

8616

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 8616**Other Means of Identification :** Super Thermal Grease II**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 applicable

Details of Manufacturer or Importer

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

MG 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 Verisk 3E at **+1-866-519-4752** or **+1-760-476-3962**
(Service access code: 335388)

For emergencies involving the transport of dangerous goods; 24/7 service
CANADA—Call CANUTEC collect at **+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
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 in accordance to local, regional, national, and international regulations.

Hazards Not Otherwise Classified

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

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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: Precautionary Statement</i>
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	<i>redness, mild irritation, pain</i>
Response	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or 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 or attention.
IF SWALLOWED	P301 + P330, P331
Immediate Symptoms	<i>Low toxicity—without known symptoms or adverse effects</i>
Response	Rinse mouth. Do NOT induce vomiting.
IF INHALED	P304 + P340, P312
Immediate Symptoms	<i>Low toxicity—without known symptoms or adverse effects</i>
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. If feeling unwell: Call a POISON CENTRE or doctor.

8616**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	<p>In case of fire, this product can release zinc and aluminum oxide fumes. Zinc and aluminum oxide fumes exposure may lead to a metal fume fever. The symptoms of metal fume fever may occur 4 to 12 hours after initial exposure.</p> <p>Prevent fire-fighting wash from entering waterway or sewer system.</p>
Combustion Products	Produces carbon oxides (CO,CO ₂), zinc oxides (ZnO), and aluminum oxides (Al ₂ O ₃).
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turnout gear.

Section 6: Accidental Release Measures

Personal Protection	See personal protection equipment in Section 8.
Precautions for Response	Remove or keep away all sources of extreme heat. Avoid breathing fumes.
Environmental Precautions	Avoid release to the environment. Prevent spill from entering drains and waterways.
Containment Methods	Not applicable—not readily flowable
Cleaning Methods	Collect grease in a sealable, oil-resistant 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	Keep out of reach of children. Keep away all sources of extreme heat. Avoid breathing fumes. Avoid release to the environment.
Handling	Wear protective gloves and eye protection. Wash hands thoroughly after handling. Collect spillage.
Storage	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)
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 the RTECS² database and data from suppliers' SDSs were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

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8616**Engineering Controls****Ventilation**

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

Because zinc oxide and aluminum oxide are inextricably bound to the adhesive mixture, it does not present an airborne hazard under normal use. Ensure adequate ventilation if the product is mechanically misted or aerosolized.

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.

For incidental contacts, use nitrile or other chemically resistant gloves.

Respiratory Protection

If exposed to thermal degradation products from extreme heat or combustion conditions, wear a NIOSH approved self-contained breathing apparatus (SCBA) or supplied air respirator.

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.

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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	Odorless	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Relative Density @25 °C	2.69
Freezing/Melting Point	Not available	Solubility in Water	Insoluble
Initial Boiling Point	Not available	Partition Coefficient n-octonal/water	Not available
Flash Point ^{a)}	290 °C [554 °F]	Auto-ignition Temperature	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Not available	Viscosity @40 °C	>20.5 mm ² /s

a) based on synthetic oil

Section 10: Stability and Reactivity

Reactivity	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. These fumes can cause metal fume fever. The symptoms of metal fume fever may occur 4 to 12 hours after initial exposure.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Very high heat (such as soldering or welding) 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.

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Section 11: Toxicological Information
Summary of Effects and Symptoms by Routes of Exposure

Eyes	May cause redness, a mild eye irritation, or pain. The aluminum oxide and zinc oxide is mechanically abrasive.
Skin	May cause a mild skin irritation.
Inhalation	No symptoms or adverse effects anticipated under normal use. When heated to extreme temperatures, fumes from product can cause metal fume fever and respiratory irritation.
Ingestion	Low toxicity—without known symptoms or adverse effects
Chronic	Not applicable

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 available	2 500 mg/m ³ mouse

Note: Toxicity data from the RTECS² and ECHA were consulted. The data from supplier SDS were also consulted.

Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	May cause mild eye irritation. Contains mechanically abrasive particles.
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.

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8616**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 hazardBased on available data, the classification criteria are not met. There are no category 1 components, and the kinematic viscosity is $>20.5 \text{ mm}^2/\text{s}$ at $40 \text{ }^\circ\text{C}$.**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 an acute and chronic category 1 solid (non-biodegradable, minimal LC50 of 0.042 mg/L) that is harmful to the environment.

Based on available data, aluminum oxide is not classified as environmental hazard according to GHS criteria.

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

Not available

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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 DOT 49 CFR** (Parts 100 to 185) **Regulations.**

Sizes 5 kg and under
8616-4G, 8616-3ML, 8616-25ML,
8616-85ML, 8616-1P

NOT REGULATED in 49 CFR per
exception 171.4 (c)(2)

NOT REGULATED in TDG per
Special Provisions 99

Sizes over 5 kg

8616-1G *

UN number: UN3077

Shipping Name:

ENVIRONMENTALLY
HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (zinc oxide)

Class: 9

Packing Group: III

Marine Pollutant: Yes



171.4 (c) Exceptions:

(2) 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 of 5 kg or less for solids, are not subject to any other requirements of this subchapter provided the packagings meet the general requirements in §§ 173.24 and 173.24a. This exception does not apply to marine pollutants that are a hazardous waste or a hazardous substance. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this subchapter relevant to any additional hazards continue to apply.

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.

* 8616-1G isn't regulated in Canada under Special Provision 99, but this exception doesn't apply in other jurisdictions.

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Air

Refer to ICAO-IATA regulations.

Sizes 5 kg and under
8616-4G, 8616-3ML, 8616-25ML,
8616-85ML, 8616-1P

NOT REGULATED

On the air waybill, write
"Not Restricted, as per
Special Provisions A197"

Sizes over 5 kg
8616-1G

UN number: UN3077

Shipping Name: ENVIRONMENTALLY
HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (zinc oxide)

Class: 9

Packing Group: III

Marine Pollutant: Yes



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.

Sea

Refer to IMDG regulations.

Sizes 5 kg and under
8616-4G, 8616-3ML, 8616-25ML,
8616-85ML, 8616-1P

NOT REGULATED

per 2.10.2.7

Sizes over 5 kg
8616-1G

UN number: UN3077

Shipping Name: ENVIRONMENTALLY
HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (zinc oxide)

Class: 9

Packing Group: III

Marine Pollutant: Yes



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.

8616**Section 15: Regulatory Information****Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

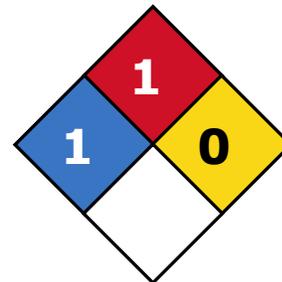
All hazardous ingredients are listed on the DSL/NDSL.

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.

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 substances 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 compounds (CAS# 1314-13-2) which can be subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372 under certain conditions.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

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

This product does not contain any listed substances in California.

Europe

RoHS (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, PBDE's, DEHP, BBP, DBP, or DIBP 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	Regulatory Department
Date of Revision	04 February 2021
Supersedes	28 July 2020
Reason for Changes:	Update to product name in section 1.

Reference

- 1) ACGIH 2017 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 (2017).
- 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
PPE	Personal Protection Equipment
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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