

# Material Safety Data Sheet

| HAZARD WARNINGS   | RISK PHRASES   | PROTECTIVE CLOTHING   |
|---|--|---|
|   | <b>Flammable material; avoid heat and sources of ignition.</b><br><b>Irritating to skin, eyes, and the respiratory system.</b><br><b>Hygroscopic -- keep container tightly sealed.</b> |     |

## Section I. Chemical Product and Company Identification

|                  |                                      |                                 |   |
|------------------|--------------------------------------|---------------------------------|---|
| Chemical Name    | <b>Isopropyl Alcohol</b>             |                                 |   |
| Catalog Number   | I0164                                | Supplier                        | TGI America<br>9211 N. Harborgate St.<br>Portland OR<br>1-800-423-8616                    |
| Synonym          | 1-Methylethanol, 2-Propanol          |                                 |   |
| Chemical Formula | (CH <sub>3</sub> ) <sub>2</sub> CHOH |                                 |   |
| CAS Number       | 67-63-0                              | In case of<br>Emergency<br>Call | <b>Chemtrec®</b><br><b>(800) 424-9300 (U.S.)</b><br><b>(703) 527-3887 (International)</b> |

## Section II. Composition and Information on Ingredients

| Chemical Name     | CAS Number | Percent (%)       | TLV/PEL        | Toxicology Data  |
|-------------------|------------|-------------------|----------------|--|
| Isopropyl Alcohol | 67-63-0    | Min. 99.5<br>(GC) | Not available. | Rat LD <sub>50</sub> (inhalation)<br>16000ppm/8H<br>Rat LD <sub>50</sub> (oral) 5045mg/kg<br>Rabbit LD <sub>50</sub> (dermal) 12800mg/kg |

## Section III. Hazards Identification

|                        |   |
|------------------------|---|
| Acute Health Effects   | Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.  |
| Chronic Health Effects | <b>CARCINOGENIC EFFECTS</b> : Not available.<br><b>MUTAGENIC EFFECTS</b> : Not available.<br><b>TERATOGENIC EFFECTS</b> : Not available.<br><b>DEVELOPMENTAL TOXICITY</b> Reproductive: rat (inhalation) 35000ppm/7H. Duration: female 1-19 days of pregnancy. Effects on embryo or fetus- Fetotoxicity.<br>rat (inhalation) 7000ppm/7H. Duration: female 1-19 days of pregnancy.<br>Specific developmental abnormalities- Musculoskeletal system.<br>Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. |

## Section IV. First Aid Measures

|              |   |
|--------------|---|
| Eye Contact  | Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes. Keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper eyelids. Seek medical attention. Treat symptomatically and supportively.  |
| Skin Contact | After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.  |
| 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 artificial respiration. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.  |
| Ingestion    | INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt, or waistband. If the victim is not breathing, administer artificial respiration. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively. |

**Section V. Fire and Explosion Data**

|                                      |   |                  |          |
|--------------------------------------|---|------------------|----------|
| Flammability                         | Flammable.  | Auto-Ignition    | 455.6°C  |
| Flash Points                         | 15°C (59°F).  | Flammable Limits | LEL 2.5% |
| Combustion Products                  | These products are toxic carbon oxides (CO, CO <sub>2</sub> ).  |                  |          |
| Fire Hazards                         | Reactive with strong oxidizers. Vapors may travel to source of ignition and flash back. Closed containers may explode from heat of a fire. Highly flammable in presence of open flames and sparks, of heat.   |                  |          |
| Explosion Hazards                    | Risks of explosion of the product in presence of mechanical impact: Not available.<br>Risks of explosion of the product in presence of static discharge: Not available.<br>No additional information is available regarding the risks of explosion. |                  |          |
| Fire Fighting Media and Instructions | Flammable liquid.<br>SMALL FIRE: Use DRY chemicals, CO <sub>2</sub> , alcohol foam or water spray.<br>LARGE FIRE: Use alcohol foam, water spray or fog.   |                  |          |

**Section VI. Accidental Release Measures**

|                            |  |
|----------------------------|--|
| Spill Cleanup Instructions | Flammable liquid. Irritating material. Hygroscopic material.<br>Keep away from heat and sources of ignition. Mechanical exhaust required. 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. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal. |
|----------------------------|--|

**Section VII. Handling and Storage**

|                                  |   |
|----------------------------------|---|
| Handling and Storage Information | FLAMMABLE. IRRITANT. HYGROSCOPIC. Handle with caution and minimize exposure. DO NOT ingest. Do not breathe gas, fumes, vapor or spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively.<br>Always store away from incompatible compounds such as oxidizing agents, acids. Reactive with strong oxidizers; may be ignited by heat, sparks or flames. Vapors may travel to source of ignition and flash back. Closed containers may explode from heat of a fire. Empty containers may pose a fire risk. Evaporate residue under a fume hood if possible. Ground all equipment containing material. Handle with caution and minimize exposure. Keep away from heat and sources of ignition. Tightly seal container and store in a cool, dry place. Use only non-sparking hand tool when handling this product. |
|----------------------------------|---|

**Section VIII. 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 station and safety shower is proximal to the work-station location. |
| Personal Protection  | Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.           |
|                      |    |
| Exposure Limits      | Not available.  |

**Section IX. Physical and Chemical Properties**

|                       |                               |                       |   |
|-----------------------|-------------------------------|-----------------------|---|
| Physical state @ 20°C | Colorless liquid.             | Solubility            | Miscible with water, alcohol, ether and chloroform. |
| Specific Gravity      | 0.79                          |                       |   |
| Molecular Weight      | 60.10                         | Partition Coefficient | Not available.                                      |
| Boiling Point         | 82 to 83°C (179.6 to 181.4°F) | Vapor Pressure        | 33 mm Hg @ 20°C                                     |
| Melting Point         | -89.5°C (-129.1°F)            | Vapor Density         | 2.1   |
| Refractive Index      | 1.3852 @ 8°C                  | Volatility            | Not available.                                      |
| Critical Temperature  | Not available.                | Odor                  | Odor of rubbing-alcohol.                            |
| Viscosity             | Not available.                | Taste                 | Slightly bitter taste.                              |

**Section X. Stability and Reactivity Data**

|                           |   |
|---------------------------|---|
| Stability                 | This material is stable if stored under proper conditions. (See Section VII for instructions) |
| Conditions of Instability | Avoid excessive heat and light.   |
| Incompatibilities         | Reactive with oxidizing agents, acids, acid anhydrides, halogens, aluminum.                   |

**Section XI. Toxicological Information**

|                       |  |
|-----------------------|--|
| RTECS Number          | NT8050000  |
| Routes of Exposure    | Eye contact. Ingestion. Inhalation. Skin contact.  |
| Toxicity Data         | Rat LD <sub>50</sub> (inhalation) 16000ppm/8H<br>Rat LD <sub>50</sub> (oral) 5045mg/kg<br>Rabbit LD <sub>50</sub> (dermal) 12800mg/kg  |
| Chronic Toxic Effects | <b>CARCINOGENIC EFFECTS</b> : Not available.<br><b>MUTAGENIC EFFECTS</b> : Not available.<br><b>TERATOGENIC EFFECTS</b> : Not available.<br><b>DEVELOPMENTAL TOXICITY</b> Reproductive: rat (inhalation) 35000ppm/7H. Duration: female 1-19 days of pregnancy.<br>Effects on embryo or fetus- Fetotoxicity.<br>rat (inhalation) 7000ppm/7H. Duration: female 1-19 days of pregnancy.<br>Specific developmental abnormalities- Musculoskeletal system.<br>Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. |
| Acute Toxic Effects   | Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.   |

**Section XII. Ecological Information**

|                    |  |
|--------------------|--|
| Ecotoxicity        | Not available.   |
| Environmental Fate | Isopropanol will enter the environment as emissions from its manufacture and use as a solvent. It naturally occurs as a plant volatile and is released during the microbial degradation of animal wastes. When released on land it is apt to volatilize and leach into groundwater and possibly biodegrade but no data on the rates of these processes was found. Its fate in groundwater is unknown. When released into water, isopropanol will volatilize and biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish. Although no data on its rate of degradation in natural waters could be found, laboratory tests and the lack of monitoring data suggests that it is not very long lived in this environment. In the atmosphere it will photodegrade primarily by reaction with hydroxyl radicals with a half-life of one to several days. Human exposure will be both in occupational atmospheres and from use of consumer products containing isopropanol as a volatile solvent. |

**Section XIII. Disposal Considerations**

|                |   |
|----------------|---|
| Waste Disposal | Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of the substance. |
|----------------|---|

**Section XIV. Transport Information**

|                      |   |
|----------------------|---|
| DOT Classification   | DOT CLASS 3: Flammable liquid.  |
| PIN Number           | UN1219  |
| Proper Shipping Name | Isopropyl alcohol   |
| Packing Group (PG)   | II  |
| DOT Pictograms       |  |

**Section XV. Other Regulatory Information and Pictograms**

|                               |   |
|-------------------------------|---|
| TSCA Chemical Inventory (EPA) | This compound is <b>ON</b> the EPA Toxic Substances Control Act (TSCA) inventory list.  |
| WHMIS Classification (Canada) | WHMIS CLASS B-2: Flammable liquid with a flash point lower than 35°C (100°F).   |
| EINECS Number (EEC)           | 200-661-7   |
| EEC Risk Statements           | R11- Highly flammable.<br>R18- In use, may form flammable/explosive vapor-air mixture.<br>R36/37/38- Irritating to eyes, respiratory system and skin. |
| Japanese Regulatory Data      | ENCS No.: 2-0207  |

**Section XVI. Other Information****Version 1.0****Validated on 9/22/1999.****Printed 2/22/2005.****Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.

Printed 2/22/2005.