

Material Safety Data Sheet

Envishield-

Date of issue : 05.05.2008

Product Detail :

Trade name : ENVISHIELD

Indication : For OT moping & fumigation.

Marketed By-

UPS HYGIENES PVT.LTD.

**B-508, Shivparvati Apt, Satya Nagar,
Saibaba Mandir Rd, Borivali (w), Mumbai 400 092.**

INDIA. Tel : 91-22-65214567.

Website : www.upshygiene.com

Email : info@upshygiene.com

HAZARDOUS INFORMATION-

Flammable. Causes redness, watering, itching.

Causes eye and skin irritation.

Causes digestive and respiratory tract irritation.

PHYSICAL DATA-

Description : Mixture of substances listed below with harmless additions.

Contains :

Silver nitrate solution 0.01 %w/v

CAS : 7761-88-8

Hydrogen peroxide 11 %w/v

CAS : 7722-84-1

Form : Fluid

Colour : colourless

Smell : peroxide smell

Melting Point : Not determined.

Boiling point : Not determined.

Flash point : Not applicable.

Self inflammability : product is not self igniting.

Danger Of Explosion : product is not explosive.

Miscibility with water : fully miscible.

HAZARDOUS INGREDIENT-

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

FIRST AID INFORMATION-

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid.

Skin:

Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.

Ingestion:

Induce vomiting, keep head lower than hips to prevent aspiration. Get medical aid.

Inhalation:

Move victim to fresh air immediately. Get medical aid if cough or other symptoms appear.

Notes to Physician:

Treat symptomatically and supportively.

PERSONAL PROTECTION

Ensure adequate ventilation.

Keep away from ignition source.

ENVIRONMENTAL PROTECTION-

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spills with absorbent (vermiculite, sand, fuller's earth) and place in plastic bags for later disposal. Shut off ignition sources. Keep out of sewers.

HANDLING & STORAGE-

Handling:

Wear gloves. Use with adequate ventilation. Wash thoroughly after handling. Ground all containers when transferring.

Storage:

Keep away from heat, sparks, and flame. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Engineering Controls:

Use adequate ventilation to keep airborne concentrations low. Ventilation equipment must be explosion - proof.

STABILITY & REACTIVITY –

Stability: The product is stable. It contains a stabilizer.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials

Incompatibility with various substances: Reactive with combustible materials, organic materials, metals, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Light sensitive.

Hazardous Polymerization:

Has not been reported.

TOXICOLOGICAL INFORMATION-

Toxic Effects on Humans:

Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of ingestion, of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

May cause cancer and may affect genetic material based on animal data.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects:

Skin: Causes severe skin irritation and possible burns. Absorption into skin may affect behavior/central nervous system (tremor, ataxia, convulsions), respiration (dyspnea, pulmonary emboli), brain.

Eyes: Causes severe eye irritation, superficial clouding, corneal edema, and may cause burns.

Inhalation: Causes respiratory tract irritation with coughing, lacrimation. May cause chemical burns to the respiratory tract. May affect behavior/Central nervous system (insomnia, headache, ataxia, nervous tremors with numb extremities).

ECOLOGICAL INFORMATION -

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short/long term degradation products are to be expected.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Transport Information

Class 3 Flammable liquid

For both maritime & air transport.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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 should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall we 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.

Material Safety Data Sheet

Silver Nitrate, 0.0025N in methanol

- 1 -

Section 1 - Chemical Product and Company Identification

MSDS Name:

Silver Nitrate, 0.0025N in methanol

Catalog Numbers:

LC 22742

Synonyms:

None

Company Identification:

LabChem Inc

200 William Pitt Way

Pittsburgh, PA 15238

Company Phone Number:

(412) 826-5230

Emergency Phone Number:

(800) 424-9300

CHEMTREC Phone Number:

(800) 424-9300

Section 2 - Composition, Information on Ingredients

CAS# Chemical Name: Percent

67-56-1 Methanol Balance

7761-88-8 Silver nitrate <1

Section 3 - Hazards Identification

Emergency Overview

Appearance: Colorless liquid.

Warning! *Flammable liquid. Keep away from heat, sparks, and flame.*

Flash point: 52°F. Causes eye and skin irritation. Causes digestive and respiratory tract irritation.

Target Organs: None.

Potential Health Effects

Eye: May cause eye irritation, vision loss or impairment.

Skin:

Skin contact can result in defatting, mild dermatitis.

Ingestion:

May be fatal or cause blindness if swallowed.

Inhalation:

ISO9001:2000 Certified

Material Safety Data Sheet

Silver Nitrate, 0.0025N in methanol

- 2 -

Chronic:

Chronic inhalation or ingestion may cause argyria characterized by blue-gray discoloration of the eyes, skin and mucous membranes. Chronic skin contact may cause permanent discoloration of the skin. Methanol – blurred or painful vision, conjunctivitis, possible. Mutagenic or reproductive effects.

Section 4 - First Aid Measures

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid.

Skin:

Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.

Ingestion:

Induce vomiting, keep head lower than hips to prevent aspiration. Get medical aid.

Inhalation:

Move victim to fresh air immediately. Get medical aid if cough or other symptoms appear.

Notes to Physician:

Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:

Vapors heavier than air, may travel considerable distance and flash back from source of ignition. Flammable liquid is poisonous - wear respiratory gear. Use flooding quantities of water as fog (streams may spread fire), cool all containers. Dangerous fire/negligible explosion hazard when exposed to heat or flame. Hazardous reactions with strong oxidizers. Vapor-air mixtures explosive.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature:

725°F

Flash Point:

52°F

NFPA Rating:

CAS# 7732-18-5: Not published.

CAS# 67-56-1 Health-1; flammability-3; reactivity-0

Explosion Limits:

Lower: 6.7 Upper: 36

Section 6 - Accidental Release Measures

Material Safety Data Sheet

Silver Nitrate, 0.0025N in methanol

- 3 -

Section 7 - Handling and Storage

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Use adequate ventilation to keep airborne concentrations low. Ventilation equipment must be explosion - proof.

Exposure Limits:

Chemical Name: ACGIH NIOSH OSHA

Silver nitrate None of the components are on this list.

None of the components

are on this list.

None of the components

are on this list.

Methyl alcohol 200 ppm TWA;250 ppm

STEL;skin - potential

for cutaneous absorption

200 ppm TWA; 260

mg/m³ TWA

200 ppm TWA; 260

mg/m³ TWA;

OSHA Vacated PELs:

Methyl alcohol: 200ppm TWA; 260mg/m³ TWA

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. Do not wear contact lenses when working with

chemicals.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Firefighting-- any self-contained breathing apparatus with full facepiece operated in pressuredemand mode. Use supplied air (SA) respirators or self-contained breathing apparatus (SCBA) at 2000ppm; SA or SCBA with Facepiece at 10,000ppm; above 10,000ppm use type C SAF in positive pressure/continuous flow mode; pos.press. SCBA for escape.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Color: Colorless

Odor: Alcohol like

pH: No information found.

Vapor Pressure: 97 mm Hg @20C

Material Safety Data Sheet

Silver Nitrate, 0.0025N in methanol

- 4 -

Vapor Density: 1.1

Evaporation Rate: (ether=1) 5.9(TTE)

Viscosity: No information found.

Boiling Point: 148°F

Freezing/Melting Point: -144°F

Decomposition Temperature: No information found.

Solubility in water: Soluble

Specific Gravity/Density: 0.8

Molecular Formula: Mixture

Molecular Weight: No information found.

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures up to boiling point.

Conditions to Avoid:

Oxidizers

Incompatibilities with Other Materials:

Incompatible with acetylene, ammonium hydroxide, aziridine, calcium carbide, ethanol, ethanol and nitric acid, ethylene hydroperoxide, hydrogen peroxide, magnesium, arsenic, and cuprous acetylde.

Oxidizers

Hazardous Decomposition Products:

Nitrogen oxides, oxides of silver, oxides of carbon, formaldehyde.

Hazardous Polymerization:

Has not been reported.

Section 11 - Toxicological Information

RTECS:

CAS# 7732-18-5: ZC0110000.

CAS# 67-56-1: PC1400000

LD50/LC50:

CAS# 7761-88-8:

Oral, mouse: LD50 = 50 mg/kg.

CAS# 67-56-1:

Inhalation, rat: LC50 =64000 ppm/4H

Oral, mouse: LD50 = 7300 mg/kg

Oral, rabbit: LD50 = 14200 mg/kg

Oral, rat: LD50 = 5628 mg/kg

Skin, rabbit: LD50 = 15800 mg/kg.

Carcinogenicity:

CAS# 67-56-1: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 67-56-1: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

Epidemiology:

Eye, skin, mucous membrane irritant, central nervous system depressant

Teratogenicity:

Reproductive:

Material Safety Data Sheet

Silver Nitrate, 0.0025N in methanol

- 5 -

Mutagenicity:

Neurotoxicity:

Section 12 - Ecological Information

No information found.

Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Flammable liquid, n.o.s.

(Methanol)

Hazard Class: 3

UN Number: UN1993

Packing Group: PG II

Section 15 - Regulatory Information

US Federal

TSCA:

CAS# 67-56-1 is listed on the TSCA Inventory.

CAS# 7761-88-8 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):

CAS# 7761-88-8: final RQ = 1 pound (0.454 kg)

CAS# 67-56-1: final RQ = 5000lbs (2270kg)

CERCLA/SARA Section 313:

Subject to section 313 of SARA Title III

OSHA - Highly Hazardous:

None of the components are on this list.

US State

State Right to Know:

Silver nitrate and methanol can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Massachusetts.

California Regulations:

European/International Regulations

Canadian DSL/NDSL:

CAS# 67-56-1 is listed on Canada's DSL List.

CAS# 7761-88-8 is listed on Canada's DSL List.

Material Safety Data Sheet

Silver Nitrate, 0.0025N in methanol

- 6 -

Canada Ingredient Disclosure List:

CAS# 67-56-1 is listed on Canada's Ingredient Disclosure List.

CAS# 7761-88-8 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: April 18, 1999

Revision Date: October 15, 2007

Information in this MSDS is from available published sources and is believed to be accurate. No warranty, express or implied.

Material Safety Data Sheet

Hydrogen Peroxide 30% MSDS

Section 1: Chemical Product and Company Identification

Product Name: Hydrogen Peroxide 30%
Catalog Codes: SLH1552
CAS#: Mixture.
RTECS: Not applicable.
TSCA: TSCA 8(b) inventory: Water; Hydrogen Peroxide
CI#: Not applicable.
Synonym: Hydrogen Peroxide 30%
Chemical Name: Not applicable.
Chemical Formula: Not applicable.
Contact Information:
Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396
US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**
Order Online: ScienceLab.com
CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300
International CHEMTREC, call: 1-703-527-3887
For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name CAS # % by Weight

Water 7732-18-5 70

Hydrogen Peroxide 7722-84-1 30

Toxicological Data on Ingredients: Hydrogen Peroxide: ORAL (LD50): Acute: 2000 mg/kg [Mouse]. DERMAL (LD50): Acute: 4060 mg/kg [Rat]. 2000 mg/kg [pig]. VAPOR (LC50): Acute: 2000 mg/m 4 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:

Very hazardous in case of skin contact (irritant), of eye contact (irritant). Hazardous in case of skin contact

(corrosive), of eye contact (corrosive), of ingestion, . Slightly hazardous in case of inhalation (lung sensitizer).

Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and

respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of

respiratory tract, characterized by coughing, choking, or shortness of breath. Prolonged exposure may result in

skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Inflammation of the eye

is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling,

reddening, or, occasionally, blistering.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available.

p. 1

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance is toxic to lungs, mucous membranes.

Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at

least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: combustible materials

Explosion Hazards in Presence of Various Substances: Slightly explosive in presence of open flames and sparks, of heat, of organic materials, of metals, of acids.

Fire Fighting Media and Instructions:

Fire: Small fires: Use water. Do not use dry chemicals or foams. CO₂, or Halon may provide limited control.

Large fires: Flood fire area with water from a distance. Move containers from fire area if you can do it without

risk. Do not move cargo or vehicle if cargo has been exposed to heat. Fight fire from

p. 2

maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of

water until well after fire is out. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned

hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

/Hydrogen peroxide,

aqueous solution, with not less than 8% but less than 20% Hydrogen peroxide; Hydrogen peroxide, aqueous

solution, with not less than 20% but not more than 60% Hydrogen peroxide (stabilized as necessary)/ [QC

Reviewed] [U.S. Department of Transportation. 2000 Emergency Response Guidebook.

RSPA P 5800.8 Edition.

Washington, D.C: U.S. Government Printing Office, 2000,p. G-140]

Special Remarks on Fire Hazards:

Most cellulose (wood, cotton) materials contain enough catalyst to cause spontaneous ignition with 90% Hydrogen Peroxide. Hydrogen Peroxide is a strong oxidizer. It is not flammable itself, but it can cause spontaneous combustion of flammable materials and continued support of the combustion because it liberates oxygen as it decomposes.

Hydrogen peroxide mixed with magnesium and a trace of magnesium dioxide will ignite immediately.

Special Remarks on Explosion Hazards:

Soluble fuels (acetone, ethanol, glycerol) will detonate on a mixture with peroxide over 30% concentration, the violence increasing with concentration.

Explosive with acetic acid, acetic anhydride, acetone, alcohols, carboxylic acids, nitrogen containing bases,

As₂S₃, Cl₂ + KOH, FeS, FeSO₄ + 2 methylpyridine + H₂SO₄, nitric acid, potassium permanganate, P₂O₅,

H₂Se, Alcohols + H₂SO₄, Alcohols + tin chloride, Antimony trisulfide, chlorosulfonic acid, Aromatic hydrocarbons +

trifluoroacetic acid, Azelaic acid + sulfuric acid (above 45 C), Benzenesulfonic anhydride, tert-butanol + sulfuric

acid, Hydrazine, Sulfuric acid, Sodium iodate, Tetrahydrothiophene, Thiodiglycol, Mercurous oxide, mercuric

oxide, Lead dioxide, Lead oxide, Manganese dioxide, Lead sulfide, Gallium + HCl, Ketenes + nitric acid, Iron (II)

sulfate + 2-methylpyridine + sulfuric acid, Iron (II) sulfate + nitric acid, + sodium carboxymethylcellulose (when

evaporated), Vinyl acetate, trioxane, water + oxygenated compounds (eg: acetaldehyde, acetic acid, acetone,

ethanol, formaldehyde, formic acid, methanol, 2-propanol, propionaldehyde), organic compounds. Beware: Many

mixtures of hydrogen peroxide and organic materials may not explode upon contact. However, the resulting

combination is detonatable either upon catching fire or by impact.

EXPLOSION HAZARD: SEVERE, WHEN HIGHLY CONCENTRATED OR PURE H₂O₂ IS EXPOSED TO

HEAT, MECHANICAL IMPACT, OR CAUSED TO DECOMPOSE CATALYTICALLY BY METALS & THEIR

SALTS, DUSTS & ALKALIES.

ANOTHER SOURCE OF HYDROGEN PEROXIDE EXPLOSIONS IS FROM SEALING THE MATERIAL IN

STRONG CONTAINERS. UNDER SUCH CONDITIONS EVEN GRADUAL

DECOMPOSITION OF HYDROGEN

PEROXIDE TO WATER + 1/2 OXYGEN CAN CAUSE LARGE PRESSURES TO BUILD UP IN THE

CONTAINERS WHICH MAY BURST EXPLOSIVELY.

Fire or explosion:

May explode from friction, heat or contamination. These substances will accelerate burning when involved in a fire.

May ignite combustibles (wood, paper, oil, clothing, etc.). Some will react explosively with hydrocarbons (fuels).

Containers may explode when heated. Runoff may create fire or explosion hazard. /Hydrogen peroxide, aqueous

solution, stabilized, with more than 60% Hydrogen peroxide; Hydrogen peroxide, stabilized/ [QC Reviewed] [U.S.

Department of Transportation. 2000 Emergency Response Guidebook. RSPA P 5800.8 Edition. Washington,

D.C: U.S. Government Printing Office, 2000,p. G-143] .

Fire or explosion: These substances will accelerate burning when involved in a fire. Some may decompose

explosively when heated or involved in a fire. May explode from heat or contamination. Some will react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, oil, clothing, etc.). Containers may explode when heated. Runoff may create fire or explosion hazard. /Hydrogen peroxide, aqueous solution, with not less than 8% but less than 20% Hydrogen peroxide; Hydrogen peroxide, aqueous solution, with not less than 20% but not more than 60% Hydrogen peroxide (stabilized as necessary)/ [QC Reviewed] [U.S. Department of Transportation. 2000 Emergency Response Guidebook. RSPA P 5800.8 Edition. Washington, D.C: U.S. Government Printing Office, 2000,p. G-140] (Hydrogen Peroxide)

Section 6: Accidental Release Measures

Small Spill:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:

p. 3

Corrosive liquid. Oxidizing material.

Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep locked up.. Keep container dry. Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, combustible materials, organic materials, metals, acids, alkalis.

Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalis, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers. Do not store above 8°C (46.4°F). Refrigerate Sensitive to light. Store in light-resistant containers.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:

Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Boots.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

Hydrogen Peroxide

TWA: 1 (ppm) from ACGIH (TLV) [United States]

TWA: 1 (ppm) from OSHA (PEL) [United States]

TWA: 1 STEL: 2 [Canada]

TWA: 1.4 (mg/m³) from NIOSH

TWA: 1.4 (mg/m³) from OSHA (PEL) [United States]

TWA: 1 (ppm) [United Kingdom (UK)]

TWA: 1.4 (mg/m³) [United Kingdom (UK)] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Odorless.

Taste: Slightly acid. Bitter

Molecular Weight: Not applicable.

Color: Clear Colorless.

p. 4

pH (1% soln/water): Not available

Boiling Point: 108°C (226.4°F)

Melting Point: -33°C (-27.4°F)

Critical Temperature: Not available.

Specific Gravity: 1.1 (Water = 1)

Vapor Pressure: 3.1 kPa (@ 20°C)

Vapor Density: 1.1 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether.

Solubility:

Easily soluble in cold water.

Soluble in diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable. It contains a stabilizer.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials

Incompatibility with various substances: Reactive with reducing agents, combustible materials, organic materials, metals, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Light sensitive.

Incompatible with reducing materials, ethers (dioxane, furfuran, tetrahydrofuran), oxidizing materials, Metals(eg.

potassium, sodium lithium, iron, copper, brass, bronze, chromium, zinc, lead, silver, nickel), metal oxides (eg.

cobalt oxide, iron oxide, lead oxide, lead hydroxide, manganese oxide), metal salts (eg.

calcium permanganate,

salts of iron), manganese, asbestos, vanadium, platinum, tungsten, molybdeum,

triethylamine, palladium, sodium

pyrophosphate, carboxylic acids, cyclopentadiene, formic acid, rust, ketones, sodium carbonate, alcohols, sodium borate, aniline, mercurous chloride, rust, nitric acid, sodium pyrophosphate, hexavalent chromium compounds, tetrahydrofuran, sodium fluoride organic matter, potassium permanganate, urea, chlorosulfonic acid, manganese dioxide, hydrogen selenide, charcoal, coal, sodium borate, alkalies, cyclopentadiene, glycerine, cyanides (potassium, cyanide, sodium cyanide), nitrogen compounds..
Caused to decompose catalytically by metals (in order of decreasing effectiveness): Osmium, Palladium, Platinum, Iridium, Gold, Silver, Manganese, Cobalt, Copper, Lead. Concentrated hydrogen peroxide may decompose violently or explosively in contact with iron, copper, chromium, and most other metals and their salts, and dust.
(Hydrogen Peroxide)

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

p. 5

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact.

Toxicity to Animals:

Acute oral toxicity (LD50): 6667 mg/kg (Mouse) (Calculated value for the mixture).

Acute dermal toxicity (LD50): 6667 mg/kg (pig) (Calculated value for the mixture).

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH [Hydrogen Peroxide]. Classified 3

(Not classifiable for human.) by IARC [Hydrogen Peroxide].

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Hydrogen Peroxide].

Mutagenic for bacteria

and/or yeast. [Hydrogen Peroxide].

Contains material which may cause damage to the following organs: blood, upper respiratory tract, skin, eyes,

central nervous system (CNS).

Other Toxic Effects on Humans:

Very hazardous in case of skin contact (irritant).

Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of ingestion, of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

May cause cancer and may affect genetic material based on animal data. May be tumorigenic. (Hydrogen Peroxide)

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects:

Skin: Causes severe skin irritation and possible burns. Absorption into skin may affect behavior/central nervous

system (tremor, ataxia, convulsions), respiration (dyspnea, pulmonary emboli), brain.

Eyes: Causes severe eye irritation, superficial clouding, corneal edema, and may cause burns.

Inhalation: Causes respiratory tract irritation with coughing, lacrimation. May cause chemical burns to the

respiratory tract. May affect behavior/Central nervous system (insomnia, headache, ataxia, nervous tremors with

numb extremities) and may cause ulceration of nasal tissue, and , chemical pneumonia, unconsciousness, and

possible death. At high concentrations, respiratory effects may include acute lung damage, and delayed

pulmonary edema. May affect blood.

Ingestion: Causes gastrointestinal tract irritation with nausea, vomiting, hypermotility, and diarrhea. Causes gastrointestinal tract burns. May affect cardiovascular system and cause vascular collapse and damage. May affect blood (change in leukocyte count, pigmented or nucleated red blood cells). May cause difficulty in swallowing, stomach distension and possible cerebral swelling. May affect behavior/central nervous system (tetany, excitement).

Chronic Potential Health Effects:

Prolonged or repeated skin contact may cause dermatitis.

Repeated contact may also cause corneal damage.

Prolonged or repeated ingestion may affect metabolism (weight loss).

Prolonged or repeated inhalation may affect respiration, blood.

(Hydrogen Peroxide)

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short/long term degradation products are to be expected.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

p. 6

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 5.1: Oxidizing material.

Identification: : Hydrogen peroxide, aqueous solution UNNA: 2014 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:

New York acutely hazardous substances: Hydrogen Peroxide

Rhode Island RTK hazardous substances: Hydrogen Peroxide

Pennsylvania RTK: Hydrogen Peroxide

Florida: Hydrogen Peroxide

Minnesota: Hydrogen Peroxide

Massachusetts RTK: Hydrogen Peroxide

New Jersey: Hydrogen Peroxide

TSCA 8(b) inventory: Hydrogen Peroxide

SARA 302/304/311/312 extremely hazardous substances: Hydrogen Peroxide

CERCLA: Hazardous substances.: Hydrogen Peroxide: 1 lbs. (0.4536 kg);

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):

CLASS C: Oxidizing material.

CLASS E: Corrosive liquid.

CLASS F: Dangerously reactive material.

DSCL (EEC):

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 1

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:

p. 7

Gloves.

Full suit.

Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Face shield.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 05:46 PM

Last Updated: 11/06/2008 12:00 PM

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 should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com 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 ScienceLab.com has been advised of the possibility of such damages.

p. 8

Material Safety Data Sheet MSDS 006 Rev.: D Product: CIDEX® Activated Dialdehyde Solution Issue date: 9-28-05 Company: ADVANCED STERILIZATION PRODUCTS Product code: ASPCIDEX Product name: CIDEX Activated Dialdehyde Solution CO 24503-1 Page 1 of 7

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Supplier:

Advanced Sterilization Products
33 Technology Drive
Irvine, CA 92618

Material Safety Data Sheet MSDS 006 Rev.: D Product: CIDEX® Activated Dialdehyde Solution Issue date: 9-28-05 Company: ADVANCED STERILIZATION PRODUCTS Product code: ASPCIDEX Product name: CIDEX Activated Dialdehyde Solution CO 24503-1 Page 1 of 7

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Supplier:

Advanced Sterilization Products
33 Technology Drive
Irvine, CA 92618

Material Safety Data Sheet MSDS 006 Rev.: D Product: CIDEX® Activated Dialdehyde Solution Issue date: 9-28-05 Company: ADVANCED STERILIZATION PRODUCTS Product code: ASPCIDEX Product name: CIDEX Activated Dialdehyde Solution CO 24503-1 Page 1 of 7

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Supplier:

Advanced Sterilization Products
33 Technology Drive
Irvine, CA 92618

Material Safety Data Sheet MSDS 006 Rev.: D Product: CIDEX® Activated Dialdehyde Solution Issue date: 9-28-05 Company: ADVANCED STERILIZATION PRODUCTS Product code: ASPCIDEX Product name: CIDEX Activated Dialdehyde Solution CO 24503-1 Page 1 of 7

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Supplier:

Advanced Sterilization Products
33 Technology Drive
Irvine, CA 92618