

Description

The 8616 *Super Thermal Grease* is a low thermal resistance grease with a synthetic oil base that is electrically insulating and non-corrosive. It is used to improve the thermal interface contact conductivity between heat sinks, LEDs, motors, and heat-generating electronic components such as CPUs, GPU chipsets, power components, and so on. It improves the thermal interface between irregular and pitted surfaces.

Benefits & Features

- **High thermal conductivity**
- **Silicone Free and non-bleeding**
- **Excellent Corrosion resistance**—Passed ASTM B 117 1000 hours
- **Lowers the contact resistance between irregular surfaces.**
- **Extends the life of electronic components**
- **High dielectric strength**
- **Safe on plastics**

Application and Storage Conditions

<i>Properties</i>	<i>Value</i>
Shelf Life	5 year
Storage Temperature Limits	-10 to +40 °C [14 to +104°F]

Temperature Service Ranges

<i>Properties</i>	<i>Value</i>
Service Temperature	-68 to +165 °C [-90 to +329 °F]
Maximum coverage for 25 µm [1.0 mil] thickness ^{a)}	<1,180 cm ² [<0.64 ft ²]

a) Theoretical coverage per 3 mL [0.1 fl oz] assuming 100% transfer efficiency.

Properties

<i>Conductivity Properties</i>	<i>Method</i>	<i>Value</i>
Thermal Conductivity @25 °C	ASTM E 1461	1.8 W/(m·K) 12 Btu·in/(h·ft ² ·°F)
Volume resistivity(ρ_v)		test pending
Dielectric strength		test pending

Super Thermal Grease II 8616 Technical Data Sheet

8616

<i>Physical Properties</i>	<i>Method</i>	<i>Value</i>
Color		White, silvery cream-like
Filler		Aluminum oxide, zinc oxide, and boron nitride
Odor		Odorless
Density @25 °C		2.74 g/mL
Viscosity @25 °C [77 °F] ^{a)}		2 900 000 cP
Drop Point	ASTM D 2265	>300°C [>572 °F]
Cone Penetration (worked × 60 strokes)	ASTM D 217	287
Oil Separation (Boeing test) ^{b)}		None
Salt Spray Corrosion Resistance ^{c)}	ASTM B 117	Pass
Corrosivity		Non-corrosive
%Evaporation loss @ 25 °C, 44 h		0% (wt)
%Evaporation loss @ 204 °C, 44 h		5% (wt)
VOC (Volatile Organic Compound) ^{d)}	Estimated	5% to 18%
Lubricant		No
Bleed resistant		Yes

a) Brookfield viscometer @ 1 rpm with spindle # 07

b) After ten cycles from -40 °C to 121 °C.

c) Aluminum 2024 coupons with 254 µm [10 mil] film thickness and 1000 hours exposure to 5% salt spray

d) According to WHIMS regulation

<i>Synthetic Oil Properties</i>	<i>Method</i>	<i>Value</i>
Oil viscosity index ^{a)}	ASTM D 2270	>110
Fire Point ^{b)}	ASTM D 92	321 °C [559 °F]
Flash Point	ASTM D 92	>290 °C [550 °F]

Note: Values based on synthetic oil component only.

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

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

Storage

Store between -10 °C and +40 °C [14°F and 104 °F] in dry area.

Health, Safety, and Environmental Awareness

Please see the 8616 **Material Safety Data Sheet** (MSDS) for greater details on transportation, storage, handling and other security guidelines.

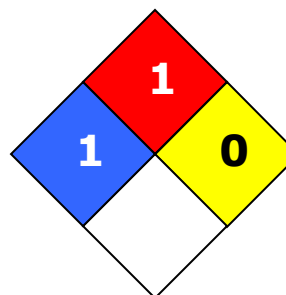
Environmental Impact: The volatile organic content is 18% by WHMIS and European standards. Not regulated as a dangerous good for transport.

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

HMIS[®] RATING

HEALTH:	1
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 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 (See 8616 MSDS). 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.

Recommendations: Use MG 401B Nutrol Control Cleaner or 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.

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, dispense grease onto the surface.

Packaging and Supporting Products

<i>Cat. No.</i>	<i>Form</i>	<i>Net Volume</i>	<i>Net Weight</i>
8616-3ML	Grease	3 mL 0.1 fl oz	8.2 g 0.26 oz

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.

Email: support@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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