



local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

| Exposure Limits                        |                                                                | OSHA - Final PELs                       |                                                                                                                                                                 |
|----------------------------------------|----------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chemical Name                          | ACGIH                                                          | NIOSH                                   | OSHA - Final PELs                                                                                                                                               |
| Benzene                                | 0.5 ppm; 2.5 ppm STEL; skin potential for cutaneous absorption | 0.1 ppm TWA 500 ppm IDLH                | 10 ppm TWA (apply only to exempt industry segments); 25 ppm Ceiling; 1 ppm TWA; 5 ppm STEL; 0.5 ppm TWA action hazard; Cancer hazard; Flammable (see 1910.1028) |
| Neohexane                              | none listed                                                    | none listed                             | none listed                                                                                                                                                     |
| Isopentane                             | 600 ppm (listed all isomers)                                   | none listed                             | none listed                                                                                                                                                     |
| 2,3-Dimethylbutane                     | none listed                                                    | none listed                             | none listed                                                                                                                                                     |
| 3-Methylpentane                        | none listed                                                    | none listed                             | none listed                                                                                                                                                     |
| Isohexane                              | none listed                                                    | none listed                             | none listed                                                                                                                                                     |
| n-Pentane                              | 600 ppm                                                        | 120 ppm TWA; 350 ppm IDLH               | 100 ppm TWA; 2950 mg/m <sup>3</sup> TWA                                                                                                                         |
| Cyclopentane                           | 600 ppm                                                        | 600 ppm TWA; 1720 mg/m <sup>3</sup> TWA | none listed                                                                                                                                                     |
| Hydrocarbons, Includes chemicals below | none listed                                                    | none listed                             | none listed                                                                                                                                                     |

#### OSHA Vacated PELs:

10 ppm TWA (unless specified in 1910.1028)  
No OSHA Vacated PELs are listed for this chemical.  
Isopentane:  
No OSHA Vacated PELs are listed for this chemical.  
2,3-Dimethylbutane:  
No OSHA Vacated PELs are listed for this chemical.  
3-Methylpentane:  
No OSHA Vacated PELs are listed for this chemical.  
Isohexane:  
No OSHA Vacated PELs are listed for this chemical.  
n-Pentane:  
600 ppm TWA; 1800 mg/m<sup>3</sup> TWA  
Cyclopentane:  
600 ppm TWA; 1720 mg/m<sup>3</sup> TWA  
Hydrocarbons, Includes chemicals below:  
No OSHA Vacated PELs are listed for this chemical.

#### Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.  
Skin: Wear appropriate protective gloves to prevent skin exposure.  
Clothing: Wear appropriate protective clothing to prevent skin exposure.  
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

#### \*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*

Physical State: Liquid  
Color: Colorless  
Odor: mild odor - gasoline-like

PH: Not available.  
Vapor Pressure: 485 mm Hg @ 20C  
Evaporation Rate: 2.5  
Viscosity: >1.0 (butyl acetate=1)  
Freezing Point: Not available.  
Melting Point: Not available.  
Decomposition Temperature: Not available.  
Solubility in water: Insoluble.  
Specific Gravity/Density: 0.643 @ 60°F  
Molecular Formula: Hydrocarbon  
Molecular Weight: Not available

#### \*\*\*\* SECTION 10 - STABILITY AND REACTIVITY \*\*\*\*

Chemical Stability:  
Stable under normal temperatures and pressures.  
Conditions to Avoid:  
Incompatible materials, ignition sources, excess heat.  
Incompatibilities with Other Materials:  
May explode with nitrogen tetroxide, potential violent reaction with strong oxidizers.  
Hazardous Decomposition Products:  
Carbon monoxide, carbon dioxide.  
Hazardous Polymerization: Has not been reported.

#### \*\*\*\* SECTION 11 - TOXICOLOGICAL INFORMATION \*\*\*\*

##### RTECS#:

CAS# 71-43-2: CYI400000  
CAS# 75-83-2: Unlisted.  
CAS# 78-78-4: EK4430000  
CAS# 79-29-8: EJ9350000  
CAS# 96-14-0: Unlisted.  
CAS# 109-66-0: R23/24/50/00  
CAS# 109-66-0: R23/24/50/00  
CAS# 287-92-3: GX2390000  
CAS# 68476-50-6: Unlisted.  
LD50/LC50:  
CAS# 71-43-2: Dermal, guinea pig: LD50 = >9400 uL/kg; Draize test, rabbit, eye: 88 mg Moderate; Draize test, rabbit, eye: 2 mg/24H Severe; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, mouse: LC50 = 980 ppm; Inhalation, rat: LC50 = 10000 ppm/7H; Oral, mouse: LD50 = 4700 mg/kg; Oral, rat: LD50 = 930 mg/kg; Skin, rabbit: LD50 = 4700 uL/kg.  
CAS# 75-83-2: Unlisted.  
CAS# 78-78-4: Unlisted.  
CAS# 79-29-8: Unlisted.  
CAS# 96-14-0: Unlisted.  
CAS# 107-83-5: Unlisted.  
CAS# 109-66-0: Inhalation, rat: LC50 = 364 gm/m<sup>3</sup>/4H; Oral, rat: LD50 = >2000 mg/kg.  
CAS# 287-92-3: Inhalation, mouse: LC50 = 72 gm/m<sup>3</sup>; Inhalation, rat: LC50 = 106 gm/m<sup>3</sup>; Oral, mouse: LD50 = 12800 mg/kg; Oral, rat: LD50 = 12800 mg/kg.  
CAS# 68476-50-6: Unlisted.  
Carcinogenicity:  
Benzene - ACGIH: A1 - Confirmed Human Carcinogen  
California: carcinogen; initial date 2/27/87  
NIOSH: potential occupational carcinogen  
NTP: Known carcinogen  
OSHA: Select carcinogen  
IARC: Group 1 carcinogen  
Neohexane - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Isopentane - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
2,3-Dimethylbutane - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
3-Methylpentane - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Isohexane - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
n-Pentane - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Cyclopentane - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Hydrocarbons, Includes chemicals below - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Epidemiology:  
Epidemiological studies involving petroleum refinery workers indicate persons with routine exposure to petroleum or one of its constituents may be at an increased risk to the development of benign neoplasms, digestive tract cancer, and skin cancer.  
Teratogenicity: Not available.  
Reproductive Effects:  
No information available.

Neurotoxicity:  
No information available.  
Mutagenicity:  
No information available.  
Other Studies:  
See actual entry in RTECS for complete information.

\*\*\* SECTION 12 - ECOLOGICAL INFORMATION \*\*\*

Ecotoxicity:  
This chemical is expected to cause some oxygen depletion in aquatic systems. It has a low potential to affect aquatic systems. It has a low potential to affect aquatic organisms, secondary waste treatment microorganisms and the germination of some plants. It has a moderate potential to affect the germination and growth of some plants.

\*\*\* SECTION 13 - DISPOSAL CONSIDERATIONS \*\*\*

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.  
US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.  
RCRA P-List: None listed.  
RCRA U-Series: CAS# 71-43-2; waste number U019 (Ignitable waste, Toxic waste).

\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*

US DOT  
Shipping Name: PETROLEUM DISTILLATES, N.O.S.  
Hazard Class: 3  
UN Number: UN1268  
Packing Group: II  
Canadian TDG  
No information available.

\*\*\* SECTION 15 - REGULATORY INFORMATION \*\*\*

US FEDERAL  
TSCA

CAS# 71-43-2 is listed on the TSCA inventory.  
CAS# 78-92-2 is listed on the TSCA inventory.  
CAS# 79-29-8 is listed on the TSCA inventory.  
CAS# 96-14-0 is listed on the TSCA inventory.  
CAS# 107-83-5 is listed on the TSCA inventory.  
CAS# 109-66-0 is listed on the TSCA inventory.  
CAS# 287-92-3 is listed on the TSCA inventory.  
CAS# 68476-50-6 is listed on the TSCA inventory.  
Health & Safety Reporting List  
None of the chemicals are on the Health & Safety Reporting List.  
Chemical Test Rules  
None of the chemicals in this product are under a Chemical Test Rule.  
Section 12b  
TSCA Significant New Use Rule  
None of the chemicals are listed under TSCA Section 12b.  
TSCA  
None of the chemicals in this material have a SNUR under TSCA.

SARA  
CERCLA Hazardous Substances and corresponding RQs  
CAS# 71-43-2: 10 lb final RQ (receives an adjustable RQ of 10 lbs base  
SARA Section 302 Extremely Hazardous Substances  
None of the chemicals in this product have a TPQ.  
SARA  
CAS# 71-43-2: acute, chronic, flammable.  
CAS# 78-92-2: acute, flammable.  
CAS# 96-14-0: acute, flammable.  
CAS# 107-83-5: acute, flammable.  
CAS# 109-66-0: acute, chronic, flammable.  
CAS# 287-92-3: flammable.  
Section 313  
This chemical is not at a high enough concentration to be reportable under Section 313.  
Clean Air Act  
CAS# 71-43-2 is listed as a hazardous air pollutant (HAP).  
This material does not contain any Class 1 Ozone depleters.  
This material does not contain any Class 2 Ozone depleters.  
Clean Water Act  
CAS# 71-43-2 is listed as a Hazardous Substance under the CWA.  
CAS# 71-43-2 is listed as a Priority Pollutant under the Clean Water Act.  
CAS# 71-43-2 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:  
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

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Benzene can be found on the following state right to know lists:  
California, New Jersey, Pennsylvania, Minnesota, Massachusetts.  
Neohexane can be found on the following state right to know lists:  
New Jersey, Pennsylvania, Massachusetts.  
Isopentane can be found on the following state right to know lists:  
New Jersey, Pennsylvania, Massachusetts.  
1-Dimethylbenzene can be found on the following state right to know lists:  
New Jersey, Pennsylvania, Massachusetts.  
3-Methylpentane can be found on the following state right to know lists:  
Pennsylvania, Massachusetts.  
Isobutane can be found on the following state right to know lists:  
Pennsylvania, Minnesota, Massachusetts.  
n-Pentane can be found on the following state right to know lists:  
California, New Jersey, Pennsylvania, Minnesota, Massachusetts.  
Cyclopentane can be found on the following state right to know lists:  
New Jersey, Pennsylvania, Massachusetts.  
Hydrocarbons New Jersey, Pennsylvania, Massachusetts.  
Hydrocarbons includes chemicals below is not present on state lists from CA, PA, MN, MA, FL, or NJ.  
The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:  
WARNING: This product contains Benzene, a chemical known to the state of California to cause cancer.  
WARNING: This product contains Benzene, a chemical known to the state of California to cause birth defects or other reproductive harm.  
WARNING: This product contains Benzene, a chemical known to the state of California to cause birth defects or other reproductive harm.  
California No Significant Risk Level:  
CAS# 71-43-2: 7 ug/day NSRL  
European/International Regulations  
European Labeling in Accordance with EC Directives  
Hazard Symbols: T F N  
Risk Phrases:  
R 11 Highly flammable.  
R 36/38 Irritating to eyes and skin.  
R 46/53 May cause cancer.  
R 51/53 Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.  
R 65 Harmful; may cause lung damage if swallowed.  
R 66 Repeated exposure may cause skin dryness or cracking.  
R 67 Vapors may cause drowsiness and dizziness.

Safety Phrases:  
S 9 Keep container in a well-ventilated place.  
S 16 Keep away from sources of ignition - No smoking.  
S 29 Do not empty into drains.  
S 33 Take precautionary measures against static discharges.  
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.  
S 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

WGK (Water Danger/Protection)  
CAS# 71-43-2: 3  
CAS# 75-83-2: No information available.  
CAS# 78-92-2: 1  
CAS# 79-29-8: No information available.  
CAS# 96-14-0: 1  
CAS# 107-83-5: 1  
CAS# 109-66-0: 1  
CAS# 287-92-3: 1  
CAS# 68476-50-6: No information available.

United Kingdom Occupational Exposure Limits  
United Kingdom Maximum Exposure Limits  
CAS# 71-43-2: MEL-United Kingdom, TWA 3 ppm TWA

Canada  
CAS# 71-43-2 is listed on Canada's DSL List.  
CAS# 75-83-2 is listed on Canada's DSL List.  
CAS# 78-92-2 is listed on Canada's DSL List.  
CAS# 79-29-8 is listed on Canada's DSL List.  
CAS# 96-14-0 is listed on Canada's DSL List.  
CAS# 107-83-5 is listed on Canada's DSL List.  
CAS# 109-66-0 is listed on Canada's DSL List.  
CAS# 287-92-3 is listed on Canada's DSL List.  
CAS# 68476-50-6 is listed on Canada's DSL List.  
This product has a WHMIS classification of B2, D2B.  
CAS# 71-43-2 is listed on Canada's Ingredient Disclosure List.  
CAS# 75-83-2 is listed on Canada's Ingredient Disclosure List.  
CAS# 78-92-2 is listed on Canada's Ingredient Disclosure List.  
CAS# 79-29-8 is listed on Canada's Ingredient Disclosure List.  
CAS# 96-14-0 is listed on Canada's Ingredient Disclosure List.  
CAS# 107-83-5 is listed on Canada's Ingredient Disclosure List.  
CAS# 109-66-0 is listed on Canada's Ingredient Disclosure List.  
CAS# 287-92-3 is listed on Canada's Ingredient Disclosure List.  
CAS# 68476-50-6 is listed on Canada's Ingredient Disclosure List.



Exposure Limits

CAS# 71-43-2: OEL-AUSTRALIA:TWA 5 ppm (16 mg/m3);Carcinogen  
OEL-BELGIUM:TWA 10 ppm (32 mg/m3);Carcinogen JAN9  
OEL-BULGARIA:TWA 10 ppm (32 mg/m3);STEL 25 ppm (80 mg/m3)  
OEL-DENMARK:TWA 5 ppm (15 mg/m3);STEL 10 ppm (30 mg/m3)  
OEL-FINLAND:TWA 5 ppm (15 mg/m3);STEL 10 ppm (30 mg/m3);Skin;CAR  
OEL-FRANCE:TWA 5 ppm (16 mg/m3);Carcinogen  
OEL-GERMANY:Skin;Carcinogen  
OEL-HUNGARY:STEL 5 mg/m3;Skin;Carcinogen  
OEL-INDIA:TWA 10 ppm (30 mg/m3);Carcinogen  
OEL-JAPAN:TWA 10 ppm (32 mg/m3);STEL 25 ppm (80 mg/m3);CAR  
OEL-THE NETHERLANDS:TWA 10 ppm (30 mg/m3);Skin  
OEL-THE PHILIPPINES:TWA 10 ppm (30 mg/m3);Skin  
OEL-POLAND:TWA 30 ppm (84 mg/m3);Skin  
OEL-RUSSIA:TWA 10 ppm (30 mg/m3);STEL 25 ppm (15 mg/m3);Skin;CAR  
OEL-SWEDEN:TWA 1 ppm (3 mg/m3);STEL 5 ppm (16 mg/m3);Skin;CAR  
OEL-SWITZERLAND:TWA 5 ppm (16 mg/m3);Skin;Carcinogen  
OEL-THAILAND:TWA 10 ppm (30 mg/m3);STEL 25 ppm (7 mg/m3)  
OEL-TURKEY:TWA 20 ppm (64 mg/m3);Skin  
OEL-UNITED KINGDOM:TWA 10 ppm (30 mg/m3)  
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV  
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV  
CAS# 109-66-0: OEL-AUSTRALIA:TWA 600 ppm (1800 mg/m3);STEL 750 ppm (2250 mg/m3)  
OEL-BELGIUM:TWA 600 ppm (1770 mg/m3);STEL 750 ppm (2210 mg/m3)  
OEL-DENMARK:TWA 500 ppm (1500 mg/m3)  
OEL-FINLAND:TWA 500 ppm (1500 mg/m3);STEL 625 ppm (1800 mg/m3)  
OEL-FRANCE:TWA 600 ppm (1800 mg/m3)  
OEL-HUNGARY:TWA 500 ppm (1500 mg/m3)  
OEL-JAPAN:TWA 300 ppm (880 mg/m3)  
OEL-THE NETHERLANDS:TWA 600 ppm (1800 mg/m3) JAN9  
OEL-THE PHILIPPINES:TWA 1000 ppm (2950 mg/m3)  
OEL-POLAND:TWA 100 mg/m3  
OEL-RUSSIA:TWA 300 ppm (880 mg/m3);STEL 300 mg/m3  
OEL-SWEDEN:TWA 600 ppm (1800 mg/m3);STEL 750 ppm (2000 mg/m3)  
OEL-SWITZERLAND:TWA 600 ppm (1800 mg/m3)  
OEL-TURKEY:TWA 1000 ppm (2950 mg/m3)  
OEL-UNITED KINGDOM:TWA 600 ppm (1800 mg/m3);STEL 750 ppm (2250 mg/m3)  
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGI TLV  
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV  
CAS# 287-92-3: OEL-AUSTRALIA:TWA 600 ppm (1720 mg/m3)  
OEL-BELGIUM:TWA 600 ppm (1720 mg/m3)  
OEL-DENMARK:TWA 300 ppm (850 mg/m3)  
OEL-FRANCE:TWA 600 ppm (1720 mg/m3)  
OEL-THE NETHERLANDS:TWA 600 ppm (1720 mg/m3) JAN9  
OEL-SWITZERLAND:TWA 600 ppm (1720 mg/m3)  
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV  
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

\*\*\* SECTION 16 - ADDITIONAL INFORMATION \*\*\*

MSDS Creation Date: 3/10/1999 Revision #8 Date: 8/21/2002

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users of this information should determine the suitability of the information for their particular purposes and be aware that we shall not be liable for any claims, losses or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

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INDEX: D32453420 CAT NO: H3124 PO NBR: P0095809

\*\*\* MATERIAL SAFETY DATA SHEET \*\*\*

Hydrogen Peroxide 3%  
40069

\*\*\* SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\*

MSDS Name: Hydrogen Peroxide 3%  
Catalog Numbers:  
S74882-1, S74882-2, S748821, S748822, NC9950148, H312 4, H312 500,  
H312-4, H312-500, H3124, H312500, H312P 4, H312P4, H312P4, H324 500,  
H324-500, H324500, NC9034022, NC9472802, NC9513651, NC9726857, NC9935879,  
XXH312120AL, XXH312200LI, XXH31220LI, XXH32455GA

Synonyms:

None

Company Identification:

Fisher Scientific  
1 Reagent Lane  
Fairlawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

\*\*\* SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS \*\*\*

| CAS#      | Chemical Name     | %   | EINECS#   |
|-----------|-------------------|-----|-----------|
| 7722-84-1 | Hydrogen peroxide | 3.0 | 231-765-0 |
| 7732-18-5 | Water             | 97  | 231-791-2 |

Hazard Symbols: None Listed.  
Risk Phrases: None Listed.

\*\*\* SECTION 3 - HAZARDS IDENTIFICATION \*\*\*

EMERGENCY OVERVIEW

Appearance: Clear liquid.

Caution! May cause skin irritation. May cause respiratory and digestive tract irritation. May cause severe eye irritation and possible injury.

Target Organs: No data found.

Potential Health Effects

Eye: Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. Vapors may cause eye irritation.

Skin: May cause skin irritation. May cause skin discoloration. May cause reddening of the skin.

Ingestion: May cause irritation of the digestive tract. May lead to distention before reuse. Flush skin with plenty of soap and water.

Inhalation: Irritation of esophagus and stomach.  
May cause respiratory tract irritation. Irritation may lead to chemical pneumonitis and pulmonary edema.

Chronic: No information found.

\*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid if irritation develops or persists. Wash clothing before reuse. Flush skin with plenty of soap and water.

Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupsful of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

Antidote:

None reported.

\*\*\* SECTION 5 - FIRE FIGHTING MEASURES \*\*\*

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full

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protective gear. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes.

Extinguishing Media:

Use extinguishing media most appropriate for the surrounding fire. Use flooding quantities of water as spray.

Autoignition temperature: Not available.

Flash point: Not available.

Explosion Limits, upper: Not available.

Explosion Limits, lower: Not available.

NFPA Rating: (estimated) Health: 1; Flammability: 0; Instability: 1

\*\*\* SECTION 6 - ACCIDENTAL RELEASE MEASURES \*\*\*

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

\*\*\* SECTION 7 - HANDLING AND STORAGE \*\*\*

Handling: Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

\*\*\* SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION \*\*\*

Engineering Controls: Ventilation or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

| Exposure Limits   |             |                                      |                                      |
|-------------------|-------------|--------------------------------------|--------------------------------------|
| Chemical Name     | ACGIH       | NIOSH                                | OSHA - Final PELs                    |
| Hydrogen peroxide | 1 ppm       | 1 ppm TWA; 1.4 mg/m <sup>3</sup> TWA | 1 ppm TWA; 1.4 mg/m <sup>3</sup> TWA |
| Water             | none listed | none listed                          | none listed                          |

OSHA Vacated PELs:

Hydrogen peroxide:  
1 ppm TWA; 1.4 mg/m<sup>3</sup> TWA

Water:  
No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*

Physical State:

Liquid

Color:

Clear

Odor:

Slight

pH:

Not available.

Vapor Pressure:

Not available.

Vapor Density:

>1.00

Evaporation Rate:

Not available.

Flash Point:

Not available.

Freezing/ Melting Point:

Not available.

Decomposition Temperature:

Not available.

2,806

Solubility in water: Soluble.  
Specific Gravity/Density: >1.000  
Molecular Formula: C<sub>10</sub>H<sub>12</sub>O<sub>2</sub>  
Molecular Weight: 160

\*\*\* SECTION 10 - STABILITY AND REACTIVITY \*\*\*

Chemical Stability:  
Decomposes slowly to release oxygen.  
Conditions to Avoid:  
Incompatible materials, light, ignition sources, metals, excess heat,  
reducing agents, alkaline materials, oxidizers, temperatures above  
300°C.

Incompatibilities with Other Materials:  
Peroxides, desiccants, acetic acid, acetic anhydride, acetone, alcohols, aldehydes, amines, aluminates, aluminum isopropoxide + heavy metal salts, 2-amino-4-methylazobenzene, aromatic hydrocarbons + trifluoroacetic acid, azelaic acid + sulfuric acid, benzenesulfonic anhydride, tert-butanol + sulfuric acid, carboxylic acids, carbon, coal, diethyl ether, 3,5-dimethyl-3-hexanol + sulfuric acid, 2-ethoxyethanol + dimethylphenylphosphine, diphenyl diselenide, ethyl acetate, formic acid, polyacrylamide, toluene, ethyl acetate, formic acid, methacrylic acid, methylacrylamide, hydrogen selenide, iron (III) sulfate + palladium catalyst, hydrogen selenide, iron (III) sulfate + 2-methylpyridine + sulfuric acid, iron (II) sulfate + nitric acid + sodium carboxymethylcellulose, ketenes, ketones + nitric acid, lead + trioxane, lithium tetrahydroaluminate, mercury (II) oxide + nitric acid, metals, metal oxides or metal salts, methanol + tert-amine + platinum catalyst, methanol + phosphoric acid, 4-methyl-2,4,6-triazatricyclo-octene-8-ene-3,5-dione + potassium hydroxide, nitric acid + soil, nitric acid + thiourea, nitrogenous bases, organic compounds, organic materials, sulfuric acid, alcohols, aldehydes, amines, aluminates, aluminum isopropoxide + heavy metal salts, poly(acetoxyacrylic acid lactone) + poly(2-hydroxyacrylic acid), sulfuric acid, tetrahydrothiophene, tin(II) chloride, unsaturated compounds, and vinyl acetate.

Hazardous Decomposition Products:  
Nitrogen oxides, hydrogen gas, oxygen, hydrazoic acid.

Hazardous Polymerization: Has not been reported

\*\*\* SECTION 11 - TOXICOLOGICAL INFORMATION \*\*\*

RTECS#:  
CAS# 7722-84-1: MX0887000 MX0888000 MX0890000 MX0899000  
MX0899500 MX0900000

CAS# 7732-18-5: ZC0110000

LD50/LC50:  
CAS# 7722-84-1: Draize test, rabbit, eye: 1 mg Severe; Inhalation, rat: LC50 = 2 gm/m<sup>3</sup>/4h; Inhalation, rat: LC50 = 2000 mg/kg; Oral, mouse: LD50 = 2000 mg/kg; Oral, rabbit: LD50 = 820 mg/kg; Oral, rat: LD50 = 1510 mg/kg; Oral, rat: LD50 = 10 mg/kg; Oral, rat: LD50 = 3750 mg/kg; Skin, rat: LD50 = 4050 mg/kg; Skin, rat: LD50 = 3 gm/kg; Skin, rat: LD50 = 4060 mg/kg; Oral, rat: LD50 = >90 mL/kg.

Carcinogenicity:  
Hydrogen peroxide -  
ACGIH: A3 - Animal Carcinogen  
IARC: Group 3 carcinogen

Water -  
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology:  
No information available.

Teratogenicity:  
No information available.

Reproductive Effects:  
No information available.

Neurotoxicity:  
No information available.

Mutagenicity:  
No information available.

Other Studies:  
See actual entry in RTECS for complete information.

\*\*\* SECTION 12 - ECOLOGICAL INFORMATION \*\*\*

Other  
No information available.

\*\*\* SECTION 13 - DISPOSAL CONSIDERATIONS \*\*\*

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.  
RCRA U-Series: None listed.

\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*

US DOT  
No information available  
Canadian TDG  
No information available.

\*\*\* SECTION 15 - REGULATORY INFORMATION \*\*\*

US FEDERAL

TSCA

CAS# 7722-84-1 is listed on the TSCA inventory.  
CAS# 7732-18-5 is listed on the TSCA inventory.  
Health & Safety Reporting List:  
None of the chemicals are on the Health & Safety Reporting List.  
Chemical Test Rules  
None of the chemicals in this product are under a Chemical Test Rule.  
Section 12b  
None of the chemicals are listed under TSCA Section 12b.  
TSCA Significant New Use Rule  
None of the chemicals in this material have a SNUR under TSCA.

SARA  
CERCLA Hazardous Substances and corresponding RQs  
None of the chemicals in this material have an RQ.  
SARA Section 302 Extremely Hazardous Substances  
CAS# 7722-84-1: 1,000 lb TPQ (concentration > 52%)  
SARA Codes  
CAS # 7722-84-1: acute, flammable.

Section 313  
No chemicals are reportable under Section 313.

Clean Air Act:  
This material does not contain any hazardous air pollutants.  
This material does not contain any Class 2 Ozone depleters.  
This material does not contain any Class 2 Ozone depleters.

Clean Water Act:  
None of the chemicals in this product are listed as Hazardous Substances under the CWA.  
None of the chemicals in this product are listed as Priority Pollutants under the CWA.  
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:  
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE  
Hydrogen peroxide can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

Massachusetts:  
This is not present on state lists from CA, PA, MN, MA, FL, or NJ.  
California No Significant Risk Level:  
None of the chemicals in this product are listed.  
European/International Regulations:  
None of the chemicals in this product are listed with EC Directives Hazard Symbols: Not available.

Risk Phrases:  
Safety Phrases:  
WGK (Water Danger/Protection)  
CAS# 7722-84-1: 0  
CAS# 7732-18-5: No information available.

United Kingdom Occupational Exposure Limits  
CAS# 7722-84-1: OES-United Kingdom, TWA 1 ppm TWA; 1.4 mg/m<sup>3</sup> TWA  
CAS# 7732-18-5: OES-United Kingdom, STEL 2 ppm STEL; 2.8 mg/m<sup>3</sup> STEL  
CAS# 7722-84-1: OES-United Kingdom, STEL 2 ppm STEL; 2.8 mg/m<sup>3</sup> STEL

United Kingdom Maximum Exposure Limits  
Canada  
CAS# 7722-84-1 is listed on Canada's DSL List.  
CAS# 7732-18-5 is listed on Canada's DSL List.  
This product has a WHMIS classification of D2B.  
CAS# 7722-84-1 is listed on Canada's Ingredient Disclosure List.  
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

Exposure  
CAS# 7722-84-1: OEL-AUSTRIA: TWA 1 ppm (1.5 mg/m<sup>3</sup>)  
OEL-BELGIUM: TWA 1 ppm (1.4 mg/m<sup>3</sup>)  
OEL-DENMARK: TWA 1 ppm (1.4 mg/m<sup>3</sup>)  
OEL-FINLAND: TWA 1 ppm (1.4 mg/m<sup>3</sup>); STEL 3 ppm (4.2 mg/m<sup>3</sup>)  
OEL-FRANCE: TWA 1 ppm (1.5 mg/m<sup>3</sup>)  
OEL-GERMANY: TWA 1 ppm (1.4 mg/m<sup>3</sup>)  
OEL-THE NETHERLANDS: TWA 1 ppm (1.4 mg/m<sup>3</sup>)  
OEL-THE PHILIPPINES: TWA 1 ppm (1.4 mg/m<sup>3</sup>)  
OEL-SWEDEN: TWA 1 ppm (1.4 mg/m<sup>3</sup>)  
OEL-SWITZERLAND: TWA 1 ppm (1.4 mg/m<sup>3</sup>)  
OEL-UNITED KINGDOM: TWA 1 ppm (1.5 mg/m<sup>3</sup>); STEL 2 ppm (3 mg/m<sup>3</sup>)

\*\*\* SECTION 16 - ADDITIONAL INFORMATION \*\*\*

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