

Description

The 860 *Silicone Heat Transfer Compound* is a low thermal resistance grease with a silicone 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, GPUs, and power components. It improves the thermal interface between irregular and pitted surfaces.

Benefits & Features

- **High thermal conductivity**
- **Lowers the contact resistance between irregular surfaces.**
- **Extends the life of electronic components**
- **High dielectric strength**
- **Safe on plastics**

Usage Parameters

<i>Properties</i>	<i>Value</i>
Shelf Life	5 y
Theoretical Coverage for 4G Pouch ^{a)}	<656 cm ² <0.70 ft ²

a) Idealized estimate based on 25 μm [1 mil] thickness and 100% transfer efficiency.

Temperature Ranges

<i>Properties</i>	<i>Value</i>
Constant Service Temperature	-40 to 200 °C [-40 to 392 °F]
Storage Temperature Limits	-10 to 40 °C [14 to 104 °F]

Principal Components

Name

Zinc oxide (thermally conductive filler)
Amorphous silica (filler)

CAS Number

1314-13-2
112945-52-5

Properties

<i>Thermal Properties</i>	<i>Method</i>	<i>Value</i>
Thermal Conductivity @25 °C [77 °F] Contact Thermal Resistance @25 °C [77 °F] ^{a)}	Hot Wire Method ASTM E 1225	0.66 W/(m·K) 0.57 x 10 ⁻³ (m ² ·K)/W
<i>Electrical Properties</i>	<i>Method</i>	<i>Value</i>
Volume Resistivity (ρ _v) Volume Conductivity (σ _v) Dielectric Strength @0.254 mm [0.01 mil] Dielectric Constant Dissipation Factor	ASTM D 149 ASTM D 150 "	1.5 x 10 ¹⁵ Ω/cm 6.7 x 10 ⁻¹⁶ S/cm 400 V/mil [16 kV/mm] 3.81 0.0032
<i>Grease Properties</i>	<i>Method</i>	<i>Value</i>
Evaporation Loss, 22 h @165 °C [329 °F] Oil Separation, 30 h @165 °C [329 °F] Dropping Point Water Washout @38 °C [100 °F] ^{b)} Worked Penetration, 60 strokes	ASTM D 2595 ASTM D 6184 ASTM D 566 ASTM D 1264 ASTM D 1403	0.1% 0.7% >260 °C [>500 °F] 0.1% 303
<i>Physical Properties</i>	<i>Method</i>	<i>Value</i>
Color Odor Density @25 °C [77 °F] Viscosity Lubricant Bleed @200 °C, 24 h Corrosion Resistant Filler	ASTM D 1475	White Odorless 2.40 g/mL Thixotropic paste No ≤2% by weight Yes Zinc oxide, Silica

a) Tested with stainless steel plates

b) Bearing dried at 77 °C [171 °F]

Storage

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

Health, Safety, and Environmental Awareness

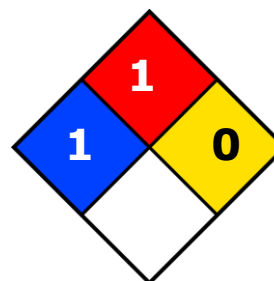
Please see the 860 **Safety Data Sheet** (SDS) for greater details on transportation, storage, handling and other security guidelines.

Health and Safety: This product presents low physical and health hazards. Follow good hygiene practices.

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)

Environmental Impact: The zinc oxide is classified as a marine pollutant by IMDG criteria. All standard sizes provided can ship as limited quantity products. The 4 g pouch sizes can ship as exempted quantity for dangerous good.

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.
- 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 824 Isopropyl Alcohol or MG 4351 Thinner

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, spread grease in a thin layer onto the surface.

Packaging and Supporting Products

<i>Cat. No.</i>	<i>Packaging</i>	<i>Net Volume</i>		<i>Net Weight</i>		<i>Packaging Weights</i>	
860-4G	Pouch	1.7 mL	0.06 fl oz	4 g	0.14 oz	0.56 kg ^{a)}	1.2 lb
860-60G	Jar	25 mL	0.84 fl oz	60 g	2.11 oz	0.59 kg ^{b)}	1.3 lb
860-150G	Tube	62.5 mL	2.11 fl oz	150 g	5.29 oz	0.18 kg	0.40 lb
860-1P	Jar	470 mL	15.9 fl oz	1.13 kg	2.49 lb	1.06 kg	2.34 lb

Contact MG Chemicals if custom packaging or sizes are required

a) Case pack of 100 pouches

b) Case pack of 5

Supporting Products

- *Super Wash Liquid*: Cat. No. 4050-1L, and so on
- *Super Wash Electronic Cleaner*: Cat. No. 406B-425G
- *Thinner*: Cat. No. 4351-1L
- *Isopropyl Alcohol (anhydrous, high purity)*: Cat. No. 824-W or 824-100ML

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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