4. First Aid

Inhalation: Remove individual to fresh air. If not breathing, give artificial respiration or oxygen as appropriate.

Skin Contact: Flush skin with water for 15 minutes and remove contaminated clothing. Wash shoes and clothing before reuse.

Eye: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids apart.

Ingestion: Immediately drink water to dilute, induce vomiting. Consult a physician immediately. Never give anything by mouth to an unconscious person.

5. Fire Fighting Measures

Flammability Summary (OSHA):

Extremely flammable.

Flammable Properties:

Flash Point: 56°F
Autoignition Temperature: ND

Upper Flammable/Lower Flammable Limit, % in air: 3.5 for 1-propanol; 2.1 for 1-propanol.

Fire Extinguishing Media:

Do not use water. Use equipment appropriate to the main cause of the fire. Do not allow contaminated water to enter sewers or waterways.

Fire Fighting Instructions:

Do not use water. Use equipment appropriate to the main cause of the fire. Use water to cool containers.

5. Accidental Release Measures

Personal Protection for Emergency Situations:

Evaluate the area of all unnecessary personnel. Eliminate any ignition sources. Contain the release and eliminate its source if this can be done safely.

Spill Mitigation Procedures

Air Release:

Hazardous concentrations in air may be found in local spill area and immediately downwind. Vapor may be pressurized by the use of water fog. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste. Do not flush to sewer. US regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of stipulated quantities. US Coast Guard National Response Center is 800-424-8882.

Water Release:

This material is soluble in water. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste. Notify all downstream users of possible contamination.

Land Release:

Create a dike or berm to contain materials. Absorb spills with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Contain all contaminated water for disposal and/or treatment.

Additional Spill Information:

Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personnel protection equipment prior to the start of any response. Evacuate all non-essential personnel. Dispose of spill residues per guidelines under Section 13, Disposal Considerations.
### 7. Handling and Storage
- **Handling:** Use with adequate ventilation. Vent containers before opening. Do not take internally. Avoid contact with skin, eyes, and clothing. 
- **Storage:** Keep container closed when not in use. Store in a cool area away from ignition sources and oxidizers. 

#### Shelf Life Limitations:
- See label or certificate of analysis for shelf life if applicable.

#### Incompatible Materials for Storage:
- Refer to Section 10, "Incompatible Materials."

### 8. Exposure Controls and Personal Protection
- **Ventilation:** Local exhaust ventilation or engineering controls are normally performed when handling or using this product. However, use general exhaust ventilation if the area is not in proper working order. 
- **Respiratory Protection:** Use self-contained positive pressure air supply or air-purifying respirators as needed. 
- **Protective Clothing Type:** Use impermeable clothing. 
- **Other:** A safety shower and eye bath should be readily available.

### 9. Physical Data
- **Physical State:** Liquid
- **Color:** Colorless
- **Odor:** Mild alcohol odor
- **Molecular Weight:** 60.10 for 1-propanol @ 30% in water solution.
- **pH (25 Deg. C):** Not determined
- **Osmosimeter Water Coeff.:** No data
- **Solubility in Water:** 100%
- **Bulk Density:** Not applicable
- **Density:** 0.63
- **Vapor Density (Air = 1):** Not determined
- **Vapor Pressure:** @ 25 Deg. C: Not determined
- **Evaporation Rate (Btu/lb):** Not determined
- **Volatility % by vol.:** 40%
- **Boiling Point:** Not determined
- **Freezing Point:** Not determined

### 10. Stability and Reactivity
- **Stability and Reactivity Summary:** Stable under normal conditions.
- **Reactive Properties:** 
  - **Sensitivity to Mechanical Shock:** None
  - **Hazardous Polymerization:** Will not occur
  - **Conditions to Avoid:** High temperatures, exposure to heat.
  - **Chemical Incompatibility:** See Section 10, "Incompatible Materials."
  - **Incompatible Materials:** May attack some rubbers and plastics.
  - **Hazardous Decomposition Products:** CO, CO2
  - **Decomposition Temperature:** No data

### 11. Toxological Information
- **Component Animal Toxicology for 1-propanol:** 
  - **Oral LD50 mg/kg value:** 6000 (rats), 1707 (cats), 2625 (rab)
  - **Dermal LD50 mg/kg value:** 4050 (rds)
  - **Inhalation LD50 ppm value:** 40 (300 mg/m3 (rds))
- **Product Animal Toxicity:** See above
- **Skin Irritation:** This material is expected to be minimally irritating.
- **Eye Irritation:** This material is expected to be minimally irritating.
- **Reproductive and Developmental Toxicity:** Has been found in animal studies.
- **Component Data:** All data refer to 1-propanol.
- **Mutagenicity:** Not determined
- **Carcinogenicity:** Rated A3: Confirmed Animal carcinogen with Unknown Relevance to Humans.

### 12. Ecological Information
- **Ecological Toxicity Values:** 
  - **Dangerous to aquatic life in high concentrations.**
  - **Environmental Fate:** No potential for food chain concentration.
  - **Environmental Toxicity:** No data

### 13. Disposal Considerations
- No data provided.

### 14. Transportation Information
- No data provided.

### 15. Regulatory Information
- No data provided.

### 16. Additional Information
- **The Purpose of This MSDS is to Provide Safe Handling Information for Users of the Product.** It is not intended to, nor does it, provide complete or extensive transportation, disposal, regulatory or toxicological data on the product or its components. Users who require this information are referred to relevant local, state, and federal regulations for the ingredients of interest.
- **This Material Safety Data Sheet (MSDS) has been prepared in compliance with the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200.** The information in this MSDS should be provided to all those who will use, handle, store, transport, or otherwise be exposed to this product. WE BELIEVE THIS INFORMATION TO BE ACCURATE, RELIABLE, AND UP TO DATE. BUT MAKE NO WARRANTY THAT IT IS. IF THIS MSDS IS MORE THEN THREE YEARS OLD YOU SHOULD CONTACT THE SUPPLIER TO MAKE CERTAIN THAT THE INFORMATION IS CURRENT.
- **The Possessor of this Material has the Responsibility to Insure that it is used, handled, stored, transported, and disposed of in compliance with all relevant local, state, and federal regulations.**