

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 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

ISOPROPYL ALCOHOL

824-AEROSOL

Section 2: Hazards Identification

Classification of Hazardous Chemical

GHS Categories

Criteria	Category	Signal Word	Pictograms
Flammable Aerosol	2	Warning	Flame
Gas Under Pressure Liquefied Gas	3	Warning	Gas cylinder
Eye Irritation Specific Target Organ Toxicity Single Exposure	2A 3	Warning Warning	Exclamation Exclamation

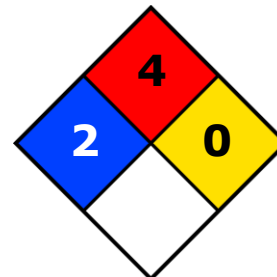
Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories do not allow comparisons between classes.

Other Classifications

HMIS® RATING

HEALTH:	2
FLAMMABILITY:	4
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

824-AEROSOL

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
Prevention	Precautionary Statements
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P211	Do not spray on an open flame or other ignition source.
P410 + P403	Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F]
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 protective gloves/eye protection/face 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.

Continued on the next page

ISOPROPYL ALCOHOL

824-AEROSOL

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Response	Precautionary Statements
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.

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)

ISOPROPYL ALCOHOL

824-AEROSOL

Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
IF IN EYES	P305 + P351+ P338, P313
Immediate Symptoms	<i>irritation, tearing, redness</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 (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>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>None expected</i>
Response	Rinse skin with water/shower.

ISOPROPYL ALCOHOL

824-AEROSOL

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 + P378				
Response	Use dry chemical, carbon dioxide, water fog, or chemical foam to extinguish. Use water spray to cool containers.				
Specific Hazards	<p>Vapors may accumulate in low-lying areas. They can cause flash fire or ignite explosively.</p> <p>Aerosol container may erupt with force at temperatures above 50 °C [122 °F].</p> <p>Produces irritating and toxic fumes in fires or in contact with hot surfaces.</p>				
Combustion Products	Produces carbon oxides (CO, CO ₂) halogenated compounds, and hydrogen fluorides				
Fire-Fighter	Wear self-contained breathing apparatus for fire fighting				

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/spray/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 absorbent compound onto spill, then sweep into the container.
Disposal	Dispose of spill waste according to Section 13.

ISOPROPYL ALCOHOL

824-AEROSOL

Section 7: Handling and Storage

- Prevention** 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.
Do not eat, drink, or smoke when using this product.
Avoid breathing fume/vapors. Use only outdoors or in a well-ventilated area. In cases of inadequate ventilation wear respiratory protection.
- Handling** Wear protective gloves/clothing/eye protection.
Wash hands thoroughly after handling.
- Storage** Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F]
Store locked up.

Section 8: Exposure Controls/Personal Protection

Routes of Entry

Eyes, ingestion, inhalation

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 ACGIH¹, OSHA, and Canadian provinces exposure limits were consulted. Limits from by RTECS database² 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.

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ISOPROPYL ALCOHOL**824-AEROSOL****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.

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 SDS, 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.

ISOPROPYL ALCOHOL

824-AEROSOL

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	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 available	Viscosity @20 °C	2.4 mPa· [3.1 cSt]

a) Closed cup value

ISOPROPYL ALCOHOL

824-AEROSOL

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Flames, sparks, ignition sources, temperatures above 50 °C [122 °F]), and incompatible substances. Vapors may form explosive mixture with air.
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

Routes of Exposure

Eyes, ingestion, and inhalation

Symptoms Summary

Eyes	Causes serious eye irritation, tearing, or redness.
Skin	None expected
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.
Continued on the next page

ISOPROPYL ALCOHOL**824-AEROSOL**

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); EC50 of 5 102 mg/L 24 h *Daphnia magna* (water flea); and EC50 >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

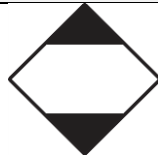
Dispose of contents in accordance with all local, regional, national, and international regulations.

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.

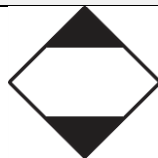
UN number: UN1950
Shipping Name: AEROSOL,
flammable
Class: 2.1
Packing Group: Not applicable
Marine Pollutant: No



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.

ISOPROPYL ALCOHOL**824-AEROSOL****Section 15: Regulatory Information****Canada****WHMIS Classification**

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

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.

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ISOPROPYL ALCOHOL**824-AEROSOL****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.

Section 16: Other Information

MSDS Prepared by Michel Hachey

Date of Revision 28 May 2014

Supersedes 02 August 2013

Reason for Changes: Change to OSHA HCS 2012 format and revision

References

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®)

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.

Email: support@mgchemicals.com

Continued on the next page



Quality System Certified to ISO 9001:2008

SAI Global File #004008
Burlington, Ontario, Canada

ISOPROPYL ALCOHOL

824-AEROSOL

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