

419C

ACRYLIC CONFORMAL COATING

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: 419C**Other Means Of Identification:** Acrylic Conformal Coating**Related Part #** 419C-55ML, 419C-1L, 419C-4L, 419C-20L

Recommended Use and Restriction on Use

Use: Protective dielectric coating for printed circuit boards**Uses Advised Against:** Not applicable

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADAMG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
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: Hazard(s) Identification
Classification of the Hazardous Chemical
GHS Categories

Criteria	Category	Signal Word	Pictograms
Flammable Liquid	2	Danger	Flame
Reproductive Hazard	2	Warning	Health
Eye Irritation	2	Warning	Exclamation
Specific Target Organ Toxicity Single exposure	3	Warning	Exclamation
Hazardous to the Aquatic Environment Chronic	3	<i>none</i>	<i>none</i>

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	DANGER
Pictograms	Hazard Statements
	H225: Highly flammable liquid and vapor
	H361: Suspected of damaging fertility or the unborn child
	H319: Causes serious eye irritation H336: May cause drowsiness or dizziness
<i>none</i>	H412: Harmful to aquatic life with long lasting effects

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Prevention	Precautionary Statements
P102	Keep out of reach of children.
P201, P202	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating, and lighting equipment.
P243	Take action to prevent static discharges.
P280	Wear protective gloves, protective clothing, eye protection, and face protection.
P264	Wash hands thoroughly after handling.
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
P308 + P313	IF exposed or concerned for all routes of exposure: Get medical advice or attention.
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P303 + P361 + P364, P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before use. Rinse skin with water or shower.
P305 + P351 + P338	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 or attention.
P304 + P340, P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.
Storage	Precautionary Statements
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

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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
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
141-78-6	ethyl acetate	45%
67-64-1	acetone	20%
110-82-7	cyclohexane	0.6%
108-88-3	toluene	0.6%

Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
IF ON SKIN (or hair)	P303 + P361 + P364, P353
Immediate Symptoms	<i>redness, dry skin</i>
Response	Take off immediately contaminated clothing. Wash contaminated clothing before reuse. Rinse with water or shower.
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	<i>redness, irritation, pain, blurred vision</i>
Response	Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

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IF INHALED	P304 + P340, P312, P308 + P313
Immediate Symptoms	<i>dizziness, drowsiness, headaches, cough, sore throat, nausea, weakness, unconsciousness</i>
Response	Remove person to fresh air and keep comfortable for breathing. If you feel unwell: Call a POISON CENTER or doctor IF exposed or concerned: Get medical advice or attention.
IF SWALLOWED	P301 + P310, P331, P308 + P313
Immediate Symptoms	<i>nausea, vomiting, abdominal cramps, diarrhea, irritation</i>
Response	Immediately call a POISON CENTRE or doctor. Do NOT induce vomiting. IF exposed or concerned: Get medical advice or attention.

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use dry chemical, carbon dioxide, or chemical foam to extinguish. Use water spray to cool containers.
Specific Hazards	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. Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Combustion produces carbon oxides (CO, CO ₂) and smoke.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

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ACRYLIC CONFORMAL COATING**Section 6: Accidental Release Measures**

Personal Protection	See personal protection equipment in Section 8.
Precautions for Response	Avoid breathing mist, spray, or vapors. Remove or keep away all sources of ignition or extreme heat.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment Methods	Contain with inert absorbent (such as soil, sand, vermiculite).
Cleaning Methods	Sprinkle inert absorbent compound onto spill, then sweep into the container. Collect the liquid in a sealable, chemical-resistant container. Use soap and water to remove the last traces of residue. RECOMMENDATION: Use a grounded stainless steel or carbon steel container.
Disposal Methods	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep out of reach of children. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment. Take action to prevent static discharges. Avoid breathing mist, vapors, or spray. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Avoid release to the environment.
Handling	Wear protective gloves, protective clothing, eye protection, and face protection. Wash hands thoroughly after handling.
Storage	Store in a well-ventilated place. Keep cool. Store locked up.

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Section 8: Exposure Controls/Personal Protection
Substances with Occupational Exposure Limit Values

Chemical Name	Country or Vendor	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
ethyl acetate	ACGIH	400 ppm	Not established
	U.S.A. OSHA PEL	400 ppm	Not established
	Canada AB	400 ppm	Not established
	Canada BC	150 ppm	Not established
	Canada ON	400 ppm	Not established
	Canada QC	400 ppm	Not established
acetone	ACGIH	500 ppm	750 ppm
	U.S.A. OSHA PEL	1 000 ppm	Not established
	Canada AB	500 ppm	750 ppm
	Canada BC	250 ppm	500 ppm
	Canada ON	500 ppm	750 ppm
	Canada QC	750 ppm	1 000 ppm
cyclohexane	ACGIH	100 ppm	Not established
	U.S.A. OSHA PEL	300 ppm	Not established
	Canada AB	100 ppm	Not established
	Canada BC	100 ppm	Not established
	Canada ON	100 ppm	Not established
	Canada QC	300 ppm	Not established
toluene	ACGIH	20 ppm	Not established
	U.S.A. OSHA PEL	200 ppm	300 ppm
	Canada AB	50 ppm	Not established
	Canada BC	20 ppm	Not established
	Canada ON	20 ppm	Not established
	Canada QC	100 ppm	150 ppm

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' SDS were also consulted. Short term exposure limits (STEL) are 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).

RECOMMENDATION: Respect the time weighted average of 400 ppm for ethyl acetate.

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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 likely contacts, use of protective butyl rubber, fluorinated rubber, or other chemically resistant gloves.

For incidental contacts, use nitrile, neoprene, PVC gloves, or other chemically resistant gloves.

Respiratory Protection

For over-exposures up to 10 x OEL of mist, vapors, or spray, wear respirator such as a half-mask respirator with organic vapor cartridges.

Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus.

Respiratory Protection

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.

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Section 9: Physical and Chemical Properties

Physical State	Liquid	Lower Flammability Limit	2%
Appearance	Clear	Upper Flammability Limit	12%
Odor	Ethereal	Vapor Pressure @20 °C ^{c)}	~15 kPa [~112 mmHg]
Odor Threshold	Not available	Vapor Density	>2 (Air = 1)
pH	Not available	Relative Density @25 °C	0.88
Freezing/Melting Point	Not available	Solubility in Water	Partly soluble
Initial Boiling Point ^{a)}	≥56 °C [133 °F]	Partition Coefficient n-octanol/water	Not available
Flash Point ^{a, b)}	-17°C [1.4 °F]	Auto-ignition Temperature ^{d)}	427 °C [801 °F]
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Highly flammable	Viscosity @25 °C	Not available

a) Lowest component literature value, which corresponds to acetone

b) Closed cup

c) Estimated using Raoult's Law and Le Chatelier Principle calculation for solvent

d) Lowest component auto-ignition literature value, which corresponds to ethyl acetate

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Avoid ignition sources, extreme temperatures, and incompatible substances.
Incompatibilities	Strong oxidizing agents, strong reducing agents, strong acids, strong bases
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	May cause redness, irritation, blurred vision, and pain.
Skin	May causes redness and dry skin.
Inhalation	May cause cough, dizziness, drowsiness, or nausea. For extreme exposures, it may cause sore throat, headaches, or weakness.
Ingestion	May nausea, vomiting, abdominal cramps, diarrhea and irritation.
Chronic	Prolonged and repeated exposure may cause dermatitis and defatting of the skin.

Lethal Exposure Concentrations

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
ethyl acetate	5 620 mg/kg Rat	>20 000 mg/kg Rabbit	45 g/m ³ Mouse 2 h
acetone	5 800 mg/kg Rat	20 mL/kg Rabbit ^{a)}	16 000 ppm Rat 6 h ^{a)}
cyclohexane	>5 000 mg/kg Rat	>2 000 mg/kg Rabbit	>33 mg/L Rat 4 h
toluene	5 580 mg/kg Rat	>5 g/kg Rabbit	49 mg/L Rat 4 h

Note: Toxicity data from the RTECS² and ECHA databases were consulted. The data from supplier SDS were also consulted.

a) LCLo value

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ACRYLIC CONFORMAL COATING**Other Toxicological Effects****Skin Corrosion/Irritation**

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

Serious Eye Damage/Irritation

Acetone and ethyl acetate are known serious eye irritants.

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)

At high doses, spermatogenesis was observed in male rat by inhalation of toluene.

Teratogenicity
(risk of fetus malformation)

Fetotoxicity is observed in animal studies for inhalation and oral exposures for toluene. Extreme consumption of ethanol also presents risks for the newborn.

STOT-Single Exposure

Inhalation of ethyl acetate, acetone, cyclohexane, and toluene may affect the central nervous system. At very large doses.

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 is less than 10% category 1 components.

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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.

Cyclohexane is an acute category 1 and chronic category 1 environmental toxicant. It has a minimal LC50 96 h of 4.53 mg/L for Pimephales promelas (fathead minnow) and an EC50 48 h of 0.9 mg/L for Daphnia magna.

Toluene is an acute category 2 aquatic environmental toxicant. It has a minimal LC50 96 h of 7.63 mg/L for Oncorhynchus mykiss (rainbow trout); EC50 24 h of 8.9 mg/L Daphnia magna (water flea); and EC50 24 h of 10 mg/L Pseudokirchneriella subcapitata (green algae).

Ethyl acetate, and acetone are not classifiable as an environmental toxicant with minimal LC50 of >100 mg/L.

- Ethyl acetate is biodegradable and has minimal LC50 96 h of 220 mg/L for Pimephales promelas (fathead minnow); LC50 24 h of 560 mg/L and EC50 24 h of 2 300 mg/L Daphnia magna (water flea).
- Acetone has a minimal LC50 96 h of 5 540 mg/L for Oncorhynchus mykiss (rainbow trout) and an EC50 48 h of 13 500 mg/L for Daphnia magna (water flea).

Acute Ecotoxicity

See chronic ecotoxicity.

Chronic Ecotoxicity

Category 3

Harmful to aquatic life with long lasting effects.

Avoid release to the environment.

Biodegradability

Not available

Other Effects

Volatile Organic Compound (VOC) content = 63% [552 g/L]

Section 13: Disposal Considerations

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

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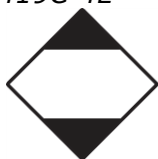
Section 14: Transport Information

Ground

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

Sizes 5 L and under
419C-55ML, 419C-1L, 419C-4L

Limited Quantity



Sizes greater than 5 L (Cargo)
419C-20L

UN number: UN1263

Shipping Name: PAINT

Class: 3

Packing Group: II

Marine Pollutant: No



Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 0.5 L and under
Part 419C-55ML

Limited Quantity

Max Net QTY/Pkg
1 L gross



Sizes up to 5 L (Passenger), 60 L (Cargo)
419C-1L, 419C-4L, 419C-20L

UN number: UN1263

Shipping Name: PAINT

Class: 3

Packing Group: II

Marine Pollutant: No



Sea

Refer to IMDG regulations.

Sizes 5 L and under
419C-55ML, 419C-1L, 419C-4L

Limited Quantity



Sizes greater than 5 L (Cargo)
419C-20L

UN number: UN1263

Shipping Name: PAINT

Class: 3

Packing Group: II

Marine Pollutant: No



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

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

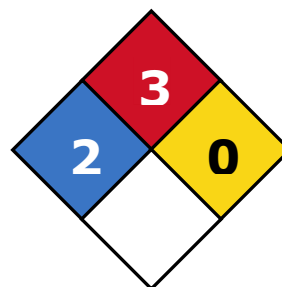
All hazardous ingredients are listed on the DSL/NDSL.

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)

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 contains toluene, which is listed as a hazardous air pollutant.

EPCRA (Emergency Planning and Community Right to Know Act, USA, 40 CFR 372.45)

This product contains ethyl acetate (CAS# 141-78-6) and acetone (CAS# 67-64-1), which are subject to the CERCLA reporting requirements at the 5 000 lb (2 268 kg) threshold.

This product contains toluene (CAS# 108-88-3; reportable quantity = 1 000 lb) and cyclohexane (CAS# 110-82-7, reportable quantity = 1 000 lb), which are subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

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419C**ACRYLIC CONFORMAL COATING****TSCA** (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity.)

This product contains toluene, which is listed as reproductively toxic.

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	MG Chemicals' Regulatory Department
Date of Revision	26 February 2020
Supersedes	18 November 2019
Reason for Changes:	Update to the emergency phone number information.

Reference

- 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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419C**ACRYLIC CONFORMAL COATING****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%
LD50	Lethal Dose 50%
PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
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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