



**Section 4 FIRST AID MEASURES**

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. Oxygen may be administered if breathing is difficult. Seek medical attention.

**Eye Contact:** Check for and remove any contact lenses. Flush eyes with large amounts of water for 15 minutes. Cold water may be used. Get medical attention.

**Skin Contact:** Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing and shoes before reuse. 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. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Section 5 FIRE FIGHTING MEASURES**

**Flash Point & Method:** 20° C (68 °F) CC, Pensky-Martens

Flammable Limits: LEL: 2% UEL: 12% (Isopropyl alcohol)

Autoignition Temperature: The lowest known value is 450° C (842° F) (Isopropyl alcohol)

**General Hazard:** Flammable in presence of open flames, sparks and static discharge. Vapor may cause flash fire. No sparking tools should be used. Take precautionary measures against static discharges.

**Fire Fighting Instructions:**

Small Fire: Use dry chemical powder

Large Fire: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

**Fire Fighting Equipment:** Use an approved/certified respirator or equivalent.

**Hazardous Combustion Products:** Carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...)

**Section 6 ACCIDENTAL RELEASE MEASURES**

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

**Large Spill or Leak:** Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed.

<b>Section 7</b>	<b>HANDLING AND STORAGE</b>
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**Handling:** Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Harmful if swallowed. When handling, wear eye protection and rubber gloves. **KEEP OUT OF REACH OF CHILDREN.** Wash thoroughly after handling. Launder contaminated clothing/equipment before reuse.

**Storage:** Store in a segregated and approved area. Keep container in a cool, well-ventilated area (between 18°C - 28°C / 64°F - 82°F) out of direct sunlight and away from incompatible materials (See STABILITY AND REACTIVITY Section 10). Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Follow all MSD sheet and Label warnings even after container is emptied.

<b>Section 8</b>	<b>EXPOSURE CONTROL / PERSONAL PROTECTION</b>
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**Engineering Controls:** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. See section 2 for component exposure guidelines.

- Local Exhaust ventilation acceptable
- Mechanical ventilation recommended
- Use explosion – proof ventilation equipment.
- Do not use in confined space without mechanical ventilation equipment.

**Personal Protection:**

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

**Hand Protection:**

- Gloves Recommended
- Solvex                       Neoprene
- Butyl                          Buna
- Natural Latex             Cotton/Jersey

**Eye Protection:** Ensure that eyewash stations are proximal to the work-station location

- Safety Glasses         Splash Goggles

**Other Recommendations:** Ensure the safety showers are proximal to the work-station location. Wear lab coat.

**In Case of Large Spill:** Splash goggles, full suit, vapor respirator, boots, gloves and 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.

**Section 9 PHYSICAL AND CHEMICAL PROPERTIES**

Density.....0.931g/cm<sup>3</sup> (25° C / 77° F)  
 pH.....6.5 – 7.5 [Neutral]  
 Boiling Point.....80° C (176° F)  
 % Volatile.....40 %  
 Freezing Point.....Weighted average: -86° C (-122.8° F)  
 % Solids.....NA  
 Vapor Density (Air=1).....The highest known value is 2.07 (Isopropyl alcohol)  
 Evaporation Rate .....Weighted average: 1.68 compared to Butyl acetate.  
 Solubility in Water.....Partially soluble in cold water  
 Viscosity.....37cp @ 25° C; 25cp @ 40° C  
 Molecular Weight.....NA (mixture)  
 Physical State.....Liquid  
 Non-Exempt VOC (g/l).....NA  
 Appearance:.....Yellow  
 Odor.....Alcohol like

**Section 10 STABILITY AND REACTIVITY**

General: Stable  
 Incompatible Materials and Conditions to Avoid: Reactive with oxidizing agents  
 Hazardous Polymerization: Will not occur.

**Section 11 TOXICOLOGY INFORMATION**

**Results of Component Toxicity Test Performed:**

LD<sub>50</sub> Rabbit (dermal) 12,800 mg/kg (Isopropanol)  
 LD<sub>50</sub> Rat (inhalation) 16,000 ppm: 8 hours (Isopropanol)  
 LD<sub>50</sub> Rabbit (oral) 6410 mg/kg (Isopropanol)

**Human Experience:** OSHA / NTP / DHHS - This product does not contain chemicals on the 11<sup>th</sup> Report on Carcinogens (RoC) NIOSH: None of the chemicals are listed on the NIOSH carcinogen list.

**Section 12 ECOLOGICAL INFORMATION**

LC<sub>50</sub> Fish (96 hours) >100 mg/l (Isopropanol)  
 Products of Degradation: Carbon oxide (CO, CO<sub>2</sub>) and water, nitrogen oxides (NO, NO<sub>2</sub>...)

**Section 13 DISPOSAL CONSIDERATIONS**

RCRA 40 CFR 261 Classifications: Code D001 Ignitable Waste  
 Federal, State, and Local laws governing disposal of material can differ.  
 Ensure proper disposal compliance with proper authorities before disposal.

<b>Section 14</b>	<b>TRANSPORTATION INFORMATION</b>
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U.S. DOT Information

Basic Description: HAZARDOUS MATERIAL  
 Proper Shipping Name: Isopropanol  
 Hazard Class: 3  
 Packaging Group: II  
 UN Number: UN1219  
 Limitations: NA

IATA

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<b>Section 15</b>	<b>REGULATORY INFORMATION</b>
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United States Federal Regulations:

MSDS complies with the OSHA Hazard Communication Rule, 29 CFR 1910.1200.

CERCLA/Superfund, 40 CFR 117, 302:

---None of the chemicals are CERCLA hazards ---

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:

Section 302 – Extremely hazardous substances (40 CFR 355):

---None of the chemicals are extremely hazardous substances ---

Section 311/312 – Material Safety Data Sheet Requirements (40 CFR 370):

- By our hazard evaluation, this product is non-hazardous.
- By our hazard evaluation, this product is hazardous. It should be reported under the following EPA hazard.
  - Immediate (acute) health hazard
  - Delayed (chronic) health hazard
  - Sudden release of pressure hazard
  - Reactive hazard

Section 313 – List of Toxic Chemicals (40CFR 372):

This product does not contain chemicals ( at level of 1% or greater) that are found on the 313 list of Toxic Chemicals.

Toxic Substance Control Act (TSCA): **All substances are TSCA listed.**

Resource Conservation and Recovery Act (RCRA 40 CFR 261) Subpart C & D:

**Refer to Section 13 for RCRA classification.**

STATE REGULATIONS:

The following chemicals are specifically listed by individual state; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state

STATE	CHEMICAL	C.A.S. NUMBER	WEIGHT %
PA, NJ, MA	Isopropyl alcohol	67-63-0	33 – 38

California Proposition 65: --- None of the chemicals are on the Proposition 65 list---

## INTERNATIONAL REGULATIONS:

**Canada WHMIS:**

904 (1050 FR) Isopropanol is listed on Ingredient Disclosure List (SOR/88-64)  
Class B-2: Flammable liquid with a flash point lower than 37.8° C (100° F)

All Intentionally present components are listed on the DSL

**Europe EINECS Numbers:** Isopropanol #200-661-7

Methyl bis(2-hydroxyethyl) cocoalkyl quaternary ammonium chlorides  
# 274-846-6

**Sections 16****OTHER INFORMATION**

## LABEL INFORMATION:

For Shipping Label information refer to section 14

Product label warnings are as follows (Comparable CHIP Safety & Risk phrases are noted):

- Flammable (R10)
- Harmful if Swallowed (R22)
- Keep out of the reach of children (S2)
- Avoid contact with skin and eyes (24/25)
- Wear suitable gloves and eye /face protection (S37/39)

## NFPA HAZARD RATING:

(3) Fire            (3) Health            (0) Reactivity

## REVISION DATES, SECTIONS, REVISED BY:

01-MAR-94    Original release date  
02-APR-01,    Reviewed  
05-DEC-01    Revised section 11 (ld)  
01-JULY-04    New Format, All Sections, mkb  
09-AUG-04    Revised section 7, mkb  
20-JAN-06    Revised section 15, mkb  
17-Aug-07    Revised section 11, mkb

## ABBREVIATIONS USED IN THIS DOCUMENT:

NE – Not Established, NA – Not Applicable, NIF – No Information Found

## ABRIDGED LIST OF REFERENCES:

Code of Federal Regulations (CFR)  
The Sigma-Aldrich Library of Regulatory and Safety Data  
Chemical Guide and OSHA Hazardous Communication Standard  
The Environmental Protection Agency ([www.epa.gov](http://www.epa.gov))  
American National Standards Institute

To the best of our knowledge, the information contained herein is accurate.

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.