SILICONE HEAT TRANSFER COMPOUND **860**

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: Silicone Heat Transfer Compound

SDS Code: 860

Related Part # 860-4G, 860-60G, 860-150G, 860-1P

Recommended Use and Restriction on Use

Use: Non-hardening compound for improving heat transfer across component interfaces

Uses Advised Against: Not available

Details of Manufacturer or Importer

Manufacturer
MG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA

☎ +1-800-340-0772
Fax +1-800-340-0773
E-mail support@mgchemicals.com
Web www.mgchemicals.com

MG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA

☎ +1-905-331-1396
Fax +1-905-331-2682
E-mail info@mgchemicals.com

E-MAIL (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY—leaks, spills, fires, exposures or accidents
USA or CANADA: Call CHEMTREC ☎: ***+1-800-424-9300***

For emergencies involving dangerous goods; Collect 24/7
CANADA: Call CANUTEC ☎: ***+1-613-996-6666*** or ****666*** on cellular phones

Section 2: Hazard(s) Identification

Classification of Hazardous Chemical

GHS Categories

Criteria	Category	Signal Word	Pictograms
Hazardous to the Aquatic Environment Chronic	1	Warning	Environment

Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity), which is opposite to HMIS and NFPA conventions. Severity category rankings do not allow comparisons between classes.

Label Elements

Signal Word	**WARNING**
Pictograms	**Hazard Statements**
	H410: Very toxic to aquatic life with long lasting effects
Prevention	**Precautionary Statements**
P273	Avoid release to the environment.
Response	**Precautionary Statements**
P391	Collect Spillage.
Disposal	**Precautionary Statements**
P501	Dispose of contents/container in accordance to local/regional/national/international regulations.

Hazards Not Otherwise Specified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
None	None	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
1314-13-2	zinc oxide	70%
112945-52-5	amorphous silica	3%

Section 4: First-Aid Measures

Exposure Condition	*GHS Code: Precautionary Statement*
IF IN EYES	P305 + P351+ P338
Immediate Symptoms	*redness, mild irritation*
Response	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN	P302 + P352
Immediate Symptoms	*mild irritation*
Response	Wash with plenty of water.
IF INHALED	P304 + P340
Immediate Symptoms	*coughing, irritation of the respiratory tract*
Delayed Symptoms	If exposed to metal fumes, chills and fever-like symptoms may occur 4-12 hours after exposure.
Response	Remove person to fresh air and keep comfortable for breathing.
IF SWALLOWED	P301 + P330 + P310
Immediate Symptoms	*none known or expected*
Response	Rinse mouth. Do NOT induce vomiting.

Section 5: Fire Fighting Measures

Extinguishing Media	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
Specific Hazards	When the product is exposed to very high heat such as welding, this may cause harmful zinc oxide fumes. Inhalation of fumes may cause metal fever and irritate the respiratory tract. The flu-like symptoms of metal fume fever may be delayed, occurring 4–12 hours after exposure. Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces carbon oxides (CO, CO_2), metal fumes, zinc oxide (ZnO), and formaldehyde.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Avoid breathing fumes/dust. Remove or keep away all sources of extreme heat or open flames.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment	Contain with inert absorbent (such as soil, sand, vermiculite).
Cleaning	Collect waste in a waste container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash spill area with soap and water to remove the last traces of residue.
Disposal	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep out of reach of children.
	Avoid breathing dust/fumes.
	Avoid release to the environment.
Handling	Wear protective gloves/protective clothing/eye protection.
	Wash hands thoroughly after handling.
	Collect spillage.
Storage	No special storage instructions needed.
	RECOMMENDATION: Keep in a dry and clean area, away from incompatible substances.

Section 8: Exposure Controls/Personal Protection

Substances with Occupational Exposure Limit Values

Chemical Name	Country or Vendor	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
zinc oxide	ACGIH	2 mg/m^3	Not established
(dust/mist)	U.S.A. OSHA PEL	2 mg/m^3	10 mg/m^3
	Canada AB	2 mg/m^3	10 mg/m^3
	Canada BC	2 mg/m^3	10 mg/m^3
	Canada ON	2 mg/m^3	10 mg/m^3
fumes	Canada QC	2 mg/m^3	10 mg/m^3
dust	Canada QC	10 mg/m^3	Not established
amorphous silica	ACGIH	Not established	Not established
	U.S.A. NIOSH	20 mppcf [a)]	Not established
	Canada AB	10 mg/m^3	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH1, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from RTECS2 database and data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) Millions of particles per cubic foot air, based on impinge samples counted by light-field technique.

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Engineering Controls

Ventilation	Keep airborne concentrations below the occupational exposure limits (OEL). Normal ventilation is generally adequate. The zinc oxide and silica dust are bound in the grease matrix and are not available as a respiration hazard under normal conditions.

Personal Protective Equipment

Eye protection	Wear appropriate protective eyeglasses or chemical safety goggles. **Recommendation:** Ensure that glasses have side shields for lateral protection.
Skin Protection	For likely contacts, use of protective butyl rubber or other chemically resistant gloves.
Respiratory Protection	For over-exposures up to 10 x OEL of dust/fumes, wear respirator such as a half-mask respirator with organic vapor cartridges. Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus. **RECOMMENDATION:** Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

Section 9: Physical and Chemical Properties

Physical State	Solid	**Lower Flammability Limit**	Not available
Appearance	White paste	**Upper Flammability Limit**	Not available
Odor	None	**Vapor Pressure @20 °C**	Not available
Odor Threshold	Not applicable	**Vapor Density**	Not available
pH	Not available	**Specific Gravity @25 °C**	2.40
Freezing/Melting Point	Not available	**Solubility in Water**	Insoluble [a)]
Boiling Point	>300 °C [>572 °F]	**Partition Coefficient**	Not available
Flash Point	260 °C [500 °F]	**Auto-ignition Temperature**	Not available
Evaporation Rate	Not available	**Decomposition Temperature**	Not available
Flammability (solid, gas)	Not available	**Viscosity @40 °C**	Not available

a) Metal components are sparingly soluble.

Section 10: Stability and Reactivity

Reactivity	None known
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, excessive heat, and incompatible substances.
Incompatibilities	Strong oxidizing agents, strong acids
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

Section 11: Toxicological Information

Routes of Exposure

Ingestion, Inhalation, Eye contact, and Skin contact

Symptoms Summary

Eyes	May cause redness and/or mild irritation.
Skin	May cause mild skin irritation.
Inhalation	May cause coughing and/or irritation of the respiratory tract.
	Inhalation of fumes may cause metal fever and irritate the respiratory tract. The flu-like symptoms of metal fume fever may be delayed, occurring 4–12 hours after exposure.
Ingestion	No known significant effects.
Chronic	No known long term effect.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
zinc oxide	7 950 mg/kg Rat	Not Established	2 500 mg/m^3 Mouse
amorphous silica	3 160 mg/kg Rat	Not Established	Not Established

Note: Toxicity data from the RTECS[2] and ECHA were consulted. The data from supplier (M)SDS were also consulted.

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Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met.
Carcinogenicity (risk of cancer)	Not classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP.
Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not met.
Teratogenicity (risk of fetus malformation)	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	There are no category 1 components and the kinematic viscosity of the mixture is >20.5 mm^2/s at 40 °C.

Section 12: Ecological Information

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (http://echa.europa.eu), and other reliable sources.

Contains zinc oxide which is a chronic category 1 solid (non-biodegradable, minimal EC50 of 0.042 mg/L Pseudokrichneriella subcapita) that is harmful to the environment.

The polydimethyl siloxane fluid and amorphous silica are not classifiable as ecotoxic hazards under GHS criteria.

Acute Ecotoxicity

See chronic ecotoxicity

Chronic Ecotoxicity

Category 1

Very toxic to aquatic life with long lasting effects

Avoid release to the environment

Collect spillage

Biodegradability

Not readily biodegradable

Other Effects

VOC exempt (by EPA and WHIMS guidelines)

**VOC = Regulated Volatile Organic Content*

Section 13: Disposal Information

Dispose of contents in accordance with all local, regional, national, and international regulations.

Section 14: Transport Information

Ground

Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations); **USA DOT 49 CFR** (Parts 100 to 185) **Regulations.**

Sizes under 450 kg **NOT REGULATED** in TDG per Special Provisions 99 Sizes 5 kg and under **NOT REGULATED** in 49 CFR per exception 171.4 (c)(2)	*FOR REFERENCE ONLY* **UN number**: UN3077 **Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide) **Class:** 9 **Packing Group**: III **Marine Pollutant:** Yes

Special Provision 99 (2): These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.

Air

Refer to ICAO-IATA regulations.

Sizes 5 kg and under Cat. No. 860-4G, 860-60G, 860-150G, 860-1P **NOT REGULATED** On the air waybill, write "Not Restricted, as per Special Provisions A197"	

Special Provision A197: These substances when transported in single or combination packagings containing net quantity per single or inner packaging of less than 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

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Sea

Refer to IMDG regulations.	
Sizes 5 kg and under Cat. No. 860-4G, 860-60G, 860-150G, 860-1P **NOT REGULATED** per 2.10.2.7	

2.10.2.7: Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provision of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this Code relevant to any additional hazards continue to apply.

Note: **Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.**

Section 15: Regulatory Information

Canada

Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL/NDSL.

Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

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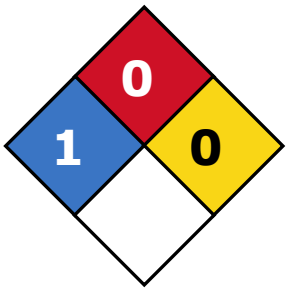
USA

Other Classifications

HMIS® RATING

HEALTH:	**1**
FLAMMABILITY:	**0**
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)

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45

This product contains zinc compounds which are subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, June 06, 2014 revision, USA).

This product does not contain any of the listed substances.

Europe

RoHS (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

WEEE (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

SDS Prepared by Michel Hachey

Date of Issue 11 May 2017

Supersedes 30 August 2016

Reason for Changes: Change in Section 14 due to implementation of special provisions in all modes of transport.

Reference

1) ACGIH *2013 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices*, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2013).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
TWA	Time Weighted Average
VOC	Volatile Organic Content

Technical Queries 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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SILICONE HEAT TRANSFER COMPOUND 860

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