



Quality System Certified to ISO 9001:2008

SAI Global File #004008

Burlington, Ontario, Canada

ISOPROPYL ALCOHOL: ELECTRONICS CLEANER

824-LIQUID

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: Isopropyl Alcohol: Electronics Cleaner

SDS Code: 824-Liquid

Related Part # 824-100ML, 824-500ML, 824-1L, 824-4L, 824-20L, 824-1G, 824-100MLCA, 824-1LCA, 824-500MLCA

Recommended Use and Restriction on Use

Use: Cleaner for electronics and high technology components

Uses Advised Against: Not for use on monitor screens or glass with anti-glare coatings

Details of Manufacturer or Importer

Manufacturer

MG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA

MG Chemicals (Head Office)
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Surrey, British Columbia V4N 4E7
CANADA

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E-MAIL support@mgchemicals.com
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☎ +1-905-331-1396
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E-MAIL info@mgchemicals.com

E-MAIL (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY—leaks, spills, fires, exposures or accidents
USA or CANADA: Call CHEMTREC ☎: **+1-800-424-9300**



For emergencies involving dangerous goods; Collect 24/7
CANADA: Call CANUTEC ☎: **+1-613-996-6666** or ***666** on cellular phones

I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID****Section 2: Hazard(s) Identification****Classification of Hazardous Chemical****GHS Categories**

Criteria	Category	Signal Word	Pictograms
Flammable Liquid	2	Danger	Flame
Eye irritation	2A	Warning	Exclamation
Specific Target Organ Toxicity Single Exposure	3	Warning	Exclamation

Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories rankings do not allow comparisons between classes.

Label Elements

Signal Word	DANGER
Pictograms	Hazard Statements
	H225: Highly flammable liquid and vapor
	H319: Causes serious eye irritation H336: May cause drowsiness and dizziness
Prevention	Precautionary Statements
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P243	Take action to prevent static discharges.
P261	Avoid breathing vapors/mist.
P271	Use only outdoors or in well-ventilated area.

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Prevention	Precautionary Statements
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	Precautionary Statements
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water (or shower).
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
Storage	Precautionary Statements
P403 + P235	Store in well-ventilated place. Keep cool.
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/international regulations.

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	% (weight)
67-63-0	propan-2-ol ^{a)}	99.7%

^{a)} Commonly known as isopropyl alcohol (IPA)

I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID****Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
IF ON SKIN (or hair)	P303 + P361 + P353
Immediate Symptoms	<i>dry skin, redness</i>
Response	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water (or shower).
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	<i>irritation, tearing, redness, pain</i>
Response	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	P304 + P340 + P312
Immediate Symptoms	<i>cough, dizziness, drowsiness, headaches, weakness, unconsciousness</i>
Response	Remove person to fresh air and keep comfortable for breathing. If feeling unwell: Call a POISON CENTRE/doctor.
IF SWALLOWED	P301 + P330 + P331
Immediate Symptoms	<i>nausea, headaches, dizziness, weakness, unconsciousness</i>
Response	Rinse mouth. Do NOT induce vomiting.

Section 5: Fire-Fighting Measures

Response	In case of fire: Use dry chemical, carbon dioxide, water fog, or chemical foam to extinguish. Use water spray to cool containers.
Specific Hazards	Vapor may accumulate in low-lying areas. It can cause flash fire or ignite explosively.
Combustion Products	Produces carbon oxides (CO, CO ₂)
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID****Section 6: Accidental Release Measures**

Personal Protection	Use personal protection recommended in Section 8.
Precautions for Response	Remove all sources of ignition. Avoid breathing the vapors/mist. Do not flush to sewer.
Environmental Precautions	Avoid releasing to the environment.
Containment Methods	Contain with inert absorbent (such as soil, sand, vermiculite).
Cleaning Methods	Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash spill area with water.
Disposal Methods	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep away from heat/sparks/open flames/hot surfaces. No smoking. For metal containers, ground/bond container and receiving equipment. Take precautionary measures against static discharge. Use explosion-proof electrical/ventilating/lighting equipment. Avoid breathing mist/vapors. Use only outdoors or in well-ventilated area. In cases of inadequate ventilation wear respiratory protection. Keep container tightly closed.
Handling	Wear protective gloves/protective clothing/eye protection. Wash hands thoroughly after handling.
Storage	Store in a well-ventilated area. Keep cool. Store locked up.

I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID****Section 8: Exposure Controls/Personal Protection****Substances with Occupational Exposure Limit Values**

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
propan-2-ol	ACGIH	200 ppm (TWA)	400 ppm
	U.S.A. OSHA PEL	400 ppm	Not established
	Canada AB	200 ppm	400 ppm
	Canada BC	200 ppm	400 ppm
	Canada ON	200 ppm	400 ppm
	Canada QC	400 ppm	500 ppm

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS database² and from suppliers' SDSs were also consulted. Short term exposure limits (STEL) are usually for 15 min and long term permissible exposure limits (PEL) for 8 h.

Engineering Controls

Ventilation Keep airborne concentrations below the occupational exposure limits (OEL).

Personal Protective Equipment

Eye protection Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Use safety glasses with lateral protection (side shields).

Skin Protection For likely contacts, use of protective butyl rubber, nitrile, neoprene, polyethylene gloves or other chemically resistant gloves.

For incidental contacts, use disposable nitrile or neoprene gloves, or other chemically resistant gloves.

Do NOT use latex rubber, polyvinyl alcohol (PVA) or PVC gloves.

Respiratory Protection For over-exposures up to 10 x OEL of mist/vapors/spray, wear respirator such as a half-mask respirator with organic vapor cartridges.

Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus.

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RECOMMENDATION: Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

Section 9: Physical and Chemical Properties

Physical State	Liquid	Lower Flammability Limit	2%
Appearance	Colorless	Upper Flammability Limit	12%
Odor	Alcohol like	Vapor Pressure @20 °C	4.2 kPa [32 mmHg]
Odor Threshold	0.44 ppm	Vapor Density	2.1 (Air = 1)
pH	Not available	Specific Gravity @25 °C	0.785
Freezing/Melting Point	-88 °C [-126 °F]	Solubility in Water	Fully miscible
Boiling Point	≥81.8 °C [≥179 °F]	Partition Coefficient	Not available
Flash Point ^{a)}	12 °C [54 °F]	Auto-ignition Temperature	425 °C [797 °F]
Evaporation Rate	1.5 (ButAc = 1)	Decomposition Temperature	Not available
Flammability (solid, gas)	Not available	Viscosity @20 °C	2.4 mPa·s [3.1 mm ² /s]

a) Tag closed cup value

I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID****Section 10: Stability and Reactivity**

Reactivity	At elevated temperatures, may react with aluminum and generate hydrogen gas.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, excessive heat, and incompatible substances. Vapors may form explosive mixture with air.
Incompatibilities	Strong oxidizing agents, strong acids, strong bases, halogenated compounds, aluminum at temperatures $\geq 49\text{ }^{\circ}\text{C}$ [$>120\text{ }^{\circ}\text{F}$]
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

Section 11: Toxicological Information**Routes of Exposure**

Eye contact, Skin contact, Inhalation, and Ingestion

Symptoms Summary

Eyes	Causes serious eye irritation, tearing, redness or pain.
Skin	Causes dry skin and redness.
Inhalation	May cause drowsiness or dizziness. Excessive exposure may cause narcotic effects, weakness, headaches, and unconsciousness.
Ingestion	May be harmful if swallowed. See inhalation symptoms.
Chronic	Prolonged or repeated exposure may defat skin and cause skin dryness and cracking, and local redness and discomfort.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
propan-2-ol	3 600 mg/kg Rat	12 800 mg/kg Rabbit	16 000 ppm 8 h Rat

Note: Toxicity data from the RTECS² and ECHA databases were consulted. The data from supplier (M)SDSs were also consulted.

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I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID****Other Toxicological Effects**

Skin corrosion/irritation	Causes mild skin irritation based on Draize tests on rabbits. Prolonged or repeated skin contact may cause dermatitis.
Serious eye damage/irritation	Causes moderate to severe eye irritation based on Draize tests on rabbits.
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met.
Carcinogenicity (risk of cancer)	Not classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP.
Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not met.
Teratogenicity (risk of fetus malformation)	Based on available data, the classification criteria are not met.
STOT-single exposure	Propan-2-ol can affect the central nervous system by inhalation causing drowsiness or dizziness.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Not classified as Cat 1 aspiration hazards, so no labeling mandated. It meet the criteria for a Cat 2 aspiration hazard, which may be harmful if swallowed and enters airways.

I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID****Section 12: Ecological Information**

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (<http://echa.europa.eu>), and other reliable sources.

Propan-2-ol component is not classifiable as an environmental toxicant with minimal LC50 of 9 640 mg/L 96 h for *Pimephales promelas* (fathead minnow); 5 102 mg/L 24 h *Daphnia magna* (water flea); >2 000 mg/L 24 h *Pseudokirchneriella subcapitata* (green algae).

Acute Ecotoxicity

Available toxicity data does not meet classification thresholds

Chronic Ecotoxicity

Available toxicity data does not meet classification thresholds

Biodegradability

Not available

Other Effects

Regulated Volatile Organic Compound (VOC) content = 100% (785 g/L)

Section 13: Disposal Information

Dispose of contents in accordance with all local, regional, national, and international regulations.

ISOPROPYL ALCOHOL: ELECTRONICS CLEANER
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Section 14: Transport Information
Ground

Refer to TDG (Canadian Transportation of Dangerous Goods regulations) and USA DOT 49 CFR (Parts 100 to 185) Regulations.

Sizes 1 L and under

Limited Quantity



Sizes greater than 1 L

UN number: UN1219

Shipping Name: ISOPROPANOL

Class: 3

Packing Group: II

Marine Pollutant: No


Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 1 L and under

Limited Quantity



Sizes up to 5 L (passenger), 60 L (cargo)

UN number: UN1219

Shipping Name: ISOPROPANOL

Class: 3

Packing Group: II

Marine Pollutant: No


Sea

Refer to IMDG regulations.

Sizes 1 L and under

Limited Quantity



Sizes greater than 1 L

UN number: UN1219

Shipping Name: ISOPROPANOL

Class: 3

Packing Group: II

Marine Pollutant: No



Note: Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.

I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID****Section 15: Regulatory Information****Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

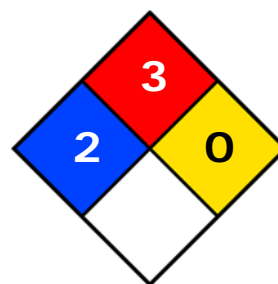
All hazardous ingredients are listed on the DSL/NDSL.

Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

USA**Other Classifications****HMIS[®] RATING**

HEALTH:	2
FLAMMABILITY:	3
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA[®] 704 CODES

Approximate HMIS and NFPA Risk Ratings Legend:

0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product contains up to $\geq 99.7\%$ propan-2-ol (CAS # 67-63-0) which is subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

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I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID**

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, Sept 2, 2011 revision, USA).

This product does not contain any of the listed substances.

Europe**RoHS** (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

WEEE (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

SDS Prepared by Michel Hachey

Date of Revision 13 June 2017

Supersedes 06 October 2015

Reason for Changes: Added new part numbers to section 1.

Reference

1) ACGIH 2013 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2013).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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I SOPROPYL ALCOHOL: ELECTRONICS CLEANER**824-LIQUID****Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
ECHA	European Chemicals Agency
EU	European Union
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

Technical Queries Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

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