

TOTAL GROUND CARBON CONDUCTIVE COATING 838-LIQUID

Material Safety Data Sheet

Section 1: Product and Company Identification

Product Name: Total Ground Carbon Conductive Coating **MSDS Code:** 838-Liquid

Related Part #: 838-900ML, 838-1G

Use: A carbon filled coating to make surfaces electrically conductive, thus preventing static buildups or providing EMI/RFI shielding

Emergency Contact: CANUTECH ☎: 1-613-996-6666, Collect 24/7

Manufacturer: MG Chemicals (Head Office), 9347-193 Street, Surrey, B.C., V4N 4E7

Technical Contacts: ☎ 1-800-201-8822 FAX 1-800-708-9888

E-MAIL: support@mgchemicals.com **WEB** www.mgchemicals.com

Section 2: Hazards Identification

WHMIS Classification



B2 – Flammable Liquids; D2A – Very Toxic Material (Carcinogenicity IARC: 2B, Teratogenicity/Embryotoxicity); D2B – Toxic Material (Skin/Eye Irritation)

GHS Pictograms



Note: The carcinogenic warning applies mainly to dust inhalation. Avoid mist inhalation during spray applications.

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GHS Categories

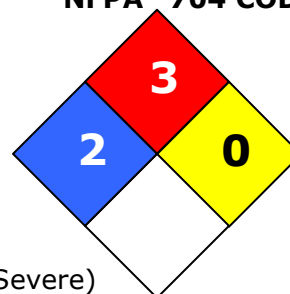
Criteria	Category	Signal Word	Symbol
Flammable Liquid	2	Danger	Flame
Eye Irritation	2A	Warning	Exclamation
Specific Target Organ Toxicity Repeated Exposure	2	Warning	Exclamation
Carcinogenicity	2	Warning	Health
Reproductive Toxicity	2	Warning	Health
Specific Target Organ Toxicity Single Exposure	3	Warning	Health
Skin Irritation	3	Warning	—
Acute Toxicity Oral ^{a)}	4	Warning	Exclamation
Acute Toxicity Inhalation ^{a)}	5	Warning	—
Environmental Hazard Acute Aquatic Tox.	3	—	—

a) Base on mixture acute toxicity estimate (ATE)

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)

Physical Hazards

GHS Code: Hazard Statement

H225: Highly flammable liquid and vapor

Health Hazards

GHS Code: Hazard Statement

H319: Causes serious eye irritation

H315: May cause skin irritation

H373: May cause damages to central nervous system through prolonged or repeated exposure.

H361: Suspected of damaging fertility or the unborn child

H336: May cause drowsiness and dizziness

H351: Suspected of causing cancer

H302: Harmful if swallowed.

H333: May be harmful inhaled

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Eyes	Causes severe eye irritation if splashed in eyes or exposed to concentrated vapors. May also cause eye redness or pain.
Skin	May cause mild to moderate skin irritation.
Inhalation	May cause nose, throat and lung irritation. Inhalation of mist may cause irritation to the upper respiratory tract.
Ingestion	<i>Not a likely route of exposure.</i> Harmful if swallowed. It is a central nervous system depressant. It may cause irritation and burning sensation.
Chronic	Prolonged and repeated exposure may cause dermatitis, defatting of the skin, and adverse central nervous systems effects. Long term exposure to carbon black dust or mist increase the chances of cancer. Ingestion or inhalation of paint material, mist, or vapor during pregnancy may increase the chances of developmental defects.

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Section 3: Hazardous Ingredients

CAS #	Chemical Name	Wt%	ACGIH TWA	OSHA PEL	STEL
108-88-3	toluene	10-30%	20 ppm	200 ppm	150 ppm ^{a)}
1333-86-4	carbon black	5-10%	3.5 mg/m ³	N/E	N/E
110-19-0	isobutyl acetate	5-10%	N/E	N/E	N/E
110-43-0	2-heptanone	5-10%	N/E	N/E	N/E
64-17-5	ethanol	5-10%	1000 ppm	1000 ppm	N/E
67-64-1	2-propanone	5-10%	500 ppm	1000 ppm	750 ppm ^{b)}
141-78-6	ethyl acetate	1-5%	400 ppm	N/E	N/E
108-65-6	1-methoxy-2-propanol acetate	0.5-1.5%	N/E	N/E	N/E
Proprietary ^{c)}	Polyester based block copolymer	0.1-1%	N/E	N/E	N/E

Note: Limits from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS). Data from suppliers' MSDS were also consulted.

a) NIOSH STEL; Vacated (retracted) OSHA STEL of 150 ppm; International standard STEL range 100 ppm to 300 ppm

b) ACGIH STEL

c) CAS number withheld by supplier as trade secret ingredient: exemption granted by the Hazardous Materials Information Review Commission, HMIRC #6410, 03 March 2003

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Section 4: First Aid Measures

Exposure Condition

GHS Code: Precautionary Statement

IF IN EYES	P305
Symptoms	Immediate: <i>irritation, redness, pain, blurred vision</i>
Response	P351: Rinse cautiously with water for several minutes. P338: Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists	P313: Get medical attention.
IF INHALED	P304
Symptoms	Immediate: <i>dizziness, drowsiness, headaches, nausea, cough, blurred vision, fatigue</i>
Response	P340: Remove person to fresh air and keep comfortable for breathing.
If you feel unwell	P312: Call a POISON CENTRE/doctor.
If exposed or concerned	P313: Get medical advice.
IF ON SKIN	P302
Symptoms	Immediate: <i>irritation, pain, redness;</i> Delayed: <i>rash or dry skin</i>
Response	P362+ P364: Take off contaminated clothing and wash it before reuse. P352: Wash with plenty of water.
If skin irritation occurs	P313: Get medical attention.
IF SWALLOWED	P301 (<i>Not a likely route of exposure under normal use</i>)
Symptom	Immediate: <i>nausea, vomiting, abdominal cramps, irritation, or burning sensation, dizziness</i>
Response	P312: Call a POISON CENTRE or physician if you feel unwell. P330: Rinse mouth. P331: Do NOT induce vomiting.
If exposed or concerned	P313: Get medical advice.

Note: GHS codes and corresponding precaution statements are used when available.

TOTAL GROUND CARBON CONDUCTIVE COATING 838-LIQUID**Section 5: Fire Fighting Measures**

Autoignition Temperature^{a)}	≥315 °C [599 °F]	Flash Point	-18 °C [-0.4 °F] ^{b)}	LFL [LEL]	1.5%
				UFL [UEL]^{c)}	9.7%

In case of fire P370**Response** P378: Use dry chemical, carbon dioxide, or chemical foam to extinguish.**Combustion Products** Produces CO, CO₂, nitrous oxides, and smoke.**General Information** Will burn if involved in a fire. Vapors are heavier than air, and may travel to sources of ignition near the ground.

Note: The GHS codes and the GHS precaution statements are used. The format is
GHS Codes: Statements.

- a) Values based on 1-methoxy-2-propanol acetate, which is the component with the lowest autoignition value.
b) Lower bound FP estimate is based on the closed cup value for the acetone component.
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 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. Wipe up further residue with paper towel and place in container. Wash spill area with soap and water to remove the last traces of residue.**Disposal** Dispose of spill waste according to Section 13.**Section 7: Handling and Storage****Prevention** P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261 + P271: Avoid breathing mist/vapors/spray. Use only outdoors or in well ventilated area.**Handling** P280: Wear protective gloves/clothing/eye protection.
P242 + P243: Use non-sparking tools. Take precautionary measures against static discharge.
P264: Wash thoroughly after handling.*Continued on the next page*

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Storage P403 + P233 + P235: Store in a well-ventilated place. Keep Container tightly closed. Keep cool.
RECOMMENDATION: Keep in a dry and clean area away from incompatible substances.

Note: The GHS codes and the GHS precaution statements are used. The format is *GHS Codes: Statements.*

Section 8: Exposure Controls/Personal Protection

Routes of Entry

Eyes, ingestion, inhalation, and skin

Engineering Controls

Ventilation Keep airborne contaminant concentrations below exposure limits given in Section 3.

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, latex, or other chemically resistant gloves.

Respiratory Protection If the exposition limits are exceeded or exposed to mist, wear respirator such as a half-mask respirator for organic vapors.

RECOMMENDATION: Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3, and that the respirator is 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 with water and soap after use.

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Section 9: Physical and Chemical Properties

Physical State	Liquid	Odor	Benzene like	Odor Threshold	Not available
Appearance	Black	Specific Gravity	0.902	Freezing Point	Not available
Boiling Point ^{a)}	>56 °C	Vapor Pressure @ 20 °C	Not available	Evaporation Rate	Fast
Autoignition Temperature ^{b)}	≥315 °C [≥599 °F]	Flash Point ^{a)}	-18 °C [-0.4 °F]	Vapor Density	>2 (Air =1)
Lower Flammability Limit ^{c)}	1.5%	Upper Flammability Limit ^{c)}	9.7%	Decomposition Temp.	Not available
Viscosity ^{d)}	≥34 mm ² /s	Partition Coefficient	Not available	Solubility in Water	Partially soluble
pH	7				

a) Values for the boiling point and closed cup flash point are based on the acetone component

b) Value based on 1-methoxy-3-propyl acetate, which has the lowest autoignition value

c) Lower and Upper Explosive Limits of mixture calculated using Le Chatelier principle and component LFL and UFL limits

d) Kinematic viscosity at 40 °C for separation layer

Section 10: Stability and Reactivity

Stabilities	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources and incompatible substances
Incompatibilities	Strong oxidizing 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

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Section 11: Toxicological Information

Skin corrosion/irritation	Skin irritant. Prolonged or repeated skin contact may cause dermatitis.
Serious eye damage/irritation	Causes serious to moderate eye irritations.
Sensitization (effects of repeated exposure)	No known hazardous effect
Carcinogenicity (risk of cancer)	Carbon Black [1333-86-4] IARC Group 2B: Possibly carcinogenic to humans ACGIH A4: Not classified as a human carcinogen CA Prop 65: Listed as a carcinogen NTP: Not listed
Mutagenicity (risk of heritable genetic effects)	Not known
Reproductive Toxicity (risk to sex functions)	Toluene, ethanol, and acetone present reproductive and developmental hazards at high doses (>13,000 µg/day)
Teratogenicity (risk of fetus malformation)	Harmful to unborn fetus at high doses
STOT-single exposure	Inhalation of toluene may affect the central nervous system
STOT-repeated exposure	Toluene may cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Mixture separation layer viscosity at 40 °C is >20.5 mm ² /s; therefore, it is not classifiable as an aspiration hazard

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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 ³ 4h Rat	200 ppm Human
carbon black	>15 g/kg Rat	>3 g/kg Rabbit	N/E	1.6 mg/m ³ 7 h Rat
isobutyl acetate	13,400 mg/kg Rat	>17,400 mg/kg Rabbit	N/E	8,000 ppm 4h Rat LCLo ^{a)}
2-heptanone	1,670 mg/kg Rat	12,600 µL/kg Rabbit	N/E	7,000 mg/m ³ 4 h Guinea pig
	730 mg/kg Mouse			
ethanol	7,060 mg/kg Rat	N/E	20,000 ppm 10 h Rat	2,500 mg/m ³ 20 min Human
	3,450 mg/kg Mouse		39 g/m ³ 4 h Mouse	50,000 mg/m ³ 2 h Mouse
2-propanone	5,800 mg/kg Rat	>9,400 µL/kg Guinea pig	44 g/m ³ 4 h Rat	10 mg/m ³ 6 h Human
	5,340 mg/kg Rabbit		50.1 g/m ³ 8 h Rat	30 g/m ³ 2 h Rat
Ethyl Acetate	5,620 mg/kg Rat	>20,000 µL/kg Rabbit	45 g/m ³ 2 h Mouse	1105 mg/m ³ 4 h Rat
	4,100 mg/kg Mouse			
1-methoxy-2-propanol acetate	8,532 mg/kg Rat	>5 g/kg Rabbit	N/E	400 ppm Human
	>5000 mg/kg Mouse			

Note: Representative toxicity data from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS) data from supplier MSDS were also consulted.
a) Lowest published lethal concentration

TOTAL GROUND CARBON CONDUCTIVE COATING**838-LIQUID****Section 12: Ecological Information****Acute Ecotoxicity**

Category 2

GHS Code: Hazard Statement

H402: Harmful to aquatic life.

P273: Avoid release to the environment.

Chronic Ecotoxicity

Unknown

Biodegradability

Microbially and photodegradable

VOC (EPA, WHIMS, and Europe) = 57% [517 g/L]

VOC = Volatile Organic Content*Section 13: Disposal Information**

P501: Dispose of contents in accordance with all local/regional/national/international regulations.

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Section 14: Transport Information

Ground (less than 4 liter size)

Consumer Commodity; ORM-D

(greater than 4 liter size)

Recommend shipper be trained and certified. Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations); **USA CFR 49 Regulations** (Parts 100 to 185).

UN number: UN1263; **Shipping Name:** Paint; **Class:** 3; **Packing Group :** II; Flashpoint -18 °C

Air

Shipper must be trained and certified. Refer to IATA Dangerous Goods Regulations.

UN number: UN1263; **Shipping Name:** Paint; **Class:** 3; **Packing Group:** II; Flashpoint -18 °C

Sea

Shipper must be trained and certified. Refer to IMDG regulations.

UN number: UN1263; **Shipping Name:** Paint; **Class:** 3; **Packing Group:** II; Flashpoint -18 °C

Section 15: Regulatory Information

Canada

Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL/NDSL.

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

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.

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TOTAL GROUND CARBON CONDUCTIVE COATING 838-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 (CAS# 108-88-3), which is listed as a hazardous air pollutant.

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

This product contains toluene (CAS# 108-88-3), 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.

This product contains carbon black (airborne, unbound particles of respirable size), which is listed as a carcinogen.

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.

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Section 16: Other Information

MSDS Prepared by	Michel Hachey
Date of Preparation	18 June 2012
Supersedes	Not applicable
Reason for Changes:	New liquid format version
Reference	All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

Abbreviations

LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
LCLo	Lethal Concentration Low observed
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

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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