

SUPER COLD 134

403A

# Safety Data Sheet

## Section 1: Product and Company Identification

### Product Identifier and Other Means of Identification

**Product Name:** Super Cold 134**MSDS Code:** 403A-Aerosol**Related Part #:** 403A-285G, 403A-400G

### Recommended Use and Restriction on Use

**Use:** For cooling electronic components and locating thermal intermittents**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](mailto:support@mgchemicals.com)**E-MAIL:** [info@mgchemicals.com](mailto:info@mgchemicals.com)**WEB** [www.mgchemicals.com](http://www.mgchemicals.com)**E-MAIL** (Competent Person): [sds@mgchemicals.com](mailto:sds@mgchemicals.com)

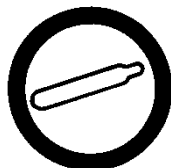
### Emergency Phone Number

**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


**Section 2: Hazards Identification**

**WHMIS Classification**



A – Aerosol Container

**GHS Categories**

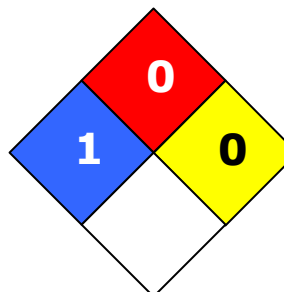
Criteria	Category	Signal Word	Pictograms
Gas under pressure      Liquefied gas	3	Warning	

**Other Classifications**

**HMIS® RATING**

<b>HEALTH:</b>	<b>1</b>
<b>FLAMMABILITY:</b>	<b>0</b>
<b>PHYSICAL HAZARD:</b>	<b>0</b>
<b>PERSONAL PROTECTION:</b>	

**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**

<b>Signal Word</b>	<b>WARNING</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H280: Contains gas under pressure; may explode if heated
	<b>Precautionary Statements</b>
<b>Prevention</b>	P251: Do not pierce or burn, even after use.
<b>Storage</b>	P410 + P412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F].

**Hazards Not Otherwise Classified**

HCS2012 Criteria	Hazard Statements/Precautionary Statement	Signal Word
Simple Asphyxiant	May displace oxygen and cause rapid suffocation.	Warning

The ejected liquid or jet may cause frostbite in contact with skin or eyes.

Inhalation overexposure through intentional abuse or use in confined space may cause cardiac or central nervous systems effects.

**Section 3: Hazardous Ingredients**

CAS #	Chemical Name	Wt%
811-97-2	1,1,1,2-tetrafluoroethane	>99%

Note: Commonly referred to as HFC 134a

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**Section 4: First Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
<b>IF IN EYES</b>	P305, P351+ P338, P337+P313, P336+P315
<b>Immediate Symptoms</b>	<i>frostbite, cold burns, irritation, tearing, redness</i>
<b>Response</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention if irritation persists.
<b>If frostbite occurs</b>	Thaw frosted parts with lukewarm water. Do not use hot water. Do not rub affected area. Get immediate medical attention.
<b>IF ON SKIN</b>	P302, P352, P332+P313, P336+P315
<b>Immediate Symptoms</b>	<i>frostbite, cold burns, irritation</i>
<b>Response</b>	Wash with plenty of water. Get medical advice/attention if skin irritation occurs.
<b>If frostbite occurs</b>	Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical attention.
<b>IF INHALED</b>	P304, P340, P310
<b>Immediate Symptoms</b>	<i>dizziness, drowsiness, heart thumping, lightheadedness</i>
<b>Response</b>	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing.
<b>If feeling unwell</b>	Get medical advice/attention
<b>IF SWALLOWED</b>	P301, P330, P310 <i>(Not a likely route of exposure under normal use)</i>
<b>Immediate Symptoms</b>	<i>frostbite (mouth), irritation</i>
<b>Response</b>	Rinse mouth with lukewarm water. Do NOT induce vomiting. Get medical advice/attention if feeling unwell.

**Medical Advice**

Avoid giving catecholamine drugs (such as epinephrine) due to possible cardiac disturbance. Treat symptomatically.

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**Section 5: Fire Fighting Measures**

<b>Autoignition Temperature</b>	>750 °C [797 °F]	<b>Flash Point</b>	Not applicable	<b>LFL [LEL]<sup>a)</sup></b>	Not applicable
				<b>UFL [UEL]</b>	Not applicable

**In case of fire** P370 +P378

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

**Combustion Products** Produces CO, CO<sub>2</sub>, halogenated compounds, and hydrogen fluorides

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

**General Information** Vapors may accumulate in low-lying areas. Aerosol container may erupt with force at temperatures above 50 °C [122 °F]. Produces irritating and toxic fumes in fires or in contact with hot surfaces.

a) LF[E]L = Lower Flammability [or Explosion] Limit (in volume %);  
UF[E]L = Upper Flammability [or Explosion] Limit (in volume %)

**Section 6: Accidental Release Measures**

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

For very large spills, wear self-contained breathing apparatus before approaching the spill. Wear cold-insulating clothing and gloves.

**Containment** For aerosol can size spill, leave the immediate spill area to avoid contact with the liquid. No containment required under normal circumstances.

If it can safely be done, extinguish open flames or remove high temperature sources to avoid producing toxic decomposition products.

**Cleaning** Ensure adequate ventilation, especially in low or enclosed areas. The product will turn gaseous and be dispersed.

**Disposal** Not applicable

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**Section 7: Handling and Storage**

- Prevention** Do not get in eye, on skin, or on clothing.  
Do not breathe mist/vapors/spray. In cases of inadequate ventilation wear respiratory protection.  
Do not pierce or burn, even after use.
- Handling** Wear cold-insulating gloves if exposure to liquid or aerosol jet is likely. Wear protective gloves/eye protection.
- Storage** Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F].  
**RECOMMENDATION:** Keep in well ventilated room.

**Section 8: Exposure Controls/Personal Protection**

**Routes of Entry**

Inhalation, skin, eyes

**Substances with Occupational Exposure Limit Values**

Chemical Name	Country or Vendor	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
1,1,1,2-tetrafluoroethane	MG Chemicals <sup>a)</sup>	1,000 ppm	
	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 ACGIH<sup>1</sup>, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS database<sup>2</sup> of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) MG Chemicals recommended limit corresponding to prevalent international threshold values

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**SUPER COLD 134****403A****Engineering Controls****Ventilation**

Normal ventilation is generally adequate, except in enclosed or low lying area.

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:** If exposure to jet or liquid is likely, use cold-insulating gloves to protect against skin.

**Respiratory Protection**

In high exposure scenarios, use a full-face respirator with multipurpose combination of (US) or type AXBEK (EN 13387) to supplement engineering control. For extreme exposures, use full-face, self-contained breathing apparatus or supplied by air.

**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.

**General Hygiene Considerations**

Wash hands thoroughly with water and soap after handling.

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**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Liquefied gas	<b>Appearance</b>	Colorless
<b>Odor</b>	Slight, ether-like	<b>Odor Threshold</b>	Not available
<b>pH</b>	Not available	<b>Specific Gravity</b>	1.22
<b>Solubility in Water @ 25 °C</b>	0.15% (wt)	<b>Melting/Freezing Point</b>	-101 °C [-105 °F]
<b>Boiling Point</b>	-26.2°C [-15.2 °F]	<b>Evaporation Rate</b>	≥1 (Ether = 1)
<b>Flash Point</b>	Not applicable	<b>Vapor Pressure @ 25 °C</b>	630 kPa [4 725 mmHg]
<b>Lower Flammability Limit</b>	Not applicable	<b>Upper Flammability Limit</b>	Not applicable
<b>Auto-ignition Temperature</b>	750 °C [1 382 °F]	<b>Decomposition Temperature</b>	Not available
<b>Viscosity</b>	Not applicable	<b>Vapor Density</b>	3.5 (Air = 1)
<b>Partition Coefficient</b>	1.06 <sup>a)</sup>		

Note: Literature values are used.

a) Octanol-water LogP value

**Section 10: Stability and Reactivity**

<b>Stabilities</b>	Chemically stable at normal temperatures and pressures
<b>Conditions to Avoid</b>	Ignition sources, excessive heat, and incompatible substances.
<b>Incompatibilities</b>	Strong oxidizing agents, alkali or alkali earth metals, powdered aluminum, zinc, magnesium, and beryllium
<b>Polymerization</b>	Will not occur
<b>Decomposition</b>	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5



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**Section 11: Toxicological Information**

**Routes of Exposure**

Eyes, inhalation, and skin

**Symptoms Summary**

**Eyes** See skin summary.

**Skin** Contact with the liquid may cause frostbite due to heat lost caused by rapid evaporation. Aerosol jet can reach -55 °C; exposure to jet can lead to frostbites.

**Inhalation** Extreme exposure may cause central nervous system depression and irregular heart beat.

**Ingestion** See inhalation and skin summaries.

**Chronic** None known.

**Acute Toxicity (Lethal Exposure Concentrations)**

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation	TCLo inhalation
1,1,1,2-tetrafluoroethane	Not available	Not available	1,500 g/m <sup>3</sup> 4 h Rat	Not available

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

**Other Toxicological Effects**

**Skin corrosion/irritation** May cause skin irritation.

**Serious eye damage/irritation** May cause eye irritation.

**Sensitization** (allergic reactions) None known or expected.

**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 mutagenic effects observed in four tests.

**Reproductive Toxicity** (risk to sex functions) No data available

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<b>Teratogenicity</b> (risk of fetus malformation)	No observed effect level (NOEL) for rabbit and rat is 40 000 ppm.
<b>STOT-single exposure</b>	Can affect the central nervous system and cardiovascular systems by inhalation at extreme doses that do not give rise to classification
<b>STOT-repeated exposure</b>	Chronic no observed effect level 10 000 ppm.
<b>Aspiration hazard</b>	Not applicable

**Section 12: Ecological Information**

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 1,1,1,2-tetrafluoroethane substance is not classifiable as an environmental toxicant.

**Acute Ecotoxicity**

Available toxicity data does not meet classification thresholds

**Chronic Ecotoxicity**

Not data available

**Biodegradability**

Not data available

**Global Warming Potential**

The 100 years global warming potential is 1430.

**Other Effects**

VOC exempt (0% by EPA and WHIMS guidelines)

\*VOC = *Regulated Volatile Organic Content*

**Section 13: Disposal Information**

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

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**Section 14: Transport Information**

**Ground**

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

**Limited Quantity**



Canada and USA

**UN number:** Not applicable  
**Shipping Name:** Not applicable  
**Class:** Not applicable  
**Packing Group:** Not applicable  
**Marine Pollutant:** No

**CANADA—Permit for Equivalent Level of Safety:** Refer to TC-SU4836.

<http://wwwapps.tc.gc.ca/wwwdocs/TDGCertificates/doc/4836-eng.doc>

**USA—Special Provision:** Refer to DOT-SP 10232. A copy of this special permit is required.

<http://www.sextoncan.com/pdf/certification/10232-2010040083-MMS.pdf>

**Air**

**Refer to ICAO-IATA Dangerous Goods Regulations.**

**Limited Quantity**



USA

**UN number:** UN3159  
**Shipping Name:** 1,1,1,2-Tetrafluoroethane  
**Class:** 2.2  
**Packing Group:** Not applicable  
**Marine Pollutant:** No

**USA—Special Provision:** Refer to DOT-SP 10232. A copy of this special permit is required.

<http://www.sextoncan.com/pdf/certification/10232-2010040083-MMS.pdf>

**Limited Quantity**



Canada and Global (Excluding USA)

**UN number:** UN1950  
**Shipping Name:** AEROSOL, non-flammable  
**Class:** 2.2  
**Packing Group:** Not applicable  
**Marine Pollutant:** No

**CANADA—Permit for Equivalent Level of Safety:** Refer to TC-SU4836.

<http://wwwapps.tc.gc.ca/wwwdocs/TDGCertificates/doc/4836-eng.doc>

*Note:* Avoid shipping by air if possible.

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**SUPER COLD 134****403A****Sea****Refer to ICAO-IATA Dangerous Goods Regulations.****Limited Quantity**

USA

**UN number:** UN3159**Shipping Name:** 1,1,1,2-Tetrafluoroethane**Class:** 2.2**Packing Group:** Not applicable**Marine Pollutant:** No**USA—Special Provision:** Refer to DOT-SP 10232. A copy of this special permit is required.<http://www.sextoncan.com/pdf/certification/10232-2010040083-MMS.pdf>**Limited Quantity**

Canada and Global (Excluding USA)

**UN number:** UN1950**Shipping Name:** AEROSOL, non-flammable**Class:** 2.2**Packing Group:** Not applicable**Marine Pollutant:** No**CANADA—Permit for Equivalent Level of Safety:** Refer to TC-SU4836.<http://www.wapps.tc.gc.ca/wwwdocs/TDGCertificates/doc/4836-eng.doc>

**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.

**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.

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**SUPER COLD 134****403A****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 does not contain substances which are 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**

This product is not classified under the DPD regulations.

**Section 16: Other Information**

**MSDS Prepared by** Michel Hachey

**Date of Issue** 05 November 2013

**Supersedes** 17 April 2013

**Reason for Changes:** Change to HCS2012 GHS format

**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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**SUPER COLD 134****403A****Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
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](http://www.mgchemicals.com).

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