Silicone Heat Transfer Compound
860 Technical Data Sheet

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

Properties	*Value*
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

Properties	*Value*
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	***CAS Number***
Zinc oxide (thermally conductive filler)	*1314-13-2*
Amorphous silica (filler)	*112945-52-5*

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Properties

Thermal Properties	*Method*	*Value*
Thermal Conductivity @25 °C [77 °F]	Hot Wire Method	0.66 W/(m·K)
Contact Thermal Resistance @25 °C [77 °F] a)	ASTM E 1225	0.57 x 10^{-3} (m^2·K)/W
Electrical Properties	***Method***	***Value***
Volume Resistivity (ρ_v)		1.5 × 10^{15} Ω/cm
Volume Conductivity (σ_v)		6.7 x 10^{-16} S/cm
Dielectric Strength @0.254 mm [0.01 mil]	ASTM D 149	400 V/mil [16 kV/mm]
Dielectric Constant	ASTM D 150	3.81
Dissipation Factor	"	0.0032
Grease Properties	***Method***	***Value***
Evaporation Loss, 22 h @165 °C [329 °F]	ASTM D 2595	0.1%
Oil Separation, 30 h @165 °C [329 °F]	ASTM D 6184	0.7%
Dropping Point	ASTM D 566	>260°C [>500 °F]
Water Washout @38 °C [100 °F] b)	ASTM D 1264	0.1%
Worked Penetration, 60 strokes	ASTM D 1403	303
Physical Properties	***Method***	***Value***
Color		White
Odor		Odorless
Density @25 °C [77 °F]	ASTM D 1475	2.40 g/mL
Viscosity		Thixotropic paste
Lubricant		No
Bleed @200 °C, 24 h		≤2% by weight
Corrosion Resistant		Yes
Filler		Zinc oxide, Silica
VOC (Volatile Organic Compound) c)	Estimated	27%

a) Tested with stainless steel plates
b) Bearing dried at 77 °C [171 °F]
c) According to WHIMS regulation

Storage

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

Health, Safety, and Environmental Awareness

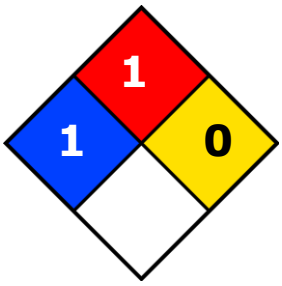
Please see the 860 **Safety Data Sheet** (SDS) for greater details on transportation, storage, handling and other security guidelines.

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

Cat. No.	*Packaging*	*Net Volume*		*Net Weight*		*Packaging Weights*	
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

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