



SAFETY DATA SHEET

1. Identification

Product identifier Isopropanol - Isopropyl Alcohol

Other means of identification

Product code Keysight part number 8500-5344

Synonyms Propan-2-ol

Recommended use Raw material for photochemicals, raw material for cleaning agents and disinfectants, process control substance, solvent, industrial use.

Recommended restrictions None known.

Manufacturer / Importer / Supplier / Distributor information

Supplier/Manufacturer Address KMG Electronic Chemicals, Inc.
9555 W. Sam Houston Parkway South
Suite 600
Houston, Texas 77099

Telephone 713-600-3800

Emergency telephone 760-476-3960

2. Hazard(s) identification

Physical hazards Flammable liquids Category 2

Health hazards Serious eye damage/eye irritation Category 2A
Specific target organ toxicity, single exposure Category 3 narcotic effects

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes serious eye irritation. May cause drowsiness or dizziness. Highly flammable liquid and vapor.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing vapors. Wash thoroughly after handling.

Response If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water fog for extinction.

Storage Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Static accumulating flammable liquids

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
2-Propanol	Propan-2-ol	67-63-0	100

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move into fresh air and keep at rest. If breathing stops, provide artificial respiration. Get medical attention if any discomfort continues.
Skin contact	Wash skin with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation persists after washing.
Ingestion	Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Get medical attention.
Most important symptoms/effects, acute and delayed	May cause respiratory tract irritation. May cause drowsiness or dizziness. Defats the skin.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm.
General information	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

5. Fire-fighting measures

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide or dry powder.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	The product is highly flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. During fire, gases hazardous to health may be formed. Solvent vapors may form explosive mixtures with air.
Special protective equipment and precautions for firefighters	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Local authorities should be advised if significant spillages cannot be contained. Stay upwind. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering. Wear protective clothing as described in Section 8 of this safety data sheet.
Methods and materials for containment and cleaning up	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Prevent entry into waterways, sewers, basements or confined areas. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Large Spills: Dike the spilled material, where this is possible. Following product recovery, flush area with water. Cover with plastic sheet to prevent spreading. Absorb spillage with non-combustible, absorbent material. Small Spills: Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills in original containers for re-use. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage

Precautions for safe handling

The product is highly flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. Do not handle or store near an open flame, heat or other sources of ignition. Do not smoke. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Use only in well-ventilated areas. Avoid prolonged exposure. Wash thoroughly after handling. Handle and open container with care.

Conditions for safe storage, including any incompatibilities

Follow rules for flammable liquids. Keep away from heat, sparks and open flame. Store in cool place. Keep in a well-ventilated place. Keep container tightly closed. Keep in an area equipped with sprinklers. Keep this material away from food, drink and animal feed. Use care in handling/storage. Keep away from sources of ignition - No smoking.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value
2-Propanol (CAS 67-63-0)	PEL	980 mg/m ³ 400 ppm

US. ACGIH Threshold Limit Values

Material	Type	Value
2-Propanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

Material	Type	Value
2-Propanol (CAS 67-63-0)	TWA	980 mg/m ³ 400 ppm

US NIOSH Pocket Guide to Chemical Hazards: Short Term Exposure Limit (STEL)

Material	Type	Value
2-Propanol (CAS 67-63-0)	STEL	1225 mg/m ³ 500 ppm

Biological limit values

ACGIH Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
2-Propanol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls

Explosion proof exhaust ventilation should be used. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment. Provide easy access to water supply or an emergency shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear chemical goggles.

Skin protection

Hand protection

Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate chemical resistant clothing. Anti-static boots.

Respiratory protection

Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Launder contaminated clothing before reuse. Remove and isolate contaminated clothing and shoes.

9. Physical and chemical properties

Appearance Colorless liquid.

Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Alcoholic.
Odor threshold	Not available.
pH	Not applicable
Melting point/freezing point	-127.3 °F (-88.5 °C)
Initial boiling point and boiling range	180.5 °F (82.5 °C) 101.325 kPa
Flash point	53.6 °F (12.0 °C) Closed Cup
Evaporation rate	1.7
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	2.3
Flammability limit - upper (%)	12.7
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	6.05 kPa at 25 °C
Vapor density	2.1
Relative density	0.785 water=1
Solubility(ies)	Miscible
Partition coefficient (n-octanol/water)	0.05
Auto-ignition temperature	750.2 °F (399 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.79 g/cm ³
Dynamic viscosity	2.1 mPa.s
Dynamic viscosity temperature	77 °F (25 °C)
Explosive limit	No data available
Explosive properties	No data available.
Flash point class	Flammable IB
Heat of combustion (NFPA 30B)	27.4 kJ/g
Molecular formula	C ₃ H ₈ O
Molecular weight	60.1 g/mol
Oxidizing properties	No data available.
Percent volatile	100 %

10. Stability and reactivity

Reactivity	May attack some plastics, rubber and coatings.
Chemical stability	Stable under normal temperature conditions. Risk of explosion. Risk of ignition.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents. Strong acids. Alkali metals. Aluminum.
Hazardous decomposition products	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Aldehydes.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Swallowing or vomiting of the liquid may result in aspiration into the lungs.
Inhalation	Vapors may cause drowsiness and dizziness.
Skin contact	May cause skin irritation. Defats the skin.
Eye contact	Irritating to eyes.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms can include irritation, redness, scratching of the cornea, and tearing. Vapors may cause drowsiness and dizziness.

Information on toxicological effects

Acute toxicity Vapors may cause drowsiness and dizziness. Causes eye irritation. May cause central nervous system effects.

Product	Species	Test Results
2-Propanol (CAS 67-63-0)		
Acute		
<i>Oral</i>		
LD50	Rat	5045 mg/kg
Skin corrosion/irritation	May cause skin irritation. Causes mild skin irritation. Defats the skin.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory sensitization	No data available.	
Skin sensitization	Not a skin sensitizer.	
Germ cell mutagenicity	No data available.	
Carcinogenicity	None known.	
Reproductive toxicity	Not classified.	
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness. May cause respiratory irritation.	
Specific target organ toxicity - repeated exposure	None known.	
Aspiration hazard	May be harmful if swallowed and enters airways.	
Chronic effects	None known.	

12. Ecological information

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results
2-Propanol (CAS 67-63-0)		
Aquatic		
Fish	LC50 Bluegill (<i>Lepomis macrochirus</i>)	> 1400 mg/l, 96 hours
Persistence and degradability	No data available.	
Bioaccumulative potential	No data available.	
Partition coefficient n-octanol / water (log Kow)	0.05	
Mobility in soil	No data available.	
Other adverse effects	The product is a volatile organic compound which has a photochemical ozone creation potential.	

13. Disposal considerations

Disposal instructions	Dispose of this material and its container at hazardous or special waste collection point. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 °F
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN1219
UN proper shipping name ISOPROPANOL (ISOPROPYL ALCOHOL)
Transport hazard class(es) 3
Subsidiary class(es) -
Packing group II
Special precautions for user Not available.
Special provisions IB2, T4, TP1
Packaging exceptions 150
Packaging non bulk 202
Packaging bulk 242
ERG number 129

IATA

UN number UN1219
UN proper shipping name ISOPROPANOL (ISOPROPYL ALCOHOL)
Transport hazard class(es) 3
Subsidiary class(es) -
Packing group II
Environmental hazards No
Labels required 3
ERG Code 3L
Special precautions for user Read safety instructions, MSDS and emergency procedures before handling.

IMDG

UN number UN1219
UN proper shipping name ISOPROPANOL (ISOPROPYL ALCOHOL)
Transport hazard class(es) 3
Subsidiary class(es) -
Packing group II
Environmental hazards
Marine pollutant No
Labels required 3
EmS F-E, S-D
Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.
CERCLA/SARA Hazardous Substances - Not applicable.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

2-Propanol (CAS 67-63-0) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
2-Propanol	67-63-0	100

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

US state regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

2-Propanol (CAS 67-63-0)

US. New Jersey Worker and Community Right-to-Know Act

2-Propanol (CAS 67-63-0) 500 lbs

US. Pennsylvania RTK - Hazardous Substances

2-Propanol (CAS 67-63-0)

US. Rhode Island RTK

2-Propanol (CAS 67-63-0)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

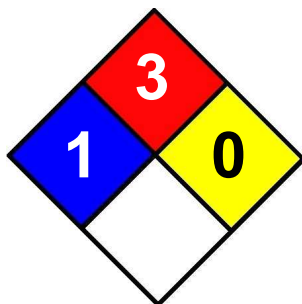
16. Other information, including date of preparation or last revision

Issue date 21-September-2013

Revision date -

Version # 01

NFPA Ratings



Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.