

SUPER THERMAL GREASE II

8616

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: Super Thermal Grease II**SDS Code:** 8616**Related Part #** 8616-4G, 8616-3ML, 8616-25ML, 8616-85ML, 8616-1P, 8616-1G

Recommended Use and Restriction on Use

Use: Thermal interface grease for improving heat flow between the CPU and heat sink**Uses Advised Against:** Not available

Details of Manufacturer or Importer

Manufacturer

MG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADAMG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA**☎** +1-800-340-0772**FAX** +1-800-340-0773**E-MAIL** support@mgchemicals.com**WEB** www.mgchemicals.com**☎** +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 24/7CANADA: Call CANUTEC ☎: **+1-613-996-6666** or ***666** on cellular phones

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Section 2: Hazard(s) Identification


Classification of Hazardous Chemical

GHS Categories

Criteria	Category	Signal Word	Pictograms
Environmental Hazard Chronic Aqua. Tox.	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/international regulations.

Hazards Not Otherwise Classified

When the product is exposed to very high heat such as welding or when mechanically aerosolized, this may cause harmful zinc oxide and aluminum 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. Repeated or prolonged exposure to aluminum oxide fumes may also lead to staining, pulmonary fibrosis (lung scarring), and pneumoconiosis (reaction to the deposition of dust in the lungs).

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Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
1344-28-1	aluminum oxide	42%
1314-13-2	zinc oxide	37%

Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	<i>mild irritation, redness, pain</i>
Response	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention
IF ON SKIN	P302 + P352, P332 + P313
Immediate Symptoms	<i>mild irritation</i>
Response	Wash with plenty of water. If irritation occurs: Get medical advice/attention
IF INHALED	P304, P340, P312 <i>(Not a likely route of exposure under normal use)</i>
Immediate Symptoms	<i>none known</i>
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. If feeling unwell: Call a POISON CENTRE/doctor.
IF SWALLOWED	P301, P330, P331, P312 <i>(Not a likely route of exposure under normal use)</i>
Immediate Symptoms	<i>none known</i>
Response	Rinse mouth. Do NOT induce vomiting. If feeling unwell: Call a POISON CENTRE/doctor

SUPER THERMAL GREASE II**8616****Section 5: Fire-Fighting Measures**

Extinguishing Media	Use carbon dioxide, dry chemical, chemical foam, or water spray to extinguish. Use water spray to cool containers.
Specific Hazards	Toxic metal fumes may be released in fire. Prevent fire-fighting wash from entering waterway or sewer system. Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces carbon oxides (CO, CO ₂), nitrogen oxides (NO _x), aluminum oxides, boron oxides, toxic fumes, and smoke.
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 the vapors/mist/fumes.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment Methods	None required
Cleaning Methods	Collect paste in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe up further residue with paper towel and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue.
Disposal Methods	Dispose of spill waste according to Section 13.

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Section 7: Handling and Storage

- Prevention** Avoid breathing fumes.
 Do not eat, drink, or smoke when using this product.
- Handling** Wear protective gloves/eye protection.
 Recommendation: Wear neoprene, butyl rubber, nitrile or other impervious gloves with breakthrough time greater than intended use period.
 Wash hands thoroughly after handling.
- Storage** Store in well-ventilated place. Keep cool.
 Store locked up.

Section 8: Exposure Controls/Personal Protection
Substances with Occupational Exposure Limit Values

Chemical Name	Country/ Provinces	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
aluminum metal and insoluble compounds ^{a)}	ACGIH	1 mg/m ³	Not established
	U.S.A. OSHA PEL	15 mg/m ³	Not established
	Canada AB	10 mg/m ³	Not established
	Canada BC	1 mg/m ³	Not established
	Canada ON	1 mg/m ³	Not established
	Canada QC	10 mg/m ³	Not established
zinc oxide (dust/mist)	ACGIH	2 mg/m ³	Not established
	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
	Canada QC	2 mg/m ³	10 mg/m ³
fumes dust	Canada QC	2 mg/m ³	10 mg/m ³
	Canada QC	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 by RTECS database² 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) Respirable airborne particles.

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SUPER THERMAL GREASE II**8616****Engineering Controls****Ventilation**

Keep airborne concentrations below the occupational exposure limits (OEL).

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

In the unlikely event of exposure to mist, wear oil resistant or oil proof particulate respirators or filter masks.

RECOMMENDATION: Consult your local safety supply store to ensure your respirator or mask.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

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Section 9: Physical and Chemical Properties

Physical State	Solid	Lower Flammability Limit	Not applicable
Appearance	White, grease	Upper Flammability Limit	Not applicable
Odor	Low odor	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Specific Gravity @25 °C	2.74
Freezing/Melting Point	Not available	Solubility in Water	<0.1%
Boiling Point	Not available	Partition Coefficient	Not available
Flash Point ^{a)}	>550 °C [>1022 °F]	Auto-ignition Temperature	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability (solid, gas)	Not available	Viscosity @25 °C	1 000 000 mm ² /s

a) Based on synthetic oil component Cleveland open cup value

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, open flames, excessive heat, and incompatible substances
Incompatibilities	Halogenated compounds, strong oxidizing agents, strong acids, strong bases
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

SUPER THERMAL GREASE II**8616****Section 11: Toxicological Information****Routes of Exposure**

Eye contact, Skin contact, Inhalation, and Ingestion

Symptoms Summary

Eyes	May cause mild eye irritation, redness or pain. The aluminum oxide and zinc oxide are mechanically abrasive.
Skin	May causes mild skin irritation.
Inhalation	Fumes or gases from product when heated to extreme temperatures can cause metal fume fever and toxic gas emissions.
Ingestion	No acute toxicity effect known. May cause irritation.
Chronic	Prolonged or repeated inhalation exposure to aluminum oxide particles may lead to lung scarring and reaction to dust deposition in the lungs.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
aluminum oxide	Not available	Not available	Not available
zinc oxide	7 950 mg/kg Rat	Not established	2 500 mg/m ³ Mouse

Note: Toxicity data from the RTECS database accessed through the Canadian Centre for Occupational Health and Safety (CCOHS)² were consulted. The data from supplier (M)SDS were also consulted.

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.

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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	Based on available data, the classification criteria are not met. There is less than 10% category 1 components.

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 an acute and chronic category 1 solid (non-biodegradable, minimal LC50 of 0.042 mg/L) that is harmful to the environment.

The synthetic is reported by the supplier to be a Category 4 chronic aquatic toxicant.

Acute Ecotoxicity

Category 1

Very toxic to aquatic life

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

Regulated Volatile Organic Content (VOC) = 18% (485 g/L)

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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 CFR 49 Regulations (Parts 100 to 185).

Sizes 5 kg and under

Limited Quantity



Sizes greater than 5 kg

UN number: UN3077
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
Class: 9
Packing Group: III
Marine Pollutant: Yes



Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 30 g and under

Excepted Quantity

Document as class **E1**
Refer to Package Mark 2.6.7.1 in **IATA** for further instruction



Sizes greater than 30 g up to 30 kg

Limited Quantity

UN number: UN3077
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
Class: 9
Packing Group: III
Marine Pollutant: Yes



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SUPER THERMAL GREASE II**8616****Sea****Refer to IMDG regulations.**

Sizes 5 kg and under

Limited Quantity

Sizes greater than 5 kg

UN number: UN3077**Shipping Name:** ENVIRONMENTALLY
HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (Zinc oxide)**Class:** 9**Packing Group:** III**Marine Pollutant:** Yes

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

Section 15: Regulatory Information**Canada****WHMIS 1988 Classification**

Not classified as hazardous under WHMIS

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

All hazardous ingredients are listed on the DSL/NDSL.

Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

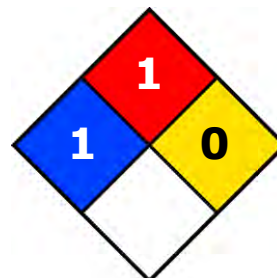
Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

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SUPER THERMAL GREASE II**8616****USA****Other Classifications****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)

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 products that are listed as hazardous air pollutants.

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

This product contains aluminum oxide (CAS# 1344-28-1) and zinc components (CAS# 1314-13-2), 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 substances known to be listed in California.

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SUPER THERMAL GREASE II**8616****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 Review	24 November 2015
Supersedes	14 November 2014
Reason for Changes:	Format changes

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)
ECHA	European Chemicals Agency
EU	European Union
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

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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.

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