sometimes explosive reactions.
- May be fatal if swallowed.

Potential Health Effects

General:
- Corrosive to mucous membranes, eyes and skin.
- The seriousness of the lesions and the prognosis of intoxication depend directly on the concentration and duration of exposure.

Inhalation:
- Nose and throat irritation
- Cough
- In case of repeated or prolonged exposure: risk of sore throat, nose bleeds, chronic bronchitis

Eye contact:
- Severe eye irritation, watering, redness and swelling of the eyelids
- Risk of serious or permanent eye lesions

Skin contact
- Irritation and temporary whitening at contact area
- Risk of burns

3. Hazards Identification, continued

Ingestion

- Paleness and cyanosis of the face
- Severe irritation, risk of burns and perforation of the gastrointestinal tract accompanied by shock
- Excessive fluid in the mouth and nose, with risk of suffocation
- Risk of throat edema and suffocation
- Bloating of stomach, belching
- Nausea and vomiting (bloody)
- Cough
- Risk of chemical pneumonitis from product inhalation

Carcinogen Designation

- IARC (International Agency for Research on Cancer): 3 - Not Classifiable as to Carcinogenicity to Humans.
- TLV A3 - Animal carcinogen: Agent is carcinogenic in experimental animals at relatively high dose, by route(s) of administration, at site(s), of histologic types(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increase risk of cancer in exposed humans. Available evidence suggest that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure

4. First-Aid Measures

General recommendations

- In case of product splashing into the eyes and face, treat eyes first.
- Do not dry soiled clothing near an open flame or incandescent heat source.
- Submerge soiled clothing in water prior to drying.

Inhalation:

- Remove the subject from the contaminated area.
- Consult with a physician in case of respiratory symptoms.

Eye contact:

- Flush eyes as soon as possible with running water for 15 minutes, while keeping the eyelids open.
- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
- Consult with an ophthalmologist in all cases.

4. First-Aid Measures, continued

Skin contact

- Remove contaminated shoes, socks and clothing, under a shower if necessary; wash the affected skin with running water.
- Keep warm (blanket) and provide clean clothing.
- Consult with a physician in case in all cases.

Ingestion

- Consult with a physician immediately in all cases.
- Take to hospital.

If the subject is completely conscious:

- Rinse mouth and administer fresh water.
- Do not induce vomiting.

If the subject is unconscious:

- Loosen collar and tight clothing, lay the victim on his/her left side.
- Oxygen or pulmonary resuscitation if necessary.
- Keep warm (blanket).

Medical Treatment

Inhalation: Negligible

Eye contact: On the advice of the ophthalmologist.

Skin contact: Usual treatment for burns.

Ingestion:

- Oxygen therapy via intra-tracheal intubation..
- If necessary, tracheotomy
- Placement of gastric catheter to release stomach gases.
- Avoid gastric lavage risk of perforation.
- In case of intense pain: inject an I.M. morphomimetic drug (piritramide) before taking to hospital.
- Prevention or treatment for shock and pulmonary edema.
- Urgent digestive endoscopy with aspiration of the product.
- Treatment of gastrointestinal tract burns and resulting effects.

5. Fire-Fighting Measures

Flash point:	Non-flammable
Flammability:	Non-flammable
Auto-flammability:	Non-flammable
Danger of explosion:	• With flammable liquids • With certain materials (see section 10) • In case of heating
Oxidizing properties:	Oxidizer
Common extinguishing methods:	Large quantities of water, water spray.
Inappropriate extinguishing methods:	No restriction.
Specific hazards:	• Oxygen released on exothermic decomposition may support combustion in case of surrounding fire. • Oxidizing agent, may cause spontaneous ignition with combustible materials. • Contact with flammables may cause fire or explosions. • Pressure burst may occur due to decomposition in confined spaces/containers.
Protective measures in case of intervention:	• Evacuate all non-essential personnel. • Intervention only by capable personnel who are trained and aware of the hazards of the product. • Wear self contained breathing apparatus when in close proximity or in confined spaces. • When intervention in close proximity, wear acid resistant over suit. • After intervention, proceed to clean the equipment. Take a shower, remove clothing carefully, clean and check.
Other precautions	• If safe to do so, remove the exposed containers, or cool with large quantities of water. • Stay upwind. • Keep at a safe distance in a protected location. Never approach containers which have been exposed to fire, without cooling them sufficiently.

6. Accidental Release Measures

Precautions

- Observe the protection measures given in sections 5 and 8.
- Isolate the area.
- Avoid materials and products which are incompatible with the product (see section 10).
- If safe to do so, without exposing the personnel, try to stop the spillage.
- In case of contact with combustible materials, avoid product drying out by dilution with water.

Cleanup methods

- If possible, dike large quantities of liquid with sand or earth.
- Dilute with large quantities of water.
- Do not add chemical products.
- For disposal methods, refer to section 13.
- In order to avoid the risk of contamination, the recovered product must not be returned to the original tank/container.

Precautions for protection of the environment

- Immediately notify the appropriate authorities in case of reportable spill.

7. Handling and Storage

Handling:

- Operate in a well-ventilated area.
- Keep away from heat sources.
- Keep away from incompatible products.
- Prevent all contact with organics.
- Use equipment and containers which are compatible with the substance.
- Before all operations, passivate the piping circuits and vessels.
- Never return unused product to storage container.
- Ensure an adequate supply of water is available in the event of an accident.
- Containers and equipment used to handle hydrogen peroxide should be used exclusively for hydrogen peroxide.

7. Handling and Storage, continued

Storage:

- In a ventilated, cool area.
- Store away from heat sources.
- Keep away from incompatible products (see section 10).
- Keep away from combustible substances.
- Keep in container fitted with safety valve or vent.
- Keep in original packaging, closed.
- Containment diking for storage of the packages and transfer installation.
- Regularly check the condition and temperature of the containers.
- For bulk storage recommendations, consult Solvay Interox, Inc.

Other precautions:

- Warn personnel of the dangers of the product.
- Follow the protective measures given in section 8.
- Do not confine the product in the circuit, between closed valves, or in a container without a vent.

Packaging:

- Aluminum 99.5 %
- Stainless steel 304 L and 316 L.
- Approved grades of HDPE.

8. Exposure Controls/Personal Protection

Engineering controls:

- Local ventilation
- Follow the protective measures given in section 7.
- Provide ventilation in work areas to keep exposure below the following applicable limits:

ACGIH® TLV® (1996)	OSHA PEL	NIOSH REL (1994)
1 ppm TWA	1 ppm TWA	1 ppm TWA
1.4 mg/m^3 TWA	1.4 mg/m^3 TWA	1.4 mg/m^3 TWA

ACGIH® and TLV® are registered trademarks of the American Conference of Governmental Industrial Hygienists.

8. Exposure Controls/Personal Protection, continued

Respiratory protection: NIOSH approved full-face supplied air respirator for excessive concentrations.

Hand protection: Chemical resistant protective gloves made of PVC or rubber.

Eye protection: Wear protective goggles for all industrial operations. If a risk of splashing exists, wear goggles and face shield.

Skin protection: Coveralls. If a risk of splashing exists, wear chemical resistant slicker suit and boots of PVC or rubber.

Other precautions:

- Shower and eye wash stations.
- Consult your industrial hygienist or safety manager for the selection of personal protective equipment suitable for the working conditions.

9. Physical and Chemical Properties

Appearance: Colorless, liquid

Odor: Slightly pungent

pH: 1 - 4

Vapor pressure:

Total ($H_2O_2 + H_2O$)
12 mbar (9.0 mmHg) @ 20°C (68°F) for 50% hydrogen peroxide
72 mbar (54 mmHg) @ 50°C (122°F) for 50% hydrogen peroxide

Partial (H_2O_2)
1 mbar (0.75 mmHg) @ 30°C (86°F) for 50% hydrogen peroxide

Vapor density: 1.0 for 50% hydrogen peroxide

Boiling point:
108°C (226°F) @ 1.013 bar (760 mmHg) for 35% hydrogen peroxide
115°C (239°F) @ 1.013 bar (760 mmHg) for 50% hydrogen peroxide

9. Physical and Chemical Properties, continued

Freezing point:	-33°C (-27°F) for 35% hydrogen peroxide -52°C (-62°F) for 50% hydrogen peroxide
Solubility in water:	Complete
Specific gravity:	1.1 @ 20°C (68°F) for 27.5% hydrogen peroxide 1.2 @ 20°C (68°F) for 50% hydrogen peroxide
Molecular weight:	34.01
Viscosity:	1.07 mPa·s @ 20°C (68°F) for 27.5% hydrogen peroxide 1.17 mPa·s @ 20°C (68°F) for 50% hydrogen peroxide
Decomposition temperature:	≥ 60°C (140°F) Self-accelerated decomposition temperature (SADT) with oxygen release
Surface tension:	74 mN/m @ 20°C (68°F) for 27.5% hydrogen peroxide 75.6 mN/m @ 20°C (68°F) for 50% hydrogen peroxide

10. Stability and Reactivity

Chemical stability: Stable under normal conditions of use with slow gas release.

Conditions to avoid:

- Heat/Sources of heat
- Contamination

Materials to avoid:

- Acids
- Bases
- Metals
- Salts of metals
- Reducing agents
- Organic materials
- Flammable substances

Hazardous decomposition products: Oxygen

Hazardous polymerization: Will not occur

Other information: Decomposition releases steam and heat.

11. Toxicological Information

Acute toxicity:

- Oral route, LD_{50}, rat, 1232 mg/kg for 35% hydrogen peroxide
- Oral route, LD_{50}, rat, 841 mg/kg for 60% hydrogen peroxide
- Dermal route, LD_{50}, rabbit, > 2000 mg/kg for 35% hydrogen peroxide
- Inhalation, LC_{50}, 4 hours, rat, 2000 mg/m³
- Inhalation, LC_0, 1 hour, mouse, 2170 mg/m³

Irritation:

- Rabbit, Serious damage (eyes) for 70% hydrogen peroxide.
- Rabbit, Irritant (skin) for < 50% hydrogen peroxide
- Rabbit, Corrosive (skin) 1 hour, for ≥ 50% hydrogen peroxide
- Mouse, Respiratory irritation (RD_{50}), 665 mg/m³

Sensitization: Guinea Pig, Nonsensitizing (skin)

Chronic toxicity:

- In vitro, without metabolic activation, mutagenic effect.
- In vivo, No mutagenic effect
- Oral route, after prolonged exposure, mouse
  Target organ: duodenum, carcinogenic effect
- Dermal route, after prolonged exposure, mouse, no carcinogenic effect
- Oral route, after prolonged exposure, rat, no carcinogenic effect
- Oral route, after prolonged exposure, rat/mouse
  Target organ: gastro-intestinal system, observed effect
- Inhalation, after repeated exposure, dog, 7 ppm, irritating effect

Comments:

- Toxic effect linked with corrosive properties.
- The carcinogenic effect found in animals is not demonstrated in humans.

12. Ecological Information

Acute ecotoxicity:

Fish, Pimephales promelas
LC_{50}, 96 hours, 16.4 mg/L
NOEC, 96 hours, 5 mg/l.
Crustaceans, Daphnia pulex
EC_{50}, 48 hours, 2.4 mg/L
NOEC, 48 hours, 1 mg/L
Algae, various species
EC_{50}, 72 to 96 hours, 3.7 to 160 mg/L in fresh water.
Algae, Nitzchia closterium
EC_{50}, 72 to 96 hours, 0.85 mg/L in salt water.

12. Ecological Information, continued

Mobility:

Air, Henry's law constant (H) = 1 mPa.m³/mol @ 20°C (68°F)
Result: non-significant volatility.
Air, condensation on contact with water droplets.
Result: rain washout.
Water -
Result: non-significant evaporation.
Soil/sediments -
Result: non-significant evaporation and adsorption.

Abiotic degradation:

Air, indirect photo-oxidation, $t_{½}$ 10 to 20 hours
Conditions: sensitizer: OH radical.
Water, redox reaction, $t_{½}$ 2.5 days, 10,000 ppm.
Conditions: mineral and enzymatic catalysis/fresh water.
Water, redox reaction, $t_{½}$ 20 days, 100 ppm.
Conditions: mineral and enzymatic catalysis/fresh water.
Water, redox reaction, $t_{½}$ 60 hours.
Conditions: mineral and enzymatic catalysis/salt water.
Soil, redox reaction, $t_{½}$ 15 hour(s).
Conditions: mineral catalysis.

Biotic degradation:

Aerobic, $t_{½}$ < 1 minutes in biological treatment sludge.
Result: rapid and considerable biodegradation.
Aerobic, $t_{½}$ between 0.3 to 2 days in fresh water.
Result: rapid and considerable biodegradation.
Effects on biological treatment plants, > 200 mg/l,
Result: inhibitory action.

Potential for bioaccumulation:

Result: non-bioaccumulable (enzymatic metabolism).

Comments:

- Toxic for aquatic organisms.
- Nevertheless, hazard for the environment is limited due to product properties:
  - No bioaccumulation.
  - Considerable abiotic and biotic degradability.
  - No toxicity of degradation products (H_2O and O_2).

13. Disposal Considerations

Waste Disposal Method: Consult current federal, state and local regulations regarding the proper disposal of this material and its emptied containers.

14. Transport Information

D.O.T. Proper Shipping Name:	Hydrogen peroxide, aqueous solution
UN Number:	2014
Primary Hazard:	5.1
Subsidiary Hazard:	8
Label(s):	Oxidizer, Corrosive
Packing Group:	II

15. Regulatory Information

TSCA Inventory List: Yes

CERCLA Hazardous Substance (40 CFR Part 302)

Listed substance:	No
Unlisted substance:	Yes
Characteristic:	Ignitability, corrosivity
RCRA Waste Number:	D001, D002
Reportable Quantity:	100

SARA, Title III, Sections 302/303
(40 CFR Part 355 -Emergency Planning and Notification)

Extremely hazardous substance:	Yes, > 52% hydrogen peroxide
Reportable Quantity:	1000 pounds
Threshold planning quantity:	1000 pounds

15. Regulatory Information, continued

SARA, Title III, Sections 311/312
(40 CFR Part 370 - Hazardous Chemical Reporting: Community Right-To-Know)

Hazard category: Immediate (acute) health hazard
Fire hazard

Threshold planning quantity: 10,000 pounds for < 52% hydrogen peroxide
500 pounds for > 52% hydrogen peroxide

SARA, Title III, Section 313
(40 CFR Part 372 - Toxic Chemical Release Reporting: Community Right-To-Know)

Toxic chemical: No

WHMIS Classification:
C Oxidizing material
E Corrosive
F Dangerously reactive material

Canadian Domestic Substances List: DSL / Non confidential #6754

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. Other Information

HMIS® Rating:
Health - 3 Flammability - 0 Reactivity - 1 PPE - Required

HMIS® is a registered trademark of the National Paint and Coating Association.

NFPA® Rating:
Health - 3 Flammability - 0 Reactivity -1 OX

NFPA® is a registered trademark of the National Fire Protection Association.

(1) SVP-HP™(1) is a trademark of Akzo Nobel Inc.

Reason for Issue: Update sections 1, 3 - 16
Supersedes: SI-65-HL0002-01 (April 18, 1995)