Premium Carbon Conductive Grease

RoHS Compliant

Description

The MC002972 Premium Carbon Conductive Grease is an electrically conductive grease with a synthetic oil base. This product is similar to the silicone conductive grease, but unlike its silicone counterpart the MC002972 synthetic-oil grease is essentially non-bleeding. Further, it includes corrosion inhibitors that provide superior corrosion resistance.

Applications and Usages

The MC002972 grease lubricates and improves electrical connections between sliding surfaces and parts, ensuring good grounding connection. It is also used to improve electrical continuity between irregular and pitted surfaces, as well as providing an economical way to protect switches against corrosion.

Benefits and Features

- Improves electrical connections between irregular surfaces
- Excellent corrosion resistance—Passed ASTM B 117 >550 hours
- Volume resistivity of 160Ω*cm
- Extends the life of contacts
- Silicone free
- Safe on plastics

Usage Parameters

Properties	Value
Shelf Life [a)]	5 Year

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

Temperature Ranges

Properties	Value
Constant Service Temperature	-68 to 165°C
	(-90 to 329°F)
Storage Temperature of Unmixed Parts [b)]	-10 to 40°C
	(14 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

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

Properties

Electrical Properties	Method	Value
Volume Resistivity (ρv)	Mil-Std-883J Method 5011.6	160Ω*cm
Volume Conductivity (σv)	Mil-Std-883J Method 5011.6	0.006 S/cm
Thermal Properties	**Method**	**Value**
Thermal Conductivity @ 25°C (77°F)	ASTM E 1461	0.29 W/(m*K)
Grease Properties	**Method**	**Value**
Evaporation Loss, 22 h @165°C (329°F)	ASTM D 2595	2.0%
Oil Separation, 30 h @165°C (329°F)	ASTM D 6184	5.0%
Oil Separation	Boeing Test [a)]	Slight oil separation

Grease Properties	Method	Value
Dropping Point	ASTM D 2265	>300°C (>572°F)
Water Washout @38°C (100°F) [b]	ASTM D 1264	0.9%
Worked Penetration, unworked	ASTM D 217	315
Worked Penetration, 60 strokes	ASTM D 217	315
Worked Penetration, 10 000 strokes	ASTM D 217	319
Emcor Rust Test, distilled water	IP 220	#0, no corrosion
Salt Spray Corrosion Resistance [c]	ASTM B 117	Passed >550 hours
Physical Properties	**Method**	**Value**
Colour		Black
Odour		Odourless
Density @ 25°C (77°F)	ASTM D 1475	1.01 g/mL
Viscosity @ 25°C (77°F)		Thixotropic paste
Lubricant		Yes
Bleed Resistant		Yes
Corrosion Resistant		Yes
VOC (Volatile Organic Compound)	Calculated	4%

[a] Thermal cycling of ten cycles from -40 to 121°C.

[b] Bearing dried at 77°C (171°F).

[c] Aluminium 2024 coupons with 254µm (10 mil) film thickness and >550 hours exposure to 5% salt spray

Physical Properties	Method	Value
Oil Viscosity Index [c]	ASTM D 2270	>110°C (>230°F)
Fire Point [d]	ASTM D 92	321°C (610°F)
Flash Point [e]	ASTM D 92	>290°C (>554°F)

Note: Values based on synthetic oil component only

[c] High oil viscosity index of more than a 100 indicate small oil viscosity change with temperature.

[d] Temperature at which oil will continue to burn for at least 5 seconds after ignition with an open flame.

[e] Cleveland open cup method.

Storage

Store between -40 and 40°C (40 and 104°F) in dry area.

Application Instructions

The conductive grease performance depends on mainly on surface preparation. Improperly prepared contact surfaces can degrade the paste's 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. This product is messy.
- Clean and dry the surface of the substrate to remove other oils and greases, as well as dust, water, solvents, or any other contaminants.
- Recommendation: Use 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 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 grease

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.

ATTENTION! DO NOT apply or smooth grease with bare finger. Carbon black grease 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

Packaging	Net Volume		Net Weight	
Tube	85 mL	2.87 fl oz	85.4 g	3.07 oz

Part Number Table

Description	Part Number
Premium Carbon Conductive Grease, Black, 85mL, Tube	MC002972