

TOTAL GROUND CARBON CONDUCTIVE COATING 838-AEROSOL

Material Safety Data Sheet

Section 1: Product and Company Identification

Product Name: Total Ground Carbon Conductive Coating **MSDS Code:** 838-340G

Related Part #: 838-340G

Use: Coats surfaces to make them 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

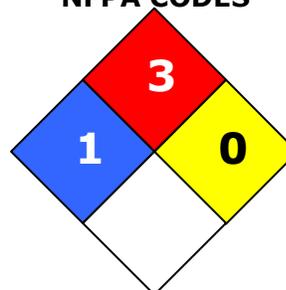


A – Aerosol Container, B5 – Flammable Aerosols; D2A – Very Toxic (Carcinogenicity IARC: 2B; Embryotoxicity); D2B – Toxic (Skin/Eye Irritation)

HMIS RATING

| | |
|-----------------------------|----------|
| HEALTH: | 1 |
| FLAMMABILITY: | 3 |
| PHYSICAL HAZARD: | 0 |
| PERSONAL PROTECTION: | |

NFPA CODES



TOTAL GROUND CARBON CONDUCTIVE COATING 838-AEROSOL
GHS Categories

| Criteria | Category | Signal Word | Symbol |
|--|----------|-------------|-------------|
| Flammable aerosol | 2 | Warning | 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)} | 5 | Warning | — |
| Acute Toxicity Dermal ^{a)} | 5 | Warning | — |
| Acute Toxicity Inhalation ^{a)} | 5 | Warning | — |
| Environmental Hazard Acute Aquatic Tox. | 3 | — | — |

a) Base on mixture acute toxicity estimate (ATE)

Physical Hazards

GHS Code: Hazard Statement

H223: Flammable aerosol.

H229: Pressurized container. May burst if heated.

Health Hazards

GHS Code: Hazard Statement

H319: Causes serious eye irritation

H335: May cause respiratory irritation

H336: May cause drowsiness and dizziness

H351: Suspected of causing cancer

H315: May cause skin irritation

H360: May damage fertility or the unborn child

Eyes Causes severe eye irritation if splashed in eyes or exposed to 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 *Not a likely route of exposure.* Harmful if swallowed. It may cause irritation and burning sensation.

Continued on the next page

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Chronic Prolonged and repeated exposure may cause dermatitis, defatting of the skin, liver and kidney damage, and adverse central nervous systems effects. Long term exposure to carbon black dust or mist may cause cancer. Ingestion or inhalation of paint material, mist, or vapor during pregnancy may increase the chances fetal death and developmental defects.

Section 3: Hazardous Ingredients

| CAS # | Chemical Name | Wt% | ACGIH TWA | OSHA PEL | STEL |
|--------------------------|---------------------------------|--------|-------------------------|----------|----------------------|
| 811-97-2 | 1,1,1,2-tetrafluoroethane | 40-70% | [1000 ppm] ^a | N/E | N/E |
| 1333-86-4 | carbon black | 1-5% | 3.5 mg/m ³ | N/E | N/E |
| 67-64-1 | 2-propanone | 10-30% | 500 ppm | 1000 ppm | 750 ppm ^c |
| 108-88-3 | toluene | 3-7% | 20 ppm | 200 ppm | 150 ppm ^d |
| 64-17-5 | ethanol | 1-5% | 1000 ppm | 1000 ppm | N/E |
| 110-19-0 | isobutyl acetate | 1-5% | N/E | N/E | N/E |
| 110-43-0 | 2-heptanone | 1-5% | N/E | N/E | N/E |
| 108-65-6 | 1-methoxy-2-propyl acetate | 1-5% | N/E | N/E | N/E |
| 141-78-6 | ethyl acetate | 0.1-1% | 400 ppm | N/E | N/E |
| proprietary ^e | 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) MG Chemicals established limit corresponding to prevalent international value; no established limit by ACGIH.

c) ACGIH STEL

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

e) 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

| <i>Exposure Condition</i> | <i>GHS Code: Precautionary Statement</i> |
|--|---|
| IF INHALED | P304 |
| Response | P340: Remove person to fresh air and keep comfortable for breathing. |
| If feeling unwell | P312: Call a POISON CENTRE or physician. P313: Get medical advice. |
| If exposed or concerned | P313: Get medical advice. |
| IF IN EYES | P305 |
| Response | P362 + P364: 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 ON SKIN (or hair) | P303 |
| Response | P362 + P364: Take off contaminated clothing and wash it before reuse. P353: Rinse skin with water/shower. |
| If skin irritation or rash persists | P332: Get medical attention. |
| If exposed or concerned | P313: Get medical advice. |
| IF SWALLOWED | P301 (<i>Not a likely route of exposure under normal use</i>) |
| Response | P312: Call a POISON CENTRE or physician. P330: Rinse mouth. |
| If skin irritation or rash persists | P332: Get medical attention. |

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

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

| | | | | | |
|---------------------------------|-----------------|---------------------|---------------------|--------------------|----|
| Autoignition Temperature | Not established | Flash Point* | -18 °C [-0.4 °F] | LFL [LEL]** | 1% |
| | | | | UFL [UEL] | 8% |

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. Pressurized container may explode if heated in 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.*

* *Flashpoint based on literature closed cup value for acetone*

***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.

Containment Remove all sources of ignition.

Cleaning Collect the liquid into a sealable, chemically resistant container. Sprinkle inert absorbent material 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.

RECOMMENDATION: A metal container is suggested.

Disposal Dispose of spill waste according to Section 13.

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Section 7: Handling and Storage

Prevention P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Handling P280 + P264: Wear protective gloves/clothing/eye protection. Wash thoroughly after handling.

Storage P411+P403 + P235: Store at temperatures not exceeding 40 °C [104 °F] Protect from sunlight. Store in a well-ventilated area.

RECOMMENDATION : Store in dry area. Do NOT store at temperatures below or equal to 26.5 °C [15.7 °F] since this may crush and damage the container.

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 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.

RECOMMENDATION: Use safety glasses with lateral protection.

Skin Protection Wear appropriate protective clothing to prevent skin contact.

RECOMMENDATION: Use latex rubber or other chemically resistant gloves.

Respiratory Protection If exposed to mist, wear respirator such as a half-mask respirator.

RECOMMENDATION: Consult your local safety supply store to ensure your respirator has a NIOSH (U.S.) approved 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 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 | Ether like | Odor Threshold^{a)} | 2 ppm |
| Appearance | Black | Specific Gravity | 0.89 | Freezing Point | Not established |
| Boiling Point | 56 °C ^{a)} | Vapor Pressure @ 20 °C | Not established | Evaporation Rate | fast |
| Autoignition Temperature^{a)} | 465 °C [869 °F] | Flash Point^{a)} | -18 °C [-0.4 °F] | Vapor Density^{a)} | >2 (Air =1) |
| Lower Flammability Limit^{b)} | 1% | Upper Flammability Limit^{b)} | 10% | Decomposition Temp. | Not available |
| Viscosity^{c)} | ≥34 mm ² /s | Partition Coefficient | Not established | Solubility in Water | Partially soluble |
| pH | 7 | | | | |

a) Values for flash point and other threshold based on acetone

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

c) Kinematic viscosity at 40 °C for separation layer

Section 10: Stability and Reactivity

| | |
|----------------------------|---|
| Stabilities | Chemically stable at normal temperatures and pressures |
| Conditions to Avoid | Temperatures over 40 °C, 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 |

TOTAL GROUND CARBON CONDUCTIVE COATING 838-AEROSOL

Section 11: Toxicological Information

| | |
|---|---|
| Skin corrosion/irritation | Prolonged or repeated skin contact may cause dermatitis |
| Serious eye damage/irritation | Acetone, toluene, and ethanol are known serious to moderate eye irritant |
| Respiratory and skin sensitization (allergic reactions) | Not known |
| 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 |
| Teratogenicity (risk of fetus malformation) | Harmful to unborn fetus |
| 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 $>20.5 \text{ mm}^2/\text{s}$; therefore, it is not classified as aspiration hazard. |

TOTAL GROUND CARBON CONDUCTIVE COATING 838-AEROSOL
Lethal Exposure Concentrations

| Chemical Name | LD50 oral | LD50 dermal | LC50 inhalation | TCLo inhalation |
|----------------------------|--|---------------------------|---|---|
| 1,1,1,2-tetrafluoroethane | N/E | N/E | 1,500 g/m ³ 4 h Rat ----- 1,700 g/m ³ 2 h Mouse | N/E |
| carbon black | >15 g/kg Rat | >3 g/kg Rabbit | N/E | 1.6 mg/m ³ 7 h Rat |
| 2-propanone | 5,800 mg/kg Rat ----- 5,340 mg/kg Rabbit | >9400 µL/kg Guinea pig | 44 g/m ³ 4 h Rat ----- 50.1 g/m ³ 8 h Rat | 10 mg/m ³ 6 h Human ----- 30 g/m ³ 2 h Rat |
| toluene | 636 mg/kg Rat | 12124 mg/kg Rabbit | 49 g/m ³ 4h Rat | 200 ppm Human |
| ethanol | 7,060 mg/kg Rat ----- 3,450 mg/kg Mouse | N/E | 20,000 ppm 10 h Rat ----- 39 g/m ³ 4 h Mouse | 2,500 mg/m ³ 20 min Human ----- 50,000 mg/m ³ 2 h Mouse |
| isobutyl acetate | 13,400 mg/kg Rat | >17400 mg/kg Rabbit | N/E | 8,000 ppm 4h Rat LCLo ^b |
| methyl amyl ketone | 1,670 mg/kg Rat ----- 730 mg/kg Mouse | 12,600 µL/kg Rabbit | N/E | 7,000 mg/m ³ 4 h Guinea pig |
| 1-methoxy-2-propyl acetate | 8,532 mg/kg Rat ----- >5,000 mg/kg Mouse | >5g/kg Rabbit | N/E | 1,105 mg/m ³ 4 h Rat |
| ethyl acetate | 5,620 mg/kg Rat ----- 4,100 mg/kg Mouse | >20,000 µL/kg Rabbit | 45 g/m ³ 2 h Mouse | 400 ppm Human |

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 dose.

b) Lowest published lethal concentration

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Section 12: Ecological Information

VOC (EPA, WHIMS, and Europe) = 15% [135 g/L]

*VOC = *Volatile Organic Content*

Section 13: Disposal Information

GHS Code: Precaution Statement

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

Section 14: Transport Information

Ground

Consumer Commodity; ORM-D

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

Air

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

UN number: UN1950; **Shipping Name:** AEROSOL, flammable; **Class:** 2.1, Flash Point = -18 °C

Sea

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

UN number: UN1950; **Shipping Name:** AEROSOL, flammable; **Class:** 2.1, Flash Point = -18 °C

TOTAL GROUND CARBON CONDUCTIVE COATING 838-AEROSOL

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.

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 6% (wt) toluene (CAS# 108-88-3), which is listed as hazardous air pollutants.

SARA (Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR 372.4)

None of the chemicals in this product have a reportable quantity.

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

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

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

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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.

TOTAL GROUND CARBON CONDUCTIVE COATING 838-AEROSOL

Section 16: Other Information

MSDS Prepared by Michel Hachey
Date of Preparation 27 September 2011
Date of Revision 03 March 2012
Reference All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

Abbreviations

GHS: Globally Harmonized System of Classification of Labeling of Chemicals
LC50 Lethal Concentration 50%
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

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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