

GRAPHITE CONDUCTIVE PEN

839-PEN

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Name:** Graphite Conductive Pen**SDS Code:** 839-Pen**Related Part #** 839-P

### Recommended Use and Restriction on Use

**Use:** Electrically conductive coating**Uses Advised Against:** Not available

### 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 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 serviceCANADA—Call CANUTEC collect at **+1-613-996-6666** or **\*666** on cellular phones

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**
**Section 2: Hazard(s) Identification**
**Classification of Hazardous Chemical**
**GHS Categories**

Criteria	Category	Signal Word	Pictograms
Aspiration Hazard	1	Danger	Health
Specific Target Organ Toxicity      Repeated Exposure	2	Warning	Health
Reproductive Toxicity	2	Warning	Health
Flammable Liquid	2	Warning	Flame
Eye Irritation	2	Warning	Exclamation
Skin Irritation	2	Warning	Exclamation
Specific Target Organ Toxicity      Single Exposure	3	Warning	Exclamation

*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**

<b>Signal Word</b>	<b>DANGER</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H304: May be fatal if swallowed and enters airways H373: May cause damage to organs (central nervous system) through prolonged or repeated exposure H361: Suspected of damaging fertility or the unborn child
	H225: Highly flammable liquid and vapor
	H319: Causes serious eye irritation H315: Causes skin irritation H336: May cause drowsiness or dizziness

*Section continued on the next page*

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**
*Continued...*

<b>Prevention</b>	<b>Precautionary Statements</b>
P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, flames, and other ignition sources. No Smoking.
P260, P271	Do not breathe vapors. Use only outdoors or in a well-ventilated area.
P233	Keep container tightly closed.
P270	Do not eat, drink, or smoke when using this products.
P280	Wear protective gloves and eye protection.
P264	Wash hands thoroughly after handling.
<b>Response</b>	<b>Precautionary Statements</b>
P308 + P313	IF exposed or concerned: Get medical advice or attention.
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P301 + P310, P331	IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.
P304 + P340, P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell.
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.
P302 + P352	IF ON SKIN: Wash with plenty water.
P332 + P313	If skin irritation occurs: Get medical advice or attention.
P314	Get medical advice or attention if you feel unwell.
P362 + P364	Take off contaminated clothing and with it before reuse.
<b>Storage</b>	<b>Precautionary Statements</b>
P403 + P235	Store in well-ventilated place. Keep cool.
P405	Store locked up.

*Section continued on the next page*

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**
*Continued ...*

<b>Disposal</b>	<b>Precautionary Statements</b>
P501	Dispose of contents in accordance to local, regional, national, and international regulations.

**Hazards Not Otherwise Classified**

<b>Other Criteria</b>	<b>Hazard Statements/Precautionary Statement</b>	<b>Signal Word</b>	<b>Pictograms</b>
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

**Section 3: Composition/Information on Ingredients**

<b>CAS #</b>	<b>Chemical Name</b>	<b>%(weight)</b>
108-88-3	toluene	18%
123-86-4	n-butyl acetate	16%
67-64-1	acetone	13%
7782-42-5	graphite	7-11%
110-19-0	isobutyl acetate	6%
110-43-0	2-heptanone	6%
64-17-5	ethanol	5%
141-78-6	ethyl acetate	3%
108-65-6	1-methoxy-2-propanol acetate	2%
1333-86-4	carbon black	1%

**Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
<b>IF SWALLOWED</b>	P301 + P310, P331
<b>Immediate Symptoms</b>	<i>nausea, sore throat, diarrhea, drowsiness, dizziness</i>
<b>Response</b>	Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.

*Section continued on the next page*

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**
*Continued...*

<b>IF INHALED</b>	P304 + P340, P312, P308 + P313
<b>Immediate Symptoms</b>	<i>drowsiness, dizziness, cough, headaches, nausea, unconsciousness</i>
<b>Response</b>	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell. IF exposed or concerned: Get medical advice or attention.
<b>IF IN EYES</b>	P305 + P351 + P338, P337 + P313
<b>Immediate Symptoms</b>	<i>serious irritation, redness</i>
<b>Response</b>	Rinse cautiously with water for 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
<b>IF ON SKIN</b>	P302 + P352, P332 + P313, P314, P362 + P364
<b>Immediate Symptoms</b>	<i>redness, irritation, dry skin</i>
<b>Response</b>	Wash with plenty of water. If skin irritation occurs: Get medical advice or attention. Get medical advice or attention if you feel unwell. Take off contaminated clothing and with it before reuse.

**Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
<b>Specific Hazards</b>	The liquid may float on water and ignite. 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.
<b>Combustion Products</b>	Produces carbon oxides (CO,CO <sub>2</sub> ).
<b>Fire-Fighter</b>	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

**GRAPHITE CONDUCTIVE PEN****839-PEN****Section 6: Accidental Release Measures**

<b>Personal Protection</b>	See personal protection recommendations in Section 8.
<b>Precautions for Response</b>	Do not breathe the mist, spray, or vapors. Remove or keep away all sources of extreme heat or open flames.
<b>Environmental Precautions</b>	Avoid releasing to the environment.
<b>Containment Methods</b>	Not applicable
<b>Cleaning Methods</b>	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.
<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. 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. Do not breathe vapors. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Do not eat, drink, or smoke when using this product.
<b>Handling</b>	Wear protective gloves and eye protection. Take off contaminated clothing and wash it before reuse. Wash hands thoroughly after handling.
<b>Storage</b>	Store in well-ventilated place. Keep cool. Store locked up.

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**
**Section 8: Exposure Controls/Personal Protection**
**Substances with Occupational Exposure Limit Values**

<b>Chemical Name</b>	<b>Country</b>	<b>Long Term Exposure Limits (PEL)</b>	<b>Short Term Exposure Limits (STEL)</b>
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
n-butyl acetate	ACGIH	150 ppm	Not established
	U.S.A. OSHA PEL	150 ppm	Not established
	Canada AB	150 ppm	200 ppm
	Canada BC	20 ppm	200 ppm
	Canada ON	150 ppm	Not established
	Canada QC	150 ppm	200 ppm
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
graphite (natural)	ACGIH	2 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	3 mg/m <sup>3</sup>	Not established
	Canada AB	2 mg/m <sup>3</sup>	Not established
	Canada BC	2 mg/m <sup>3</sup>	Not established
	Canada ON	2 mg/m <sup>3</sup>	Not established
	Canada QC	2.5 mg/m <sup>3</sup>	Not established
isobutyl acetate	ACGIH	150 ppm	Not established
	U.S.A. OSHA PEL	150 ppm	Not established
	Canada AB	150 ppm	Not established
	Canada BC	150 ppm	Not established
	Canada ON	150 ppm	Not established
	Canada QC	150 ppm	Not established

*Section continued on the next page*

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**

Continued...

<b>Chemical Name</b>	<b>Country</b>	<b>Long Term Exposure Limits (PEL)</b>	<b>Short Term Exposure Limits (STEL)</b>
2-heptanone	ACGIH	50 ppm	Not established
	U.S.A. OSHA PEL	100 ppm	Not established
	Canada AB	50 ppm	Not established
	Canada BC	50 ppm	Not established
	Canada ON	25 ppm	Not established
	Canada QC	50 ppm	Not established
ethanol	ACGIH	Not established	1 000 ppm
	U.S.A. OSHA PEL	1 000 ppm	Not established
	Canada AB	1 000 ppm	Not established
	Canada BC	Not established	1 000 ppm
	Canada ON	Not established	1 000 ppm
	Canada QC	1 000 ppm	Not established
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
1-methoxy-2-propanol acetate	ACGIH	Not established	Not established
	U.S.A. OSHA PEL	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
carbon black	ACGIH	3.5 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	3.5 mg/m <sup>3</sup>	Not established
	Canada AB	3.5 mg/m <sup>3</sup>	Not established
	Canada BC	3 mg/m <sup>3</sup>	Not established
	Canada ON	3.5 mg/m <sup>3</sup>	Not established
	Canada QC	3.5 mg/m <sup>3</sup>	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 database<sup>2</sup> and from suppliers' SDS were also consulted. Short term exposure limits (STEL) are usually for 15 min and long term permissible exposure limits (PEL) for 8 h.

*Section continued on the next page*



**GRAPHITE CONDUCTIVE PEN****839-PEN****Engineering Controls****Ventilation**

Keep airborne concentrations below the occupational exposure limits (OEL).

Because the carbon black is bound to the liquid mixture, it does not present an airborne hazard under normal use. Ensure adequate ventilation if the product is mechanically misted or aerosolized.

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

Wear appropriate protective eyeglasses or chemical safety goggles.

**Recommendation:** Ensure that glasses have side shields for lateral protection.

**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 or vapors, 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.

**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.

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**
**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Liquid	<b>Lower Flammability Limit</b> <sup>a)</sup>	1%
<b>Appearance</b>	Black	<b>Upper Flammability Limit</b> <sup>a)</sup>	13%
<b>Odor</b>	Ethereal	<b>Vapor Pressure @20 °C</b> <sup>b)</sup>	~89 hPa [~67 mmHg]
<b>Odor Threshold</b>	Not available	<b>Vapor Density</b>	>2 (Air =1)
<b>pH</b>	Not available	<b>Relative Density @25 °C</b>	0.98
<b>Freezing/Melting Point</b>	Not available	<b>Solubility in Water</b>	Partially soluble
<b>Initial Boiling Point</b> <sup>a)</sup>	≥56 °C [≥132 °F]	<b>Partition Coefficient n-octanol/water</b>	Not available
<b>Flash Point</b> <sup>a)</sup>	-18 °C [-0.4 °F]	<b>Auto-ignition Temperature</b> <sup>c)</sup>	≥315 °C [≥599 °F]
<b>Evaporation Rate</b>	fast	<b>Decomposition Temperature</b>	Not available
<b>Flammability</b>	Flammable	<b>Viscosity @40 °C</b>	<20.5 mm <sup>2</sup> /s

a) Values based on acetone component.

b) Calculated based on components.

c) Values based on 1-methoxy-2-propanol acetate, which is the component with the lowest auto-ignition value.

**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>	Ignition sources, open flames, and incompatible substances
<b>Incompatibilities</b>	Oxidizing 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

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**
**Section 11: Toxicological Information**
**Summary of Effects and Symptoms by Routes of Exposure**

<b>Eyes</b>	May cause redness and severe irritation.
<b>Skin</b>	May cause skin redness, irritation, and dry skin.
<b>Inhalation</b>	May cause drowsiness, dizziness, cough, headaches, nausea, and unconsciousness.
<b>Ingestion</b>	May cause nausea, sore throat, and diarrhea (see inhalation symptoms).
<b>Chronic</b>	<p>Prolonged or repeated exposure may cause skin dryness, cracking, as well as defatting the skin.</p> <p>Chronic inhalation exposure may effect the central nervous system and lead to hearing loss with co-exposure to loud noises.</p> <p>Ingestion or inhalation of paint material, mist, or vapor during pregnancy may increase the chances fetal death and developmental defects.</p>

**Acute Toxicity (Lethal Exposure Concentrations)**

<b>Chemical Name</b>	<b>LD50 oral</b>	<b>LD50 dermal</b>	<b>LC50 inhalation</b>
toluene	636 mg/kg Rat	12 124 mg/kg Rabbit	49 g/m <sup>3</sup> 4h Rat
n-butyl acetate	10 768 mg/kg Rat	17 600 mg/kg Rabbit	390 ppm 4h Rat
acetone	5 800 mg/kg Rat	>9 400 µL/kg Guinea pig	44 g/m <sup>3</sup> 4 h Rat
isobutyl acetate	13 400 mg/kg Rat	>17 400 mg/kg Rabbit	>13.24 mg/L 6 h Rat
2-heptanone	1 670 mg/kg Rat	12 600 µL/kg Rabbit	Not available
ethanol	7 060 mg/kg Rat	Not available	20 000 ppm 10 h Rat

*Section continued on the next page*

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**
*Continued...*

<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 µL/kg Rabbit	45 g/m <sup>3</sup> 2 h Mouse
1-methoxy-2-propanol acetate	8 532 mg/kg Rat	>5 g/kg Rabbit	Not available
carbon black	>15 g/kg Rat	>3 g/kg Rabbit <sup>a)</sup>	Not established

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

a) Lethal dose

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

Toluene causes skin irritation based on Draize tests on animals.

**Serious eye damage/irritation**

Acetone, ethanol, 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)

The carbon black is possibly carcinogenic by airborne routes of exposures under WHMIS.

**Carbon Black [1333-86-4]**

IARC Group 2B: Possibly carcinogenic to humans

ACGIH A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans

CA Prop 65: Listed as a carcinogen (airborne, as unbound particles of respirable size)

NTP: Not listed

**Ethanol [64-17-5]**

IARC Group 1: Carcinogenic to human when consumed as beverage.

ACGIH A3: Confirmed animal carcinogen with unknown relevance to humans

CA Prop 65: Listed as a carcinogen when consumed as a beverage

NTP: Not listed

*Section continued on the next page*

**GRAPHITE CONDUCTIVE PEN****839-PEN**

<b>Mutagenicity</b> (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
<b>Reproductive Toxicity</b> (risk to sex functions)	At high doses, spermatogenesis was observed in male rat by inhalation of toluene.
<b>Teratogenicity</b> (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.
<b>STOT-single exposure</b>	Toluene, n-butyl acetate, acetone, isobutyl acetate, 2-heptanone, ethyl acetate and 1-methoxy-2-propanol acetate can affect the central nervous system by inhalation causing drowsiness or dizziness.
<b>STOT-repeated exposure</b>	Contains 18% toluene, which is a Cat 2 STOT repeated exposure hazard for the central nervous system and cochlear systems. Toluene is an ototoxic chemical according to rat studies: inhalation exposure in the presence of noise may lead to cochlear impairment.
<b>Aspiration hazard</b>	The liquid is content is classified as Cat 1 aspiration hazards. It is composed of >10% Cat 1 substances, and the kinematic viscosity is <20.5 mm <sup>2</sup> /s at 40 °C.

**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.

Toluene is an acute category 2 aquatic 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).

The n-butyl acetate ingredient is an acute category 3 environmental toxicant (biodegradable, with minimal LC50 of 18 mg/L for fathead minnow).

Acetone is not classifiable as an environmental toxicant (with minimal LC50 96 h of 5 540 mg/L for *Oncorhynchus mykiss* (rainbow trout); EC50 48 h 13 500 mg/L *Daphnia magna* (water flea)).

The 1-methoxy-2-propanol acetate component is an acute category 3 environmental toxicant (with minimal LC50 96 h of ≥100 mg/L *Salmo gairdneri*).

Based on available data, carbon black is not classified as environmental hazards according to GHS criteria.

*Section continued on the next page*

**GRAPHITE CONDUCTIVE PEN****839-PEN**

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

- Isobutyl acetate as a minimal LC50 48 h of 101 mg/L for *Leuciscus idus melanotus* and 250 mg/L for *Daphnia magna* (water flea).
- Heptan-2-one has a minimal LC50 96 h of 126 mg/L for *Pimephales promelas* (fathead minnow).
- Ethanol is biodegradable and has a minimal LC50 of >1 000 mg/L for fish, invertebrates, and algae.
- Ethyl acetate is has a minimal LC50 96 h of 220 mg/L for *Pimephales promelas* (fathead minnow); a LC50 48 h of 560 mg/L and EC50 24 h of 2 300 mg/L *Daphnia magna* (water flea); and an EC50 72 h 1 800 mg/L for *Selenastrum*.

**Acute Ecotoxicity**

Available data doesn't give rise to classification as an acute ecotoxicant.

**Chronic Ecotoxicity**

Available data doesn't give rise to classification as a chronic ecotoxicant.

**Biodegradability**

Expected to be biodegradable. The volatile solvent constituents will oxidize rapidly in air by photochemical reaction.

**Other Effects**

Regulated Volatile Organic Compounds (VOC) content according to the US (EPA) and Canadian (CEPA) authorities.

VOC = 52% [516 g/L]

**Section 13: Disposal Information**

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

**GRAPHITE CONDUCTIVE PEN**

**839-PEN**

**Section 14: Transport Information**

**Ground**

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

Sizes 5 L and under

**Limited Quantity**



**Air**

**Refer to ICAO-IATA Dangerous Goods Regulations.**

Sizes 30 mL and under

**Excepted Quantity**  
Document as class **E2**



FOR REFERENCE ONLY

**UN number:** UN1263  
**Shipping Name:** PAINT  
**Class:** 3  
**Packing Group:** II  
**Marine Pollutant:** No  
Flash Point = -18 °C [-0.4 °F]

**Sea**

**Refer to IMDG regulations.**

Sizes 30 mL and under

**Excepted Quantity**  
Document as class **E2**



FOR REFERENCE ONLY

**UN number:** UN1263  
**Shipping Name:** PAINT  
**Class:** 3  
**Packing Group:** II  
**Marine Pollutant:** No  
Flash Point = -18 °C [-0.4 °F]

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

**GRAPHITE CONDUCTIVE PEN**
**839-PEN**
**Section 15: Regulatory Information**
**Canada**
**Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

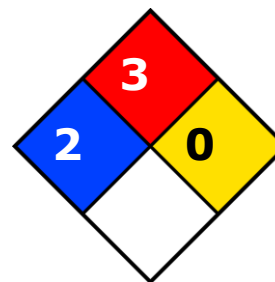
All hazardous ingredients are listed on the DSL/NDSL.

**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>	* 2
<b>FLAMMABILITY:</b>	3
<b>PHYSICAL HAZARD:</b>	0
<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)

**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 hazardous air pollutants.

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

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

This product contains acetone (CAS# 67-64-1), isobutyl acetate (CAS# 110-19-0) and ethyl acetate (CAS# 141-78-6), which are subject to the CERCLA reporting requirements at the 5 000 lb (2 268 kg) threshold.

*Section continued on the next page*



**GRAPHITE CONDUCTIVE PEN****839-PEN****TSCA** (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

**California Proposition 65** (Chemicals known to cause cancer or reproductive toxicity, June 06, 2014 revision, USA).

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

This product contains carbon black, but it is bound and exposures during normal conditions of uses are below the Safe Harbor Threshold.

This product contains ethanol, which is listed as reproductively toxic. It is also listed as a carcinogen when in an alcoholic beverage.

**Europe****RoHS** (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, 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 Review</b>	13 March 2020
<b>Supersedes</b>	08 November 2016
<b>Reason for Changes:</b>	Change to emergency phone numbers.

**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*

**GRAPHITE CONDUCTIVE PEN****839-PEN****Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
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](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 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.