



Quality System Certified to ISO 9001:2008

SAI Global File #004008

Burlington, Ontario, Canada

824-A

ISOPROPYL ALCOHOL ELECTRONICS CLEANER

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: Isopropyl Alcohol Electronics Cleaner

Other Means of Identification: 824-a

Related Part # 824-450G, 824-450GCA

Recommended Use and Restriction on Use

Use: Cleaner for electronics

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
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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 at **+1-800-424-9300**




For emergencies involving the transport of dangerous goods; 24/7 service
CANADA—Call CANUTEC collect at **+1-613-996-6666** or ***666** on cellular phones

824-A**ISOPROPYL ALCOHOL ELECTRONICS CLEANER****Section 2: Hazard(s) Identification****Classification of Hazardous Materials****GHS Categories**

Criteria	Category	Signal Word	Pictograms
Flammable Aerosol	2	Warning	Flame
Gas Under Pressure	Liquefied Gas	Warning	Gas Cylinder
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), which is opposite to HMIS and NFPA conventions. Severity categories do not allow comparisons between classes.

Label Elements

Signal Word	WARNING
Pictograms	Hazard Statements
	H223: Flammable aerosol
	H280: Contains gas under pressure; may explode if heated
	H319: Causes serious eye irritation H336: May cause drowsiness or dizziness

Section continued on the next page

**824-A****ISOPROPYL ALCOHOL ELECTRONICS CLEANER***Continued...*

Prevention	Precautionary Statements
P102	Keep out of reach of children.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing mist/vapors/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear eye protection.
P264	Wash hands thoroughly after handling.
Response	Precautionary Statements
P305 + P351 + P358	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	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.
Storage	Precautionary Statements
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F].
P403	Store in a well-ventilated place.
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/national/international regulations.

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824-A**ISOPROPYL ALCOHOL ELECTRONICS CLEANER****Hazards Not Otherwise Classified**

HCS2012 Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Simple Asphyxiant	May displace oxygen and cause rapid suffocation.	Warning	None
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)}	75%
75-37-6	1,1-difluoroethane	25%

a) Commonly known as isopropyl alcohol (IPA)

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ISOPROPYL ALCOHOL ELECTRONICS CLEANER**Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
IF IN EYES	P305 + P351+ P338, P337 + P313
Immediate Symptoms	<i>redness, irritation, tearing</i>
Response	Rinse cautiously with water for 20 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>dizziness, drowsiness, cough, headaches, weakness, unconsciousness</i>
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. If feeling unwell: Call a POISON CENTRE/doctor.
IF SWALLOWED	P301 + P330, P331, P312 (<i>Not a likely route of exposure under normal use</i>)
Immediate Symptoms	<i>Low toxicity: nausea, headache, dizziness, drowsiness, weakness, abdominal pain, unconsciousness</i>
Response	Rinse mouth. Do NOT induce vomiting. If feeling unwell: Call a POISON CENTRE/doctor.
IF ON SKIN (or hair)	P302 + P353
Immediate Symptoms	<i>Low toxicity: mild irritation</i>
Response	Rinse skin with water or shower.

824-A**ISOPROPYL ALCOHOL ELECTRONICS CLEANER****Section 5: Fire-Fighting Measures**

Extinguishing Media	Use extinguishing media suitable for surrounding materials. Use water spray to cool containers.
Specific Hazards	Aerosols containers may erupt with force at temperatures above 50 °C [122 °F]. Produces irritating and toxic fumes in fires or in contact with hot surfaces. The vapors are heavier than air and may accumulate in low-lying areas. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion.
Combustion Products	Produces carbon oxides (CO, CO ₂) halogenated compounds, and hydrogen fluoride (HF).
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Avoid breathing the mist/spray/vapors. Remove or keep away all sources of extreme heat or open flames.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment Methods	Not applicable
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 soap and water to remove the last traces of residue. RECOMMENDATION: Use a grounded stainless steel or carbon steel waste container.
Disposal Methods	Dispose of spill waste according to Section 13.

824-A**ISOPROPYL ALCOHOL ELECTRONICS CLEANER****Section 7: Handling and Storage**

Prevention	Keep out of reach from children. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Avoid breathing mist/spray/vapors. Use only outdoors or in a well-ventilated area.
Handling	Wear eye protection. Wash hands thoroughly after handling.
Storage	Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F]. Store in a well-ventilated place. Store locked up.

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
1,1-difluoroethane	ACGIH	Not established	Not established
	U.S.A. OSHA PEL	Not established	Not established
	Canada	Not established	Not established

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 RTECS² database and from suppliers' SDSs were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

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824-A**ISOPROPYL ALCOHOL ELECTRONICS CLEANER****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

Wear appropriate protective clothing to prevent skin contact.

RECOMMENDATION: Use of protective gloves in butyl rubber, nitrile rubber, or other chemically resistant gloves.

Respiratory Protection

If exposed to mist, wear respirator such as a half-mask respirator.

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.

824-A**ISOPROPYL ALCOHOL ELECTRONICS CLEANER****Section 9: Physical and Chemical Properties**

Physical State	Liquid in aerosol format	Lower Flammability Limit	2%
Appearance	Colorless	Upper Flammability Limit	12%
Odor	Alcohol-like	Vapor Pressure @20 °C	4.2 kPa [32 mmHg]
Odor Threshold	Not available	Vapor Density	≥1.6
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 applicable	Viscosity @20 °C	2.4 mPa·s [3.1 cSt]

a) Closed cup value

824-A**ISOPROPYL ALCOHOL ELECTRONICS CLEANER****Section 10: Stability and Reactivity**

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Temperatures above 50 °C [122 °F], open flames, and incompatible substances
Incompatibilities	Strong oxidizing agents, strong acids, alkali and alkali earth metals, halogenated compounds, aluminum at temperatures ≥49 °C [≥120 °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**Summary of Effects and Symptoms by Routes of Exposure**

Eyes	Causes serious eye redness, irritation, or tearing.
Skin	Low toxicity: mild irritation
Inhalation	May cause drowsiness or dizziness. Excessive exposure may cause cough, headaches, weakness, and unconsciousness.
Ingestion	Low toxicity. 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
isopropyl alcohol	3 600 mg/kg Rat	12 800 mg/kg Rabbit	16 000 ppm 8 h Rat
1,1-difluoroethane	Not available	Not available	1 500 g/m ³ 4 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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Skin corrosion/irritation	Based on available data, the classification criteria are not met. Propan-2-ol causes mild skin irritation based on Draize tests on rabbits.
Serious eye damage/irritation	Propan-2-ol 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)	None of the ingredients are 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	Based on available data, the classification criteria are not met. There are no category 1 components.

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 is not classifiable as an environmental toxicant (with minimal LC50 of >100 mg/L).

- Propan-2-ol is readily biodegradable and has a minimal LC50 96 h of 9 640 mg/L for *Pimephales promelas* (fathead minnow); an EC50 24 h of 5 102 mg/L *Daphnia magna* (water flea); and an EC50 72 h of >2 000 mg/L *Desmodesmus subspicatus* (green algae).

Acute Ecotoxicity

Available toxicity data does not meet classification thresholds.

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824-A**ISOPROPYL ALCOHOL ELECTRONICS CLEANER****Chronic Ecotoxicity**

Available toxicity data does not meet classification thresholds.

Biodegradability

The constituents are volatile and readily biodegradable.

Other Effects

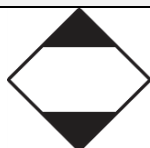
Volatile Organic Content (VOC) = 75% (589 g/L)

Section 13: Disposal Considerations

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

Section 14: Transport Information**Ground**

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

Limited Quantity

UN number: UN1950
Shipping Name: AEROSOL,
flammable
Class: 2.1
Packing Group: Not applicable
Marine Pollutant: No

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Limited Quantity

Max Net Qty/Pkg =
30 kg Gross



UN number: UN1950
Shipping Name: AEROSOL,
flammable
Class: 2.1
Packing Group: Not applicable
Marine Pollutant: No

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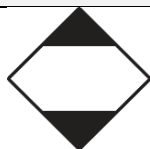
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Sea

Refer to IMDG regulations.

Limited Quantity



UN number: UN1950
Shipping Name: AEROSOL,
flammable
Class: 2.1
Packing Group: Not applicable
Marine Pollutant: No

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

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.

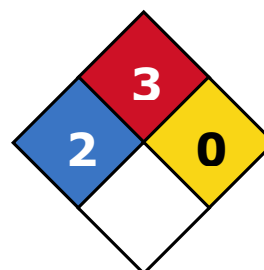
USA

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)

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ISOPROPYL ALCOHOL ELECTRONICS CLEANER

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 75% 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.

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

This product does not contain any substances known to be listed in California.

Europe

RoHS (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, PBDE's, DEHP, BBP, DBP, or DIBP 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 26 October 2017

Supersedes 28 May 2014

Reason for Changes: Minor format revisions in with WHMIS 2015 and HCS 2012.

References

1) ACGIH 2017 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 (2017).

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

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ISOPROPYL ALCOHOL ELECTRONICS CLEANER

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
NOELR	No observable effect loading ratio
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
PEL	Permissible Exposure Limit
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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