

ISOPROPYL ALCOHOL

824-AEROSOL

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Name: Isopropyl Alcohol**SDS Code:** 824-Aerosol**Related Part #:** 824-450G

Recommended Use and Restriction on Use

Use: Multipurpose cleaner for electronics and high technology components**Uses Advised Against:** Not available

Details of Manufacturer or Importer

Manufacturer

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

MG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA

☎ 1-800-340-0772**☎** 1-905-331-1396**FAX** 1-800-340-0773**FAX** 1-905-331-2682**E-MAIL:** support@mgchemicals.com**E-MAIL:** info@mgchemicals.com**WEB** www.mgchemicals.com**E-MAIL** (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY—leaks, spills, fires, exposures or accidentsUSA or CANADA: Call CHEMTREC ☎: **1-800-424-9300****For emergencies involving dangerous goods;** Collect 24/7CANADA: Call CANUTEC ☎: **1-613-996-6666** or ***666** on cellular phones

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Section 2: Hazards Identification

Classification of Hazardous Chemical

WHMIS Classification



A – Aerosol Container; B2 – Flammable Liquid; D2B – Toxic Material (Eye Irritant)

GHS Categories

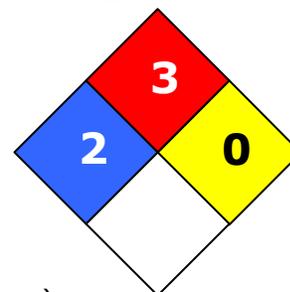
Criteria	Category	Signal Word	Pictograms
Flammable Aerosol	2	Warning	
Gas under pressure Liquefied gas	3	Warning	
Eye irritation	2A	Warning	
Specific Target Organ Toxicity Single Exposure	3	Warning	

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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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 and dizziness
	Precautionary Statements
Prevention	<p>P210 + P211: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not spray on an open flame or other ignition source</p> <p>P410 + P403: Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F]</p> <p>P251: Do not pierce or burn, even after use.</p> <p>P280: Wear protective gloves/eye protection.</p> <p>P264: Wash hands thoroughly after handling.</p> <p>P261: Avoid breathing gas/vapors/mist/spray.</p> <p>P271: Use outdoors or in a well-ventilated area.</p>
Response	<p>P305 + P351 + P358 + P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.</p> <p>P302 + P353 + P362+ P364: IF ON SKIN (or hair): Rinse skin with water/shower. Take off contaminated clothing and wash it before reuse.</p> <p>P304+ P340 + P312: IF INHALED: Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.</p>

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	Precautionary Statements <i>(Continued)</i>
Storage	P410 + P412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F]. P403: Store in well ventilated place. P405: Store locked up.
Disposal	P501: Dispose of contents/container in accordance to local/regional/national/international regulations.

Other Hazards

Prolonged or repeated exposure may cause skin dryness or cracking

Section 3: Hazardous Ingredients

CAS #	Chemical Name	Wt%
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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Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
IF IN EYES	P305
Symptoms	Immediate: <i>irritation, tearing, redness, pain</i>
Response	P351: Rinse cautiously with water for several minutes. P338: Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists	P313: Get medical advice/attention.
IF ON SKIN (or hair)	P302
Symptoms	Immediate: <i>dry skin, redness</i>
Response	P353: Rinse skin with water/shower. P362+ P364: Take off contaminated clothing and wash it before reuse.
IF INHALED	P304 (<i>Not a likely route of exposure under normal use</i>)
Symptoms	Immediate: <i>Cough, dizziness, drowsiness, headaches, weakness, unconsciousness</i>
Response	P340: Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing.
If feeling unwell	P312: Call a POISON CENTRE/doctor.
IF SWALLOWED	P301 (<i>Not a likely route of exposure under normal use</i>)
Symptoms	Immediate: <i>nausea, headaches, dizziness, weakness, unconsciousness</i>
Response	P330: Rinse mouth. P331: Do NOT induce vomiting.
If feeling unwell or concerned	P313: Get medical advice/attention

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Section 5: Fire-Fighting Measures

Auto-ignition Temperature ^{a)}	425 °C [797 °F]	Flash Point ^{a)}	12 °C [54 °F]	LFL [LEL]	2%
				UFL [UEL] ^{b)}	12%

In case of fire P370

Response P378: Use dry chemical, carbon dioxide, water fog, or chemical foam to extinguish. Use water spray to cool containers.

Combustion Products Produces carbon oxides (CO, CO₂) halogenated compounds, and hydrogen fluorides

Fire-Fighter Wear self-contained breathing apparatus for fire fighting

General Information Vapors may accumulate in low-lying areas. They can cause flash fire or ignite explosively.

Aerosol container may erupt with force at temperatures above 50 °C [122 °F]. P

Produces irritating and toxic fumes in fires or in contact with hot surfaces.

a) Auto-ignition and flash point (closed cup) values based on propan-2-ol literature value

b) LFL = Lower Flammability [or Explosion] Limit (in volume %);

UFL = Upper Flammability [or Explosion] Limit (in volume %)

Section 6: Accidental Release Measures

Personal Protection: See Section 8. Avoid breathing the mist/vapors.

Containment Remove all sources of ignition. Prevent spill from entering drains and waterways.

Cleaning Collect liquid in a sealable, solvent-resistant container. Sprinkle inert, non-combustible absorbent compound onto spill, then sweep into the container. Wash spill area with water to remove the last traces of residue.

Disposal Dispose of spill waste according to Section 13.

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- Prevention** 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 + P271 + P284: Avoid breathing fume/vapors. Use only outdoors or in well ventilated area. In cases of inadequate ventilation wear respiratory protection.
P271: Use outdoors or in a well-ventilated area.
- Handling** P280: Wear protective gloves/clothing/eye protection.
RECOMMENDATION: Wear neoprene, butyl rubber, nitrile or other impervious gloves with breakthrough time greater than intended use period.
P264: Wash hands thoroughly after handling.
- Storage** P410 + P412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F]
P403: Store in a well ventilated place.
RECOMMENDATION: Keep in a dry and clean area, away from incompatible substances.

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Section 8: Exposure Controls/Personal Protection

Routes of Entry

Eyes, ingestion, inhalation, and skin

Substances with Occupational Exposure Limit Values

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
		ppm	ppm
propan-2-ol	ACGIH	200 (TWA)	400
	U.S.A. OSHA PEL	400	—
	Canada AB	200	400
	Canada BC	200	400
	Canada ON	200	400
	Canada QC	400	500
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 ACGIH², OSHA, and Canadian provinces exposure limits were consulted. Limits from by RTECS database¹ of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS 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 exposure limits.

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.

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

RECOMMENDATION: Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this MSDS, and that the respirator is 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	Appearance	Colorless
Odor	Alcohol like	Odor Threshold	Not available
pH	Not available	Specific Gravity @23 °C	0.785
Solubility in Water	Fully miscible	Freezing/Melting Point	-88 °C [-126 °F]
Flash Point ^{a)}	12 °C [54 °F]	Vapor Pressure @ 20 °C	4.2 kPa [32 mmHg]
Boiling Point	≥81.8 °C [≥179 °F]	Evaporation Rate	1.5 (ButAc = 1)
Lower Flammability Limit	2%	Upper Flammability Limit	12%
Auto-ignition Temperature ^{b)}	425 °C [797 °F]	Decomposition Temperature	Not available
Viscosity @20 °C	2.4 mPa· [3.1 cSt]	Vapor Density	≥1.6
Partition Coefficient	Not established		

a) Closed cup value

ISOPROPYL ALCOHOL**824-AEROSOL****Section 10: Stability and Reactivity**

Stabilities	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, temperatures above 50 °C [122 °F]), and incompatible substances. Vapors may form explosive mixture with air.
Incompatibilities	Strong oxidizing agents, strong acids, strong bases, 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**Routes of Exposure**

Eyes, ingestion, inhalation, and skin

Symptoms Summary

Eyes	Causes serious eye irritation, tearing, redness or pain.
Skin	Cause 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	TCLo inhalation
isopropyl alcohol	3 600 mg/kg Rat	12 800 mg/kg Rabbit	16 000 ppm 8 h Rat	35 ppm Human
1,1-difluoroethane	Not available	Not available	1,500 g/m ³ 4 h Rat	Not available

Note: Representative toxicity data from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS)¹ data from supplier MSDS were also consulted.

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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)	No evidence of sensitization
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)	No data available
Reproductive Toxicity (risk to sex functions)	No data available
Teratogenicity (risk of fetus malformation)	No data available
STOT-single exposure	Propan-2-ol can affect the central nervous system by inhalation causing drowsiness or dizziness.
STOT-repeated exposure	No data available
Aspiration hazard	Not classified as aspiration hazards.

Section 12: Ecological Information

The ecotoxicity of the mixture was estimated by the calculation method using the summation of classified ingredients. The IMDG Code criteria and the raw-material MSDS along with supporting data for the classification of registered substances from the European Chemical Agency database (<http://echa.europa.eu>) were used.

The 2-propanol 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 Content (VOC) = 75% (589 g/L)

ISOPROPYL ALCOHOL**824-AEROSOL****Section 13: Disposal Information**

P501: 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 CFR 49 Regulations** (Parts 100 to 185). **ADR** (European Agreement Concerning the International Carriage of Dangerous Goods by Road, and **ADN** (Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways).

Limited Quantity

Ground marking: LTD QTY

**Air**

Refer to ICAO-IATA Dangerous Goods Regulations.

UN number: UN1950

Shipping Name: AEROSOL, flammable

Class: 2.1

Packing Group: not applicable

Marine Pollutant: No

**Sea**

Refer to IMDG regulations.

IMDG Marking: LTD QTY

UN number: UN1950

Shipping Name: AEROSOL, flammable

Class: 2.1

Packing Group: not applicable

Marine Pollutant: No



Note: Component supplier SDS transportation sections and labeling were consulted. All involved staff of shipper must be appropriately trained before involvement with the transport of this product, or work under direct supervision of a trained person.

Section 15: Regulatory Information**Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

All hazardous ingredients are listed on the DSL/NDSL.

Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

USA**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 $\geq 99.8\%$ 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 of the listed substances.

Europe**RoHS**

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

WEEE

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

ISOPROPYL ALCOHOL**824-AEROSOL****Section 16: Other Information****MSDS Prepared by** Michel Hachey**Date of Revision** 02 August 2013**Supersedes** 09 November 2010**Reason for Changes:** Change to GHS classification and format**References**

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

2) ACGIH 2011 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 (2011).

Abbreviations

ACGIH American Conference of Governmental Industrial Hygienists

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.

Email: support@mgchemicals.com

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