

**GC Electronics**  
1801 Morgan Street  
Rockford, IL 61102  
Phone: (815) 968-9661  
Fax: (815) 968-9731  
www.gcelectronics.com

**Product Name: Isopropyl Alcohol**  
MSDS Number: 222  
Revision Date: 11/17/04  
Supersedes Date: New  
Review Date: 6/1/10

## MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Type: Non-Aerosol Cleaner  
Product Name: **Isopropyl Alcohol**  
Part Number(s): **30-623**  
**43-1003**  
**64-354**

**Emergency Contact: Chemtrec**  
**Phone (24 hours): (800) 424-9300**

### Section 1 - Identification of Product

Chemical Name: Isopropyl Alcohol, Dimethylcarbinol, Sec-propyl Alcohol, Isopropanol, 2-propanol  
Common Name: Isopropyl Alcohol (IPA)  
Chemical Formula: CH<sub>3</sub>CHOHCH<sub>3</sub>

HMIS Ratings:	Least	0
	Slight	1
Health 2	Moderate	2
Flammability 3	High	3
Reactivity 0	Extreme	4
Personal Protection B	Gloves and Safety Glasses	B

### Section 2 - Hazardous Ingredients

Hazardous Component	CAS#	Amount
Isopropyl Alcohol	67-63-0	50%
Boiled Water		50%

### Section 3 - Physical Data

Threshold Limit (Toxicity)	400 ppm
Physical State:	Liquid
Appearance:	Transparent colorless
Solubility in Water (Miscibility):	Soluble in all proportions in water
Odor:	Pleasant
Flash Point (TOC):	11.7C 53°F
Molecular Weight:	60.10 g/mol
Liquid Density (20°C, 68°F)	0.7863 g/cm <sup>3</sup>
Boiling Point (760 mmHg):	82.4°C 180.1°F
Freezing Point:	-86°C
Specific Gravity (H <sub>2</sub> O = 1):	0.7863
Vapor Pressure at 20°C:	33 mmHg
Vapor Density (air = 1):	2.107
Melting Point:	-86°C

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Corrosivity:	Non-corrosive
Critical Temperature:	235°C
Critical Pressure:	53 atmospheres
Heat of Evaporation:	160 kal/kg (288 BTU/lb)
Heat of Combustion:	7.970 kal/kg (14.346 BTU/lb)
Viscosity at 25°C	2.1 cp
Hazards of Product:	<b>WARNING!</b> Isopropyl alcohol is highly flammable and its vapors form explosive mixture with air.

#### Section 4 - Fire & Explosion Hazard Data

Flash Point (open cup):	Tag Open Cup 11.7°C (53°F)
Auto-ignition Temperature:	453°C (850°F)
Flammable Limits in Air:	Lower 2.0%(V) Upper 12.0% (V)
Extinguishing Media:	Extinguish fires with water spray or apply alcohol-type or all-purpose-type foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.
Extinguishing Media to Avoid:	No information currently available.
Special Fire Fighting Procedures:	Use water spray to cool fire-exposed containers and structures. Use water spray to disperse vapors; re-ignition is possible.
Special Protective Equipment For Firefighters:	Use gloves and safety glasses. Firemen fighting fires of isopropyl alcohol should use necessary protective equipment and breathing apparatus as would be normally used when fighting fires where there may be danger of breathing hazardous products of combustion.
Unusual Fire and Explosion Hazards:	Vapors form from this product and may travel or be moved by air currents and ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharges or other ignition sources at locations distant from product handling point. Vapors from this material may settle in low or confined areas or travel a long distance to an ignition source and flash back explosively. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Use proper bonding and grounding during product transfer as described in National Fire Protection Association Document NFPA 77. See Section 8.3 - Engineering Controls This Material may produce a floating fire hazard Flame may be invisible. Approach fire with caution.
Burning Can Produce the Following Products:	Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

### Section 5 - Health Hazard Data

#### Effects of Single Acute Overexposure

Inhalation:	High concentrations of vapor may cause central nervous system depression, with weakness, drowsiness, and loss of consciousness. Vapor causes irritation of the respiratory tract, with coughing and chest discomfort.
Eye Contact:	Causes irritation, experienced as stinging and discomfort or pain. Corneal injury may occur.
Skin Contact:	May cause minor irritation with itching and possible slight local redness. Prolonged or repeated contact may cause defatting and drying of the skin.
Skin Absorption:	Exposure to small quantities is not expected to cause adverse health effects. Widespread or prolonged exposure may result in the absorption of harmful amounts of material, particularly in infants, leading to signs and symptoms as described for swallowing.
Swallowing:	Slightly toxic. May cause dizziness, faintness, drowsiness, decreased awareness and responsiveness, lack of coordination, abdominal discomfort, nausea, vomiting and diarrhea.

#### Chronic, Prolonged or Repeated Overexposure

Effects of Repeated Overexposure:	Isopropyl alcohol is not known to produce chronic or accumulative systemic effects, but repeated and prolonged skin contact with the liquid can cause dryness and mild irritation of the skin.
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#### Medical Conditions Aggravated By Exposure:

Skin contact may aggravate an existing dermatitis.

#### Emergency First Aid Procedures

Inhalation:	Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.
Eye Contact:	Immediately flush eyes with water and continue washing for several minutes.
Skin Contact:	Remove contact lenses, if worn. Obtain medical attention.
Swallowing:	Remove contaminated clothing. Wash skin with soap and water. If irritation persists or if contact has been prolonged, obtain medical attention.
Notes to Physician:	If patient is fully conscious, give two glasses of water. Induce vomiting. <b>This should be done only by medical or experienced first-aid personnel.</b> Obtain medical attention.
	There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

### Section 6 - Reactivity Data

Stability/Instability:	Stable
Incompatible Materials:	Strong oxidizing agents. Halogens. Strong inorganic acids. Aldehydes. Halogen compounds.
Hazardous Polymerization:	Will not occur
Inhibitors/Stabilizers:	Not applicable

### Section 7 - Spill or Leak Procedures

Steps to Be Taken if Material  
is Released or Spilled:

Extinguish and do not turn on any ignition source until the area is determined to be free from fire or explosion hazard. Spark resistant tools are recommended and the working area should be posted with NO SMOKING or other appropriate warning signs as required by the operation.

Personal Precautions:

Avoid contact with eyes. Wear suitable protective equipment.

Waste Disposal Method:

If leaks or spills occur the leaking container should be removed to the outdoors or to an isolated, well ventilated area, and the contents transferred to other suitable containers. All spills should be flushed away promptly with water. Excessive quantities of isopropyl alcohol should not be permitted to enter drains or sewers where there is danger of vapors becoming ignited.

Disposal of small quantities of isopropyl alcohol may be accomplished by removal of the waste to a safe location away from buildings or other combustible structures, then pouring the mixture on dry sand or earth and then cautiously igniting it.

Disposal of large quantities of isopropyl alcohol may be accomplished by atomizing the liquid into an approved type combustion chamber. The disposal of waste isopropyl alcohol and of materials contaminated with it is subject to local regulations regarding health and pollution.

Dispose in accordance with all applicable Federal, State, and local environmental regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

Disposal Considerations:

At very low concentrations in water, this product is biodegradable in a biological wastewater treatment plant.

Disposal methods identified are for the product as sold. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permissible under applicable rules, regulations and/or laws governing your location.

### Section 8 - Special Protection Information

Isopropyl alcohol is classified as a flammable liquid. All precautions must be taken to guard against health and hazards wherever isopropyl alcohol is handled.

Respiratory Protection:

Use self-contained breathing apparatus in high vapor concentrations.

Ventilation:

General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment. Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

Eye Protection:

Monogoggles

Protective Gloves:

Rubber, plastic

Other Protective Equipment:

Eye bath, Safety shower

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Process Hazard: Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into hot equipment under a vacuum, may result in ignitions without the presence of obvious ignition sources. Published "auto-ignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Further information is available in a technical bulletin entitled "Ignition Hazards of Organic Chemical Vapors."

### Section 9 – Special Precautions

#### Handling

General Handling: Keep away from heat, sparks and flame.  
Avoid contact with eyes.  
Keep container closed.  
Use with adequate ventilation.  
Vapor forms from this product and may travel or be moved by air currents and ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharges or other ignition sources at locations distant from product handling point and may flash back explosively.  
Wash thoroughly after handling.

#### For Industry Use Only

Ventilation: General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment. Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

Other Precautions: Vapor may settle in low or confined areas, or travel a long distance to an ignition source and flash back explosively.

Storage: No information currently available.

### Section 10 - Regulatory Information

#### Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III Sections 311 and 312

Delayed Hazard:	Yes
Fire Hazard:	Yes
Immediate Health Hazard:	Yes
Reactive Hazard:	No
Sudden Release of Pressure Hazard:	No

#### Toxic Substances Control Act (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.  
European Inventory of Existing Commercial Chemical Substances (EINECS)

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U.S. DOT

Non-Bulk

Proper Shipping Name:	Isopropanol
ID Number:	UN1219
Hazard Class:	3
Packing Group:	PG II
Labeling:	ORM-D

Bulk

Proper Shipping Name:	Isopropanol, Flammable liquid
ID Number:	UN1219
Hazard Class:	3
Packing Group:	PG II
Labeling:	Flammable liquid

<b>Disclaimer</b>
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