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Description

The 847 *Carbon Conductive Assembly Paste* is an electrically conductive, low-cost, non-silicone product for applications needing stability over wide thermal ranges. The synthetic oil that is used has a low evaporation rate that allows the paste withstand high temperatures without drying. Further, the paste resists separation and bleeding very well, so it is unlikely to contaminate onto nearby areas.

Applications & Usages

The 847 paste improves electrical conductivity between electrical contacts and inhibits corrosion.

Features and Benefits

- **High conductivity** of 0.04 S/cm **and low volume resistivity** of 23 Ω ·cm
- **Doesn't separate or bleed like silicone-based oil**
- **Withstands high temperature without drying, bleeding, flowing, or chemical degradation**
- **Lubricates even at low temperature**
- **Non-Corrosive**
- **Zero VOC**

Usage Parameters

<i>Properties</i>	<i>Value</i>
Shelf Life ^{a)}	5 y

a) Reported shelf life assumes room temperature storage and unopened container.

Temperature Ranges

<i>Properties</i>	<i>Value</i>
Constant Service Temperature	-50 to 250 °C [-58 to 482 °F]
Maximum Intermittent Temperature	200 °C [392 °F]
Storage Temperature Limits ^{b)}	-40 to 40 °C [-40 to 104 °F]

b) Room temperature is acceptable. Cold storage avoids material separation and settling. If storing at 25 °C, mix thoroughly to disperse filler before use.

Principal Components

Name

High Temperature, Synthetic Oil (Non-silicone based)
Carbon Black

CAS Number

proprietary
1333-86-4

Properties

<i>Electrical Properties</i>	<i>Method</i>	<i>Value</i>
Volume Resistivity (ρ_v)	Mil-Std-883J Method 5011.6	23 Ω -cm
Volume Conductivity (σ_v)	"	0.04 S/cm
Surface Resistivity (ρ_s)	ASTM D257, ASTM D4496	271 Ω /sq
Surface Conductivity (σ_s)	"	0.0037 S/sq
<i>Grease Properties</i>	<i>Method</i>	<i>Value</i>
Evaporation Loss, 22 h @165 °C [329 °F]	ASTM D 2595	0.3%
Oil Separation, 30 h @165 °C [329 °F]	ASTM D 6184	1.8%
Dropping Point	ASTM D 2265	>304 °C [>579 °F]
Water Washout @38 °C [100 °F]	ASTM D 1264	0.2%
Worked Penetration, 60 strokes, 1/2 scale	ASTM D 1403	174
Emcor Rust Test, distilled water	IP 220	#3 ^{a)}

a) Corroded areas covering >1% but <5% of the running track surface.

<i>Physical Properties</i>	<i>Method</i>	<i>Value</i>
Color	Visual ASTM D 1475	Black
Odor		Odorless
Density @25 °C [77 °F]		1.07 g/mL
Viscosity		Thixotropic paste
Lubricant		Yes
Bleed Resistant		Yes
Run Resistant		Yes
Corrosion Resistant		Yes
VOC (Volatile Organic Compound)		0%
<i>Synthetic Oil Properties</i>	<i>Method</i>	<i>Value</i>
Oil Viscosity Index ^{b)}	ASTM D 2270	>110 °C [^{b)} >230 °F]
Pour Point		≥-34 °C [^{b)} ≥-29 °F]
Fire Point ^{c)}	ASTM D 92	321 °C [610 °F]
Flash Point ^{d)}	ASTM D 92	>290 °C [^{d)} >554 °F]

Note: Values based on synthetic oil component only

b) High oil viscosity index of more than a 100 indicate small oil viscosity change with temperature.

c) Temperature at which oil will continue to burn for at least 5 seconds after ignition with an open flame.

d) Cleveland open cup method.

Storage

Store between -40 and 40 °C [40 and 104 °F] in dry area.

Health, Safety, and Environmental Awareness

Please see the 847 **Safety Data Sheet** (SDS) for greater details on transportation, storage, handling and other security guidelines.

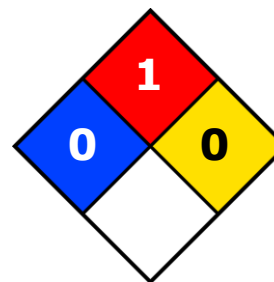
Environmental Impact: The VOC (Volatile Organic Compound) content is 0% by WHMIS and European standards.

Health and Safety: Wear safety glasses and disposable gloves to avoid exposures.

HMIS® RATING

HEALTH:	0
FLAMMABILITY:	1
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)

Application Instructions

The conductive paste performance depends on mainly on surface preparation. Improperly prepared contact surfaces can degrade the pastes' stability, conductivity, and lubrication characteristics. While the thickness and coverage are also important, the application method itself can easily be adjusted according to performance and application needs.

Prerequisites

- Wear gloves and protective clothing (see 847 SDS). This product is extremely messy.
- Clean and dry the surface of the substrate to remove other oils, greases, dust, water, solvents, or any other contaminants.

Recommendation: Use MG 824 Isopropyl Alcohol

Equipment

- Lint free cloth (for cleaning contact and for wiping excess residue)
- Spatula or stick application tools (sized appropriately for your application)
- Isopropyl alcohol or other residue-free organic solvents

NOTE: Avoid oil-based cleaners (like WD-40) that are designed to leave a film on the metal surface. Contaminant oil or grease films may act like barriers reducing the electrical contact between the conductive paste and the metallic substrate.

To apply the paste

1. Wipe the contact with a lint-free cloth.
2. Clean the contacts with isopropyl alcohol or other non-oil based cleaner.
3. Once dry, apply the paste with the application tool to the contact, ensuring adequate coverage and desired thickness.



ISO 9001 Registered Quality System.
Burlington, Ontario, Canada QMI File # 004008

Carbon Conductive Assembly Paste 847 Technical Data Sheet

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ATTENTION!

DO NOT apply or smooth grease with bare finger. Carbon black is hard to clean and may transfer to other surfaces by touch. Further, you may introduce contaminants that degrade the overall performance of the grease.

Packaging and Supporting Products

<i>Cat. No.</i>	<i>Packaging</i>	<i>Net Volume</i>		<i>Net Weight</i>	
847-25ML	Jar	25 mL	0.84 fl oz	26.8 g	0.94 oz
847-1P	Jar	466 mL	15.7 fl oz	500 g	17.6 oz
847-1G	Pail	3.78 L	1.0 gal	4.05 kg	8.94 lb

Contact MG Chemicals if custom packaging or sizes are required

Supporting Products

- *Isopropyl Alcohol*: Cat. No.824

Technical Support

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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Warranty

M.G. Chemicals Ltd. warrants this product for 12 months from the date of purchase by the end user. *M.G. Chemicals Ltd.* makes no claims as to shelf life of this product for the warranty. The liability of *M.G. Chemicals Ltd.* whether based on its warranty, contracts, or otherwise shall in no case include incidental or consequential damage.

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