

**ACRYLIC CONFORMAL COATING****419C-LIQUID**

# Safety Data Sheet

**Section 1: Identification****Product Identifier and Other Means of Identification****Product Name:** Acrylic Conformal Coating**SDS Code:** 419C-Liquid**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****Manufacturer**MG 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](mailto:support@mgchemicals.com)**WEB** [www.mgchemicals.com](http://www.mgchemicals.com)**☎** +1-905-331-1396**FAX** +1-905-331-2682**E-MAIL** [info@mgchemicals.com](mailto:info@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 at **+1-800-424-9300****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





**ACRYLIC CONFORMAL COATING**
**419C-LIQUID**
**Section 2: Hazard(s) Identification**
**Classification of the Hazardous Chemical**
**GHS Categories**

Criteria	Category	Signal Word	Pictograms
Flammable Liquid	2	Danger	Flame
Aspiration Hazard	1	Danger	Health
Eye Irritation	2	Warning	Exclamation
Skin Irritation	2	Warning	Exclamation
Specific Target Organ Toxicity Single exposure	3	Warning	Exclamation
Hazardous to the Aquatic Environment Chronic	2	<i>none</i>	Environment

*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	<b>DANGER</b>
Pictograms	Hazard Statements
	H225: Highly flammable liquid and vapor
	H304: May be fatal if swallowed and enters airways
	H319: Causes serious eye irritation H315: Causes skin irritation H336: May cause drowsiness or dizziness
	H411: Toxic to aquatic life with long lasting effects

*Section continued on the next page*

**ACRYLIC CONFORMAL COATING**
**419C-LIQUID**
*Continued...*

<b>Prevention</b>	<b>Precautionary Statements</b>
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P243	Take action to prevent static discharges.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P264	Wash hands thoroughly after handling.
P261	Avoid breathing vapors/mist/spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
<b>Response</b>	<b>Precautionary Statements</b>
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P303 + P361 + P364, P352	IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before use. Wash with plenty of water.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P301 + P310, P331	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting.
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/attention.
P304 + P340, P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P391	Collect spillage.
<b>Storage</b>	<b>Precautionary Statements</b>
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

*Section continued on the next page*

**ACRYLIC CONFORMAL COATING**
**419C-LIQUID**

Continued...

Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/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	50%
67-64-1	acetone	16%
142-82-5	n-heptane	12%
108-65-6	1-methoxy-2-propanol acetate <sup>a)</sup>	5%

a) Commonly known as propylene glycol methyl ether acetate (PGMEA)

**Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
<b>IF ON SKIN (or hair)</b>	P303 + P361, P352, P332 +P313, P363
<b>Immediate Symptoms</b>	<i>irritation, redness, dry skin</i>
<b>Response</b>	Take off immediately contaminated clothing. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
<b>IF SWALLOWED</b>	P301 + P310, P331
<b>Immediate Symptoms</b>	<i>nausea, vomiting, abdominal cramps, diarrhea, irritation</i>
<b>Response</b>	Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting.

Section continued on the page

**ACRYLIC CONFORMAL COATING****419C-LIQUID***Continued...*

<b>IF IN EYES</b>	P305 + P351 + P338, P337 + P313
<b>Immediate Symptoms</b>	<i>redness, irritation, pain, blurred vision</i>
<b>Response</b>	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.
<b>IF INHALED</b>	P304 + P340, P312
<b>Immediate Symptoms</b>	<i>dizziness, drowsiness, headaches, cough, sore throat, nausea, weakness</i>
<b>Response</b>	Remove person to fresh air and keep comfortable for breathing.  If you feel unwell: Call a POISON CENTER/doctor

**Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	In case of fire: Use dry chemical, carbon dioxide, or chemical foam to extinguish. Use water spray to cool containers.
<b>Specific Hazards</b>	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.
<b>Combustion Products</b>	Combustion produces carbon oxides (CO, CO <sub>2</sub> ) and smoke.
<b>Fire-Fighter</b>	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

**Section 6: Accidental Release Measures**

<b>Personal Protection</b>	See personal protection equipment in Section 8.
<b>Precautions for Response</b>	Avoid breathing mist/spray/vapors. Remove or keep away all sources of ignition or extreme heat.
<b>Environmental Precautions</b>	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
<b>Containment Methods</b>	Contain with inert absorbent (such as soil, sand, vermiculite).

*Section continued on the next page*

**ACRYLIC CONFORMAL COATING****419C-LIQUID**

<b>Cleaning Methods</b>	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.  <b>RECOMMENDATION:</b> Use a grounded stainless steel or carbon steel container.
<b>Disposal Methods</b>	Dispose of spill waste according to Section 13.

**Section 7: Handling and Storage**

<b>Prevention</b>	Keep out of reach of children.  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take action to prevent static discharges.  Avoid breathing mist/vapors/spray. Use only outdoors or in a well-ventilated area. Keep container tightly closed.  Avoid release to the environment.
<b>Handling</b>	Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling.  Collect spillage.
<b>Storage</b>	Store in a well-ventilated place. Keep cool.  Store locked up.

**ACRYLIC CONFORMAL COATING**
**419C-LIQUID**
**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
n-heptane	ACGIH	400 ppm	500 ppm
	U.S.A. OSHA PEL	500 ppm	Not established
	Canada AB	400 ppm	500 ppm
	Canada BC	400 ppm	500 ppm
	Canada ON	400 ppm	500 ppm
	Canada QC	400 ppm	500 ppm
1-methoxy-2-propanol acetate	ACGIH	Not established	Not established
	U.S.A. WEEL	50 ppm	Not established
	Canada AB	Not established	Not established
	Canada BC	50 ppm	75 ppm
	Canada ON	50 ppm	Not established
	Canada QC	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 the RTECS<sup>2</sup> 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.

*Section continued on the next page*

**ACRYLIC CONFORMAL COATING****419C-LIQUID****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/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.



**ACRYLIC CONFORMAL COATING**
**419C-LIQUID**
**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Liquid	<b>Lower Flammability Limit</b>	2%
<b>Appearance</b>	Clear	<b>Upper Flammability Limit</b>	12%
<b>Odor</b>	Ethereal	<b>Vapor Pressure @20 °C <sup>c)</sup></b>	~13 kPa [~98 mmHg]
<b>Odor Threshold</b>	Not available	<b>Vapor Density</b>	>2 (Air = 1)
<b>pH</b>	Not available	<b>Specific Gravity @25 °C</b>	0.874
<b>Freezing/Melting Point</b>	Not available	<b>Solubility in Water</b>	Partially soluble
<b>Boiling Point <sup>a)</sup></b>	≥56 °C [133 °F]	<b>Partition Coefficient</b>	Not available
<b>Flash Point <sup>a, b)</sup></b>	-17°C [1.4 °F]	<b>Auto-ignition Temperature <sup>d)</sup></b>	≥223 °C [≥433 °F]
<b>Evaporation Rate</b>	>1 (ButAc = 1)	<b>Decomposition Temperature</b>	Not available
<b>Flammability (solid, gas)</b>	Not applicable	<b>Viscosity @25 °C</b>	8 mm <sup>2</sup> /s

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 n-heptane

**ACRYLIC CONFORMAL COATING****419C-LIQUID****Section 10: Stability and Reactivity**

<b>Reactivity</b>	Not available
<b>Chemical Stability</b>	Chemically stable at normal temperatures and pressures
<b>Conditions to Avoid</b>	Avoid ignition sources, extreme temperatures, and incompatible substances.
<b>Incompatibilities</b>	Strong oxidizing agents, strong reducing agents, strong acids, strong bases
<b>Polymerization</b>	Will not occur
<b>Decomposition</b>	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**

<b>Eyes</b>	May cause redness, irritation, blurred vision, and pain.
<b>Skin</b>	May causes redness, irritation, and dry skin.
<b>Inhalation</b>	May cause cough, dizziness, drowsiness, or nausea. For extreme exposures, it may cause sore throat, headaches, weakness, or unconsciousness.
<b>Ingestion</b>	May nausea, vomiting, abdominal cramps, diarrhea and irritation.
<b>Chronic</b>	Prolonged and repeated exposure may cause dermatitis and defatting of the skin.

*Section continued on the next page*

**ACRYLIC CONFORMAL COATING**
**419C-LIQUID**
**Lethal Exposure Concentrations**

<b>Chemical Name</b>	<b>LD50 oral</b>	<b>LD50 dermal</b>	<b>LC50 inhalation</b>
ethyl acetate	5 620 mg/kg Rat	>20 000 mg/kg Rabbit	45 g/m <sup>3</sup> Mouse 2 h
acetone	5 800 mg/kg Rat	20 mL/kg Rabbit <sup>a)</sup>	16 000 ppm Rat 6 h <sup>a)</sup>
n-heptane	>5 000 mg/kg Rat <sup>b)</sup>	>2 000 mg/kg Rabbit <sup>b)</sup>	103 g/m <sup>3</sup> Rat 4 h
1-methoxy-2-propanol acetate	8 532 mg/kg Rat	>5 g/kg Rabbit	Not available

*Note:* Toxicity data from the RTECS<sup>2</sup> and ECHA databases were consulted. The data from supplier (M)SDS were also consulted.

a) LCLo value

b) From supplier SDS

**Other Toxicological Effects**
**Skin corrosion/irritation**

The n-heptane component is a skin irritant.

**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)

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.

**STOT-single exposure**

Inhalation of ethyl acetate, acetone, n-heptane, and 1-methoxy-2-propanol acetate may affect the central nervous system. At very large dosed, n-heptane may impair liver function.

*Section continued on the next page*

**ACRYLIC CONFORMAL COATING****419C-LIQUID****STOT-repeated exposure**

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

**Aspiration hazard**

Mixture is classified as aspiration hazard. It has a contribution of 12% n-heptane category 1 aspiration hazard and its viscosity at 40 °C is <20 mm<sup>2</sup>/s.

**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 n-heptane component is an acute category 1 and chronic category 1 environmental toxicant with minimal LC50 of 4 mg/L for *Carrassius auratus* (gold fish); EC 50 48 h 13 500 mg/L *Daphnia magna* (water flea).

Ethyl acetate, acetone, and 1-methoxy-2-propanol acetate 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 fathead minnow (*Pimephales promelas*); 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).
- 1-methoxy-2-propanol has a minimal LC50 96 h of ≥100 mg/L *Salmo gairdneri* and an EC50 48 h of >500 mg/L for *Daphnia magna* (water flea).

**Acute Ecotoxicity**

See chronic ecotoxicity.

**Chronic Ecotoxicity**

Category 2

Toxic to aquatic life with long lasting effects.

Avoid release to the environment. Collect spillage.

**Biodegradability**

Not available

**Other Effects**

Volatile Organic Compound (VOC) content = 67% [585 g/L]

*Note:* Using acetone exemption in accordance with EPA and WHIMS

**ACRYLIC CONFORMAL COATING**
**419C-LIQUID**
**Section 13: Disposal Considerations**

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.**

Sizes 5 L and under

**Limited Quantity**



Sizes greater than 5 L (Cargo)

**UN number:** UN1263  
**Shipping Name:** PAINT  
**Class:** 3  
**Packing Group:** II  
**Marine Pollutant:** Yes


**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)

**UN number:** UN1263  
**Shipping Name:** PAINT  
**Class:** 3  
**Packing Group:** II  
**Marine Pollutant:** Yes



*Section continued on the next page*

**ACRYLIC CONFORMAL COATING**
**419C-LIQUID**
**Sea**
**Refer to IMDG regulations.**

Sizes 5 L and under

**Limited Quantity**


Sizes greater than 5 L (Cargo)

**UN number:** UN1263  
**Shipping Name:** PAINT  
**Class:** 3  
**Packing Group:** II  
**Marine Pollutant:** Yes


*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)**

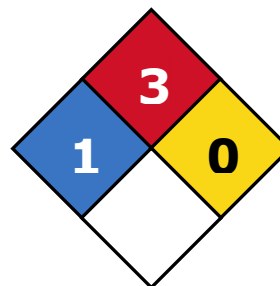
All hazardous ingredients are listed on the DSL/NDSL.

**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**

<b>HEALTH:</b>	<b>*</b>	<b>1</b>
<b>FLAMMABILITY:</b>		<b>3</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)

*Section continued on the next page*

**ACRYLIC CONFORMAL COATING****419C-LIQUID****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 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.

**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 does not contain any of the listed substances.

**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**

<b>SDS Prepared by</b>	Michel Hachey
<b>Date of Revision</b>	06 December 2017
<b>Supersedes</b>	14 June 2017
<b>Reason for Changes:</b>	Minor formatting changes.

**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®)

*Section continued on the next page*

**ACRYLIC CONFORMAL COATING****419C-LIQUID****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](http://www.mgchemicals.com).

Email: [support@mgchemicals.com](mailto:support@mgchemicals.com)

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

*Head Office*  
9347-193rd Street  
Surrey, British Columbia, Canada  
V4N 4E7

**Disclaimer** This material safety data sheet is provided as an information resource only. *M.G. Chemicals, Ltd.* believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to query and verify any information seeming suspect where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, regional, national, and international regulations.