

411A

(AEROSOL)

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Identifier: 411a**Other Means of Identification:** Maintenance Cleaner**Related Part #** 411a-300G

Recommended Use and Restriction on Use

Use: Precision electronic cleaner**Uses Advised Against:** For industrial use only

Details of Manufacturer or Importer

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

☎ +1-800-340-0772
FAX +1-800-340-0773
E-MAIL support@mgchemicals.com
WEB www.mgchemicals.com

☎ +1-905-331-1396
FAX +1-905-331-2682
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 Verisk 3E at **+1-866-519-4752** or **+1-760-476-3962**
(Service access code: 335388)


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

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Section 2: Hazards Identification
Classification of Hazardous Chemical
GHS Categories

Criteria		Category	Signal Word	Pictograms
Specific Target Organ Toxicity	Single Exposure	3	Warning	Exclamation
Aerosol		3	Warning	None
Hazardous to the Aquatic Environment	Chronic	3	none	None

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 category rankings do not allow comparisons between classes.

Label Elements

Signal Word	WARNING
Pictograms	Hazard Statements
	H336: May cause drowsiness or dizziness
No Symbol Mandated	H229: Pressurized container: may burst if heated
No Symbol Mandated	H412: Harmful to aquatic life with long lasting effects

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Prevention	Precautionary Statements
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing vapors, mist, or spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
Response	Precautionary Statements
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTRE or doctor if you feel unwell.
Storage	Precautionary Statements
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F].
P405	Store locked up.
P403	Store in a well-ventilated place.
Disposal	Precautionary Statements
P501	Dispose of contents in accordance to local, regional, national, and international regulations.

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Simple Asphyxiant	May displace oxygen and cause rapid suffocation.	Warning	None

411A**(AEROSOL)****Section 3: Hazardous Ingredients**

CAS #	Chemical Name	%(weight)
1263679-68-0	(1Z)-1-Chloro-2,3,3-trifluoroprop-1-ene	>89%
1263679-71-5	(E)-1-Chloro-2,3,3-trifluoroprop-1-ene	<10%

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Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
IF INHALED	P304 + P340, P312
Immediate Symptoms	<i>dizziness, drowsiness, headaches</i>
Response	Remove person to fresh air and keep comfortable for breathing. If feeling unwell: Call a POISON CENTRE or doctor.
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	<i>redness, serious eye irritation</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 or attention.
IF ON SKIN	P302, P332 + P313, P362 + P364
Immediate Symptoms	<i>dryness, redness, skin irritation, rash</i>
Response	Wash with plenty of water. If skin irritation or rash occurs: Get medical advice. Take off contaminated clothing and wash it before reuse.
IF SWALLOWED	P301 + P330 + P331
Immediate Symptoms	<i>sore throat, dizziness, drowsiness, headaches</i>
Response	Rinse mouth. Do NOT induce vomiting.

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Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Foam, dry powder, carbon dioxide and water spray. Do not use a heavy water stream.
Specific Hazards	Aerosol container may erupt with force at temperatures above 50 °C [122 °F]. Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces carbon oxides (CO, CO ₂), chlorinated compounds, hydrogen chloride, and hydrogen fluoride.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	Avoid contact with skin and eyes. See personal protection recommendations in Section 8. For very large spills, wear self-contained breathing apparatus before approaching the spill.
Precautions for Response	For aerosol can spills in confined or low lying space, leave the immediate spill area. If it can safely be done, extinguish open flames or remove high temperature sources to avoid producing toxic decomposition products.
Environmental Precautions	Avoid releasing to the environment.
Containment Methods	Contain with inert and non-flammable 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. Wipe up further residue with paper towels or rags and place dirty materials in container.
Disposal Methods	Dispose of spill waste according to Section 13.

411A**(AEROSOL)****Section 7: Handling and Storage****Prevention**

Avoid breathing vapors, mist or spray. In cases of inadequate ventilation wear respiratory protection. Use only outdoors or in a well-ventilated area.

Do not pierce or burn, even after use.

Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.

Avoid release to the environment.

Handling

Wear protective gloves, protective clothing, and eye protection.

Put the wash waste in a sealed, chemically-resistant container for hazardous waste.

Storage

Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F].

Store in a well-ventilated place.

Store locked up.

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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)
(1Z)-1-Chloro-2,3,3-trifluoroprop-1-ene	ACGIH	Not available	Not available
	U.S.A. OSHA PEL	Not available	Not available
	Canada AB	Not available	Not available
	Canada BC	Not available	Not available
	Canada ON	Not available	Not available
	Canada QC	Not available	Not available
(E)-1-Chloro-2,3,3,3-trifluoroprop-1-ene	ACGIH	Not available	Not available
	U.S.A. OSHA PEL	Not available	Not available
	Canada AB	Not available	Not available
	Canada BC	Not available	Not available
	Canada ON	Not available	Not available
	Canada QC	Not available	Not available

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

Wear appropriate protective clothing to prevent skin contact.

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Respiratory Protection

For over-exposures up to 10 x OEL of vapors, fumes and dust, wear respirator such as a half-mask respirator with organic vapor cartridges with a particulate filter.

For extreme exposures and for exposures where thermal decomposition is possible (>150 °C), use full-face, self-contained breathing apparatus or supplied by air.

RECOMMENDATION: Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) 3704 (perchloroethylene) 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, in aerosol format	Lower Flammability Limit	Not applicable
Appearance	Colorless ^{a)}	Upper Flammability Limit	Not applicable
Odor	Characteristic ^{a)}	Vapor Pressure @20 °C	> 1 kPa [7.50 mmHg]
Odor Threshold	Not available	Vapor Density	Not available
pH	Not applicable	Relative Density @20 °C	1.40
Freezing/Melting Point	Not available	Solubility in Water	5.6 mg/L (20 °C)
Initial Boiling Point	54.2-54.3 °C [130 °F]	Partition Coefficient n-octanol/water	Log Pow 3.4
Flash Point	Not available	Auto-ignition Temperature	446 °C [835 °F]
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Non Flammable	Viscosity @23 °C	Not available

a) From supplier SDS

411A**(AEROSOL)****Section 10: Stability and Reactivity**

Reactivity	This product is non-reactive under normal conditions of use, storage and transport.
Stabilities	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, temperatures well above 50 °C [122 °F] and incompatible substances.
Incompatibilities	Strong oxidizing agents, strong acids, strong bases, reactive metals.
Polymerization	Will not occur
Decomposition	Carbon monoxide and carbon dioxide. Hydrogen chloride and hydrogen fluoride.

Section 11: Toxicological Information**Summary of Effects and Symptoms by Routes of Exposure**

Eyes	Causes eye redness, serious irritation, tearing, and pain.
Skin	Causes skin redness, dry skin, skin irritation, and blistering.
Inhalation	May cause drowsiness, dizziness, cough, and headaches.
Ingestion	May cause sore throat, dizziness, drowsiness, and headaches.
Chronic	Prolonged and repeated exposure may lead to skin sensitization.

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411A**(AEROSOL)****Acute Toxicity (Lethal Exposure Concentrations)**

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
(1Z)-1-Chloro-2,3,3-trifluoroprop-1-ene	>2 000 mg/kg Rat	>2 000 mg/kg Rat	13.82 ppm 4 h Rat (vapor)
(E)-1-Chloro-2,3,3,3-trifluoroprop-1-ene	Not available	Not available	Not available

Note: Toxicity data from the ECHA databases were consulted. The data from supplier SDSs were also consulted.

Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met
Carcinogenicity (risk of cancer)	Based on available data, the classification criteria are not met
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.

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411A**(AEROSOL)****STOT-single exposure**

Inhalation of (1Z)-1-Chloro-2,3,3-trifluoroprop-1-ene may affect the central nervous system.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

The liquid content does not meet the aspiration hazard criteria. The mixture doesn't contain category 1 substances.

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.

The (1Z)-1-Chloro-2,3,3-trifluoroprop-1-ene lowest valid LC50 96 h is 110 mg/l for the Medaka (*Oryzias latipes*).

Acute Ecotoxicity

See chronic ecotoxicity.

Chronic Ecotoxicity

Category 3

Harmful to aquatic life with long lasting effects

Avoid release to the environment.

Biodegradability

No readily biodegradable

Bioaccumulative Potential

Not available

Mobility in Soil

Not available

Other Effects

Not available

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

Sizes 1 L and under
411a-300G
Limited Quantity


Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 1 L and under
411a-300G
Limited Quantity
 Max Net Qty/Pkg
 30 kg Gross



FOR REFERENCE ONLY
UN number: UN1950
Shipping Name: Aerosols, non-flammable
Class: 2.2
Packing Group: Not applicable
Marine Pollutant: No

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Sea
Refer to IMDG Regulation.

Sizes 1 L and under
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Limited Quantity



FOR REFERENCE ONLY

UN number: UN1950

Shipping Name: Aerosols, non-flammable

Class: 2.2

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)

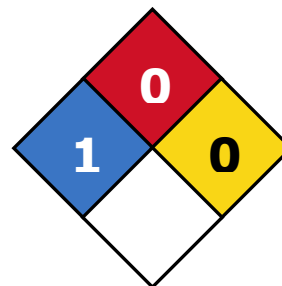
All hazardous ingredients are listed on the DSL/NDSL.

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:	*	1
FLAMMABILITY:		0
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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411A**(AEROSOL)****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, USA).

This product does not contain any of the listed substances.

Europe**RoHS** (Restriction of Hazardous Substance 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 electronic equipment and is therefore not governed by this regulation.

Section 16: Other Information

SDS Prepared by MG Chemicals' Regulatory Department

Date of Issue 26 July 2023.

Supersedes 06 July 2023.

Reason for Changes: Update to size of 411a.

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411A**(AEROSOL)****References**

1) ACGIH 2023 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 (2023).

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.

Email: support@mgchemicals.com

Phone : +1-905-331-1396

Mailing Addresses *Manufacturing & Support*
1210 Corporate Drive
Burlington, Ontario, Canada
L7L 5R6

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