

## ACRYLIC LACQUER CONFORMAL COATING

## 419B-LIQUID

# Safety Data Sheet

## Section 1: Product and Company Identification

### Product Identifier and Other Means of Identification

**Product Name:** Acrylic Lacquer Conformal Coating**SDS Code:** 419B-Liquid**Related Part #:** 419B-55ML, 419B-1L, 419B-4L, 419B-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  
CANADA

MG 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 accidentsUSA or CANADA: Call CHEMTREC ☎: **1-800-424-9300****For emergencies involving dangerous goods;** Collect 24/7CANADA: Call CANUTEC ☎: **1-613-996-6666** or **\*666** on cellular phones

**ACRYLIC LACQUER CONFORMAL COATING**

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**Section 2: Hazards Identification**

**Classification of Hazardous Chemical**

**WHMIS Classification**



B2 – Flammable Liquid;  
 D2A – Very Toxic Material (Teratogenicity/Embryotoxicity);  
 D2B – Toxic Material (Central nervous system intoxicant; Skin/eye irritation)

**GHS Categories**

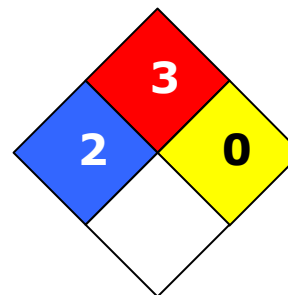
Criteria	Category	Signal Word	Pictograms
Flammable liquid	2	Danger	
Eye irritation	2	Warning	
Skin irritation	2	Warning	
Specific target organ toxicity Single exposure	3	Warning	
Reproductive toxicity	2	Warning	
Specific target organ toxicity Repeated exposure	2	Warning	
Environmental Hazard Acute Aqua. Tox.	3	—	No Symbol mandated

**Other Classifications**

**HMIS® RATING**

<b>HEALTH:</b>	<b>2</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)

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**Label Elements**

<b>Signal Word</b>	<b>DANGER</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H225: Highly flammable liquid and vapour
	H315: Causes skin irritation H319: Causes severe eye irritation H336: May cause drowsiness and dizziness
	H373: May cause damage to organs (affected organ: central nervous system) through prolonged or repeated exposure H361: Suspected of damaging fertility or the unborn child
No Symbol Mandated	H402: Harmful to aquatic life
	<b>Precautionary Statements</b>
<b>Prevention</b>	P201 + P202: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. P233: Keep container tightly closed. P240: Ground/bond container and receiving equipment. P242 + P241 + P243: Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge. P280: Wear protective gloves/eye protection. P264: Wash hands thoroughly after handling. P261: Avoid breathing gas/vapors/mist/spray. P271: Use outdoors or in a well-ventilated area. P273: Avoid release to the environment.

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<b>Response</b>	<p>P370 + P378: In case of fire: Use dry chemical, carbon dioxide, or chemical foam to extinguish.</p> <p>P304+ P340 + P312: IF INHALED: Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell or concerned.</p> <p>P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P303 + P361+ P364 +P352: IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of water/shower.</p> <p>P332 + P337+ P313: If eye or skin irritation occurs or persists: Get medical advice/attention.</p>
<b>Storage</b>	<p>P403 + P235: Store in well ventilated place. Keep cool.</p> <p>P405: Store locked up.</p>
<b>Disposal</b>	<p>P501: Dispose of contents/container in accordance to local/regional/national/international regulations.</p>

### Other Hazards

Repeated exposure may cause skin dryness or cracking.

### Section 3: Hazardous Ingredients

CAS #	Chemical Name	Wt%
108-88-3	toluene	32-35%
110-19-0	isobutyl acetate	9-10%
110-43-0	heptan-2-one	9-10%
64-17-5	ethanol	9-10%
141-78-6	ethyl acetate	4.5-5%

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**Section 4: First Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
<b>IF INHALED</b>	P304
<b>Symptoms</b>	Immediate: <i>dizziness, drowsiness, headaches, cough, sore throat, short breath</i>
<b>Response</b>	P340: Remove person to fresh air and keep comfortable for breathing.
<b>If you feel unwell</b>	P312: Call a POISON CENTRE or physician
<b>IF IN EYES</b>	P305
<b>Symptoms</b>	Immediate: <i>irritation, redness, pain, blurred vision</i>
<b>Response</b>	P351: Rinse cautiously with water for several minutes. P338: Remove contact lenses, if present and easy to do. Continue rinsing.
<b>If eye irritation persists</b>	P313: Get medical attention.
<b>IF ON SKIN (or hair)</b>	P303
<b>Symptoms</b>	Immediate: <i>irritation, redness, dry skin</i>
<b>Response</b>	P361+ P364: Take off immediately all contaminated clothing and wash it before reuse. P352: Wash with plenty of water/shower.
<b>If skin irritation occurs</b>	P313: Get medical attention.
<b>IF SWALLOWED</b>	P301 ( <i>Not a likely route of exposure under normal use</i> )
<b>Symptom</b>	Immediate: <i>nausea, vomiting, abdominal cramps, irritation, or burning sensation</i>
<b>Response</b>	P330 + P331: Rinse mouth. Do NOT induce vomiting.
<b>If you feel unwell or concerned</b>	P312: Call a POISON CENTRE or physician

**ACRYLIC LACQUER CONFORMAL COATING****419B-LIQUID****Section 5: Fire Fighting Measures**

<b>Auto-ignition Temperature</b> <sup>a)</sup>	≥363 °C [685 °F]	<b>Flash Point</b> <sup>b)</sup>	-3 °C [-27 °F]	<b>LFL [LEL]</b> <sup>c)</sup>	1%
				<b>UFL [UEL]</b>	11%

**In case of fire** P370

**Response** P378: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.

**Combustion Products** Produces CO and CO<sub>2</sub>.

**General Information** Vapors may accumulate in low-lying areas. They can cause flash fire or ignite explosively.

a) Ethanol literature value, which is the lowest auto-ignition component.

b) Ethyl acetate literature value, which is the component with the lowest flash point.

c) 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 fume/mist/vapors.

**Containment** Remove all sources of ignition.

**Cleaning** Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash spill area with soap and water to remove the last traces of residue.

**RECOMMENDATION:** A metal container is suggested.

**Disposal** Dispose of spill waste according to Section 13.

**ACRYLIC LACQUER CONFORMAL COATING****419B-LIQUID****Section 7: Handling and Storage**

- Prevention** P201 + P202: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P242 + P241 + P243: Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge.
- P261 + P271: Avoid breathing fume/mist/vapors. Use only outdoors or in well ventilated area.
- Handling** P280 + P264: Wear protective gloves/eye protection. Wash thoroughly after handling.
- P270: Do not eat, drink, or smoke when using this product.
- Storage** P403 + P235: Store in a well-ventilated and dry area. Keep cool.

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

**Routes of Entry**

Eyes, ingestion, inhalation, and skin

**Substances with Occupational Exposure Limit Values**

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
		ppm	ppm
toluene	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	20 (TWA) 100 50 20 50 100	Not established 150 — — — 150
heptan-2-one	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	50 100 50 50 25 50	Not established Not established Not established Not established Not established Not established
isobutyl acetate	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	150 150 150 150 150 150	Not established Not established Not established Not established Not established Not established
ethanol	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	1 000 1 000 1 000 Not established Not established 1 000	Not established Not established Not established 1 000 1 000 500
ethyl acetate	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	400 400 400 150 Not established 400	Not established Not established Not established Not established Not established Not established

*Note:* Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH<sup>2</sup>, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS database<sup>1</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.



**ACRYLIC LACQUER CONFORMAL COATING****419B-LIQUID****Engineering Controls****Ventilation**

Keep airborne concentrations below exposure limits.

**RECOMMENDATION:** Respect the time weighted average of 20 ppm for toluene.

**Personal Protective Equipment****Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

**Skin Protection**

Wear appropriate protective clothing to prevent skin contact.

**RECOMMENDATION:** Use of protective gloves in butyl rubber, fluorinated rubber, or other chemically resistant gloves.

**Respiratory Protection**

If exposed to vapor or mist, wear respirator such as a half-mask respirator with an organic vapor cartridge.

**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. Ensure that 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**

<b>Physical State</b>	Liquid	<b>Appearance</b>	Clear
<b>Odor</b>	Aromatic, ethereal like	<b>Odor Threshold</b>	~0.14 ppm
<b>pH</b>	Not available	<b>Specific Gravity</b>	0.925
<b>Solubility in Water</b>	Partially soluble	<b>Melting Point</b>	Not available
<b>Boiling Point</b> <sup>a)</sup>	≥77 °C [180 °F]	<b>Evaporation Rate</b>	>1.4 (ButAc = 1)
<b>Flash Point</b> <sup>a)</sup>	-3°C [27 °F]	<b>Vapor Pressure</b> <sup>b)</sup> @ 20 °C	41 hPa
<b>Lower Flammability Limit</b>	1%	<b>Upper Flammability Limit</b>	11 %
<b>Auto-ignition Temperature</b> <sup>c)</sup>	≥363 °C [≥685 °F]	<b>Decomposition Temperature</b>	Not available
<b>Viscosity @40 °C</b>	34 mm <sup>2</sup> /s	<b>Vapor Density</b>	>1.6 (Air = 1)
<b>Partition Coefficient</b>	Not available		

a) Lowest component literature value, which corresponds to ethyl acetate

b) Calculated using Raoult's Law

c) Lowest component auto-ignition literature value, which corresponds to ethanol

d) Kinematic viscosity at 40 °C

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

<b>Stabilities</b>	Chemically stable at normal temperatures and pressures
<b>Conditions to Avoid</b>	Ignition sources, extreme temperatures, and incompatible substances
<b>Incompatibilities</b>	Strong oxidizing agents, strong reducing agents, strong acids
<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****Routes of Exposure**

Eyes, ingestion, inhalation, and skin

**Symptoms Summary**

<b>Eyes</b>	Causes severe eye irritation if splashed in eyes or exposed to vapors. May also cause eye redness or pain.
<b>Skin</b>	May causes mild to moderate skin irritation.
<b>Inhalation</b>	May cause nose, throat and lung irritation. Inhalation of mist may cause irritation to the upper respiratory tract. Overexposure may lead to visual impairment and central nervous system effects such as dizziness, drowsiness, or weakness.
<b>Ingestion</b>	Harmful if swallowed. It may cause irritation and burning sensation. See inhalation symptoms.
<b>Chronic</b>	Prolonged and repeated exposure may cause dermatitis, defatting of the skin and adverse central nervous systems effects.  Ingestion or inhalation of paint material, mist, or vapor during pregnancy may increase the chances fetal death and developmental defects.

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**Acute Toxicity (Lethal Exposure Concentrations)**

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation	TCLo inhalation
toluene	636 mg/kg Rat	12 124 mg/kg Rabbit	49 g/m <sup>3</sup> 4h Rat	200 ppm Human
isobutyl acetate	13 400 mg/kg Rat	>17 400 mg/kg Rabbit	Not available	8 000 ppm 4h Rat LCLo <sup>a)</sup>
heptan-2-one	1 670 mg/kg Rat	12 600 µL/kg Rabbit	Not available	7 000 mg/m <sup>3</sup> 4 h Guinea pig
ethanol	7 060 mg/kg Rat	Not available	20 000 ppm 10 h Rat	2 500 mg/m <sup>3</sup> 20 min Human
ethyl acetate	5 620 mg/kg Rat	>20 000 µL/kg Rabbit	45 g/m <sup>3</sup> 2 h Mouse	400 ppm Human

*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.

a) Lowest published lethal concentration

**Skin corrosion/irritation**

Toluene is a skin irritant. Prolonged or repeated skin contact with the mixture may cause dermatitis.

**Serious eye damage/irritation**

Heptan-2-one and ethyl acetate are known serious eye irritant

**Sensitization** (allergic reactions)

No sensitization effects known

**Carcinogenicity** (risk of cancer)

No known components listed in IARC, ACGIH, CA Prop 65, or NTP

**Mutagenicity** (risk of heritable genetic effects)

Not known

**Reproductive Toxicity** (risk to sex functions)

At high doses, toluene and ethanol present a reproductive and developmental hazard.

**Teratogenicity** (risk of fetus malformation)

At high doses, fetotoxicity is observed in animal studies for inhalation and oral exposures for toluene.

**STOT-single exposure**

Inhalation of toluene, isobutyl acetate, heptan-2-one, and ethyl acetate can affect the central nervous system leading to dizziness and drowsiness.

**STOT-repeated exposure**

Toluene may cause damage to the central nervous system through prolonged and repeated exposure.

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**ACRYLIC LACQUER CONFORMAL COATING****419B-LIQUID****Aspiration hazard**

Mixture viscosity at 40°C is >20.5 mm<sup>2</sup>/s; therefore, it is not classified as aspiration hazard due despite the contribution of 35% toluene category 1 aspiration hazard.

**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.

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

Ethanol is not classifiable as an environmental toxicant (with minimal LC50 of 12 000 mg/L 96 h for *Oncorhynchus mykiss* (rainbow trout) and 5 770 mg/L for *Pimephales promelas* (fathead minnow); LC 50 48 h of 5 012 mg/L for *Ceriodaphnia* sp.)

Ethyl acetate is not classifiable as an environmental toxicant (biodegradable, with minimal LC50 of 220 mg/L for fathead minnow).

isobutyl acetate and heptan-2-one are not classifiable as an environmental toxicant (with minimal LC50 of >100 mg/L).

**Acute Ecotoxicity**

Category 3

*GHS Code: Hazard Statement*

H402: Harmful to aquatic life

P273: Avoid release to the environment

**Chronic Ecotoxicity**

Not available

**Biodegradability**

Not available

VOC (EPA, WHIMS, and Europe) = 67% [581 g/L]

\*VOC = *Volatile Organic Content*

**Section 13: Disposal Information**

P501: Dispose of contents in accordance with all local, provincial, state, and federal regulations.

**ACRYLIC LACQUER CONFORMAL COATING****419B-LIQUID****Section 14: Transport Information****Ground**

**Refer to TDG regulations** (Canadian Transportation of Dangerous Goods regulations); **USA CFR 49 Regulations** (Parts 100 to 185). **ADR** (European Agreement Concerning the International Carriage of Dangerous Goods by Road, and **ADN** (Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways).

Sizes 5 liter and under

**Limited Quantity**

Sizes greater than 5 liter

**UN number:** UN1263**Shipping Name:** PAINT RELATED MATERIAL,  
Flammable Liquid**Class:** 3**Packing Group:** II**Marine Pollutant:** No**Air****Refer to ICAO-IATA Dangerous Goods Regulations.**

All sizes

**UN number:** UN1263**Shipping Name:** PAINT RELATED MATERIAL,  
Flammable Liquid**Class:** 3**Packing Group:** II**Marine Pollutant:** No

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**ACRYLIC LACQUER CONFORMAL COATING****419B-LIQUID****Sea**

Refer to IMDG regulations.

Sizes 5 liter and under

**Limited Quantity**

Sizes greater than 5 liter

**UN number:** UN1263**Shipping Name:** PAINT RELATED MATERIAL,  
Flammable Liquid**Class:** 3**Packing Group:** II**Marine Pollutant:** No

*Note:* Component supplier SDS transportation sections and labeling were consulted. All involved staff of shipper must be appropriately trained before involvement with the transport of this product, or work under direct supervision of a trained person.

**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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**ACRYLIC LACQUER CONFORMAL COATING****419B-LIQUID****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 contains toluene that is listed as hazardous air pollutants.

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

This product contains toluene (CAS# 108-88-3; reportable quantity = 1000 lb), 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 contains toluene, which is listed as reproductively toxic.

**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.



**ACRYLIC LACQUER CONFORMAL COATING****419B-LIQUID****Section 16: Other Information**

**MSDS Prepared by** Michel Hachey  
**Date of Issue** 31 July 2013  
**Supersedes** 09 November 2010

**Reason for Changes:** Change to GHS format and update of properties

**Reference**

- 1) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)
- 2) ACGIH 2011 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 (2011).

**Abbreviations**

ACGIH American Conference of Governmental Industrial Hygienists  
GHS: Globally Harmonized System of Classification of Labeling of Chemicals  
LC50 Lethal Concentration 50%  
LCLo Lowest published lethal concentration  
LD50 Lethal Dose 50%  
N/A Not Applicable  
N/E Not Estimated  
PEL Permissible Exposure Limit  
STEL Short-Term Exposure Limit  
TCLo Lowest published toxic concentration  
TWA Time Weighted Average  
VOC Volatile Organic Content  
WEEL Workplace Environmental Exposure Levels

**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)

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Quality System Certified to ISO 9001:2008

SAI Global File #004008  
Burlington, Ontario, Canada

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**ACRYLIC LACQUER CONFORMAL COATING**

**419B-LIQUID**

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