Isopropyl Alcohol

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Trade name Isopropyl Alcohol 70%, 91%, 99%; 99% USP; Semi-Grade; Recovered; 2-Propanol
Synonyms Dimethyl carbinol, Isopropanol

SUPPLIER: HARCROS CHEMICALS, INC.
5200 Speaker Road
Kansas City, KS 66106-1095

SUPPLIERS TELEPHONE NUMBER: 913-321-3131
TRANSPORTATION EMERGENCY TELEPHONE NUMBER: 1-800-424-9300

MSDS No. 000123

SECTION 2 COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>70-100</td>
</tr>
</tbody>
</table>

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance Colorless liquid

Odor Aromatic. Pleasant resembling a mixture of ethanol and acetone. (slight)

Precautions WARNING! FLAMMABLE LIQUID AND VAPOR Keep away from heat and flame. CAUSES EYE IRRITATION AND MAY CAUSE SKIN IRRITATION. Use only with adequate ventilation. Avoid contact with skin, eyes and clothing.

Environmental precautions Do not flush into surface water or sanitary sewer system. Low toxicity to aquatic organisms such as bacteria, algae, protozoa and fish. Readily biodegradable.

POTENTIAL HEALTH EFFECTS

Eyes Irritating to eyes. May cause corneal inflammation.
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**Skin**  Repeated or prolonged contact can cause redness, irritation and scaling of the skin (dermatitis). Normal care and personal hygiene should prevent skin effects.

**Inhalation**  Irritation of the nose and throat, dizziness, and headache.

**Ingestion**  Depression of central nervous system can occur. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

(See Section 11 for Toxicological Information)

### SECTION 4  FIRST AID MEASURES

**Eye contact**  Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**Skin contact**  Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. When symptoms persist or in all cases of doubt seek medical advice. Wash contaminated clothing before re-use.

**Inhalation**  Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

**Ingestion**  If swallowed, call a physician or poison control center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

### SECTION 5  FIRE FIGHTING MEASURES

**FLAMMABLE PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point closed cup</td>
<td>53 °F (11.67 °C)</td>
</tr>
<tr>
<td>Flash point open cup</td>
<td>64.9 °F (18.3 °C)</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>750 °F 398.89 °C</td>
</tr>
</tbody>
</table>

**Flammable limits in air % by volume**

<table>
<thead>
<tr>
<th>Limits</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower explosion limit</td>
<td>2.0 %</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>12 %</td>
</tr>
</tbody>
</table>

**Fire and explosion**  Vapours may form explosive mixture with air. Flash back possible over considerable distance. Use water spray to disperse the vapors. NFPA Class IB flammable liquid.

**Extinguishing media**  Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Fire fighting instructions**  Self-contained breathing apparatus (SCBA) and structural firefighter's protective clothing will provide limited protection.
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Further information Keep containers and surroundings cool with water spray. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Steps to be taken in case of spill or leak Evacuate personnel to safe areas. Remove all sources of ignition. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Do not flush into surface water or sanitary sewer system.

SECTION 7 HANDLING AND STORAGE

Safe handling advice Ensure all equipment is electrically grounded before beginning transfer operations.

Storage/Transport pressure Ambient.

Further information on storage conditions Keep away from heat and sources of ignition.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES

Air contaminant levels should be controlled below the PEL or TLV for this product (see Exposure Guidelines). Mechanical ventilation may be necessary if working with this product in enclosed areas and/or at elevated temperatures. Use explosion-resistant equipment

PERSONAL PROTECTIVE EQUIPMENT

Eyes When contact with liquid is possible, use a face shield and/or chemical splash goggles. Otherwise use safety glasses with side shields or goggles.

Skin Wear suitable protective clothing, gloves and eye/face protection.

Inhalation Respiratory protection is normally not required except in emergencies or when conditions cause excessive airborne levels of mists or vapors. NIOSH-approved organic vapor air-purifying respirator, self-contained breathing apparatus, or air-supplied respirators where there may be potential for overexposure.
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EXPOSURE GUIDELINES

<table>
<thead>
<tr>
<th>Components</th>
<th>Exposure limit(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>OSHA PEL 400 ppm(983 mg/m3)</td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV (8-hour) 400 ppm(983 mg/m3)</td>
</tr>
<tr>
<td></td>
<td>ACGIH STEL 500 ppm(1,230 mg/m3)</td>
</tr>
</tbody>
</table>

PEL= Permissible Exposure Limits
TLV= Threshold Limit Value
EL= Excursion Limit
TWA= Time Weighted Average (8 hr.)
STEL= Short Term Exposure Limit (15 min.)
WEEL= Workplace Environmental Exposure Level

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance liquid
Colour Colorless
Odour Aromatic. Pleasant resembling a mixture of ethanol and acetone. (slight)
Form liquid
Boiling point/range 82.22 °C  180 °F
Vapour pressure 33 mm Hg  @ 20 °C
Vapor density 2.08
Solubility (water) completely soluble
Viscosity 3.03 cSt
Melting point/range -88.5 °C -127.3 °F
Density 0.79 g/cm3
pH 7
Evaporation rate 2.88

SECTION 10 STABILITY AND REACTIVITY

Conditions to avoid Keep away from heat and sources of ignition.
Hazardous decomposition products Combustion products include carbon dioxide, carbon monoxide and possibly other unidentified organic compounds.
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Incompatibility with other materials Can react with strong oxidizers, inorganic acids, and halogens.

Hazardous polymerization None.

SECTION 11  TOXICOLOGICAL INFORMATION

Additional Remarks Exposure can cause nausea, headache and vomiting. May be harmful by inhalation, ingestion, skin adsorption.

Eyes Irritating to eyes.

Skin .
Acute dermal LD50 (rabbit): 12,800 mg/kg

Inhalation Acute 4 hours LC50 (rat): 16,970 mg/l

Ingestion Acute oral LD50 (rat): 5,045 mg/kg

CARCINOGENICITY

This product contains no carcinogenic substances.

SECTION 12  ECOLOGICAL INFORMATION

Aquatic toxicity Low toxicity to aquatic organisms such as bacteria, algae, protozoa and fish.

LC50 (Leuciscus idus melanotus) 48 hours > 100

LC50 (Brown shrimp) 96 hours 467,923 mg/l
EC50 (Brine shrimp) 48 hours > 100 mg/l

EC50 (S. subspicatus (algae)): 72 hours > 100 mg/l
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Biodegradation  Readily biodegradable.

SECTION 13  DISPOSAL CONSIDERATIONS

Waste code  D001 - Ignitability (RQ 100 LB)  This product has the RCRA characteristic of ignitability. Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures, contamination, and spillage may change the classification.

Disposal methods  Dispose of only in accordance with local, state, and federal regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

Empty containers  Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed.

SECTION 14  TRANSPORT INFORMATION

DOT description  Isopropanol, 3, UN 1219,II  This product is regulated as a hazardous material as defined by the Department of Transportation (DOT).

IATA description  Isopropanol, 3,UN 1219,II  This product is regulated as a dangerous good as defined by ICAO/IATA for air transportation.

IMDG description  Isopropanol 3, UN 1219, II  This product is regulated as a dangerous good as defined by the IMDG Code for marine transport.

SECTION 15  REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA classification  Flammable liquid and eye irritant

TSCA Inventory Listing

Components  

<table>
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<td>67-63-0</td>
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SARA 302 Status

Contains no chemicals subject to SARA 302 reporting.

SARA 311/312 Classification
"Fire hazard", "Immediate (acute) health hazard"

SARA 313 Chemical Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
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</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>67-63-0</td>
<td>100</td>
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CERCLA Hazardous Substance

Contains no chemicals subject to CERCLA.

INTERNATIONAL REGULATIONS

Workplace Hazardous Materials Information System (WHMIS) Classification
Class B, Division 2: Flammable liquid.
Class D, Division 2, Subdivision A: Very toxic material
Class D, Division 2, Subdivision B: Toxic material.

Australian Inventory of Chemical Substances (AICS) Listing
Listed on the AICS.

Japanese Minister of International Trade and Industry (MITI) Inventory Listing
Listed on MITI.

Canadian Domestic Substance List (DSL) Inventory Listing
Listed on the DSL.

European Inventory of Existing Commercial Chemical Substances (EINECS) Listing
Listed on EINECS.

Phillipines Inventory List (PICCS)
Listed on PICCS.

Korean Inventory List
Listed on the ECL.

China Inventory List
Listed on the China inventory.
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STATE REGULATIONS
California Safe Drinking Water Act (Prop 65) Listing
Components

Contains no chemical subject to California Prop 65.

SECTION 16 OTHER INFORMATION

HAZARD RATINGS

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>NFPA</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

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