

MATERIAL SAFETY DATA SHEET

This MSDS is compatible with ISO 11014 – 1:1994 and conforms to ANSI standard Z400.1 – 2004.

SAFETY DATA SHEET

This SDS complies with 91/155/EEC and 2001/58/EC

Section 1: Chemical Product and Company Identification

CHEMICAL SUPPLIER COMPANY NAME

Shin-Etsu MicroSi, Inc.
 10028 South 51st Street
 Phoenix, AZ 85044

EMERGENCY TELEPHONE

Chemtrec 24 hrs, USA: (800) 424-9300
 Information: (480) 893-8898
 Fax: (480) 893-8637

MANUFACTURER'S NAME:

Shin-Etsu Chemical Co., Ltd.

ADDRESS:

6-1, 2-Chome, Ohtemachi, Chiyodaku, Tokyo, 100-0004, Japan

TELEPHONE NUMBER:

81-3-3246-5345 Tokyo, Japan

81-255-45-5811 Niigata, Japan

31-20-662-1359 Shin Etsu International Europe B.V., Amsterdam, The Netherlands

DATE PREPARED:

May 12, 2006

REVISION DATE: December 7, 2006

PRODUCT NAMES:

G-765

CHEMICAL NAME:

Organopolysiloxane mixture

CHEMICAL FAMILY:

Silicone Grease

FORMULA:

Preparation/Mixture

Section 2: Composition, Information on Ingredients

PRODUCT COMPOSITION	APPRX %	ACGIH TLV	OSHA PEL	NIOSH REL	CAS NO.	EINECS/ELINCS	DANGER SYMBOL	RISK PHRASE	DSL CANADA
Aluminum Nitride (AlN)	>50	----	----	----	24304-00-5	246-140-8	----	----	Y
Zinc Oxide	<30	2 mg/m3	15 mg/m3	5 mg/m3	1314-13-2	215-222-5	N	50/53	Y
Siloxanes and Silicones	<20	----	----	----	----	Y Polymer Exemption	----	----	Y

Trade Secret (TS)

Some items on this MSDS may be designated as trade secrets. Bonafide requests for disclosure of trade secret information to medical personnel must be made in accordance with the provisions contained in 29 CFR 1910.1200 I 1-13.

The full text for all R-Phrases is shown in Section 16.

Section 3: Hazards Identification

HAZARD CLASSIFICATION:

Not Classified As Hazardous Based On IMO and DOT.

FIRE AND EXPLOSION:

Not considered flammable or combustible, but this product will burn if involved in a fire. Emits toxic fumes when burned.

POTENTIAL HEALTH EFFECTS:

INGESTION:

No Information

INHALATION:

No Information

SKIN CONTACT:

May Cause Slight Irritation

EYE CONTACT:

Eye Irritation May Result

OTHER:

None

CHRONIC EFFECTS OF OVEREXPOSURE:

None

APPEARANCE:

Slight Odor

NFPA Rating:

Component	Health (Blue)	Flammability (Red)	Reactivity (Yellow)	Special (White)
G-751	2	1	0	--

Section 4: First Aid Measures

INHALATION: Remove to fresh air. If not breathing, provide CPR (cardio pulmonary resuscitation) get immediate medical attention.
SKIN CONTACT: Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing.
EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.
INGESTION: If swallowed do not induce vomiting, give large quantities of water to drink. Never give anything to an unconscious person. Get immediate medical attention.

Section 5: Fire-fighting Measures

FLASH POINT: Not applicable
FLAMMABLE LIMITS IN AIR (% by vol): Not measured
EXTINGUISHING MEDIA: Foam, Dry Chemical Powder, Carbon Dioxide, or water.
SPECIAL FIREFIGHTING PROCEDURES: Wear appropriate protective equipment, including NIOSH-approved respirator. Work from the upwind side of the fire. Use suitable extinguishing agents. If possible, move the container to a safe area. If it cannot be removed from fire danger, protect it from destruction then cool container and vicinity by spraying with water. If ignited and it cannot be extinguished easily, evacuate the area and call your emergency responders.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Emits toxic fumes under fire conditions.

Section 6: Accidental Release Measures

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
 Wear proper protective equipment and warn unnecessary people away. Eliminate all sources of ignition and ventilate area. Contain or dike the spill or leak. Take up spilled material with rag or cardboard. Place in a chemical waste container for later disposal. Avoid contacting spilled material with acids, bases, or oxidizing materials to prevent generation of hydrogen gas. Prevent spills from entering sewers or watercourses.

 Disposal method: disposal should be made in accordance with federal, state, and local regulations. Incineration is recommended.

Section 7: Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
 Store Upright In a Cool Place
 Keep Container Closed When Not In Use.
 Wear proper protective equipment and avoid contact with skin, eyes, or clothing.
 Wash hands after handling this material.
 Follow all applicable local regulations for handling and storage.
 Utilize chemical segregation.

INFORMATION ON EMPTIED CONTAINER
 Do not reuse this container.
 Do not puncture, cut, or weld on or near this container.
 Keep empty container away from heat, sparks, flame, and other possible sources of ignition.
 Dispose of this container according to local, state, and federal laws in your country.
 Do not reuse this container. This container may be hazardous when emptied.

SPECIFIC USES:
 This product is intended to aid in the thermal management of electronic devices.

Section 8: Exposure Controls/Personal Protection

EXPOSURE GUIDELINES

EXPOSURE LIMITS	Reference Section 2
VENTILATION:	Good general, mechanical room ventilation is recommended.
SPECIAL VENTILATION CONTROLS:	None required
RESPIRATORY PROTECTION:	None required
PROTECTIVE GLOVES:	Plastic film or rubber gloves
EYE PROTECTION:	Safety Glasses, Chemical Goggles, or Face shield
SKIN PROTECTION:	Suitable protective clothing to prevent skin contact
OTHER EQUIPMENT:	Make safety shower, eyewash stations, and hand washing equipment available in the work area.
WORK/HYGIENE PRACTICES:	Avoid contact with eyes. Wash hands and face after handling.

Section 9: Physical and Chemical Properties

BOILING POINT:	Not applicable
SPECIFIC GRAVITY (@25 °C):	2.73 [Water = 1.0]
VAPOR PRESSURE (@25 °C):	Negligible
VAPOR DENSITY (AIR = 1)	NA
FREEZING POINT:	NA
MELTING POINT:	NA
EVAPORATION RATE:	Negligible (Butyl Acetate = 1)
SOLUBILITY IN WATER:	Not Soluble
APPEARANCE - COLOR:	Gray
PHYSICAL STATE:	Grease or Paste
ODOR:	Slight Odor
PH	NA
VISCOSITY	NA
CORROSIVE	No

Section 10: Stability and Reactivity

STABILITY:	Stable.
CONDITIONS TO AVOID:	None
INCOMPATIBILITY (MATERIALS TO AVOID):	None
HAZARDOUS DECOMPOSITION PRODUCTS:	Emits toxic fumes when burned
HAZARDOUS POLYMERIZATION:	Will not occur

Section 11: Toxicological Information

No information is available for the product mixture.

SKIN IRRITATION:			
SKIN RABBIT:	500g/kg	Mild	ZnO
EYE IRRITATION:			
EYE-RABBIT:	500 mg	Mild	ZnO
ACUTE TOXICITY			
LD50 (Oral Rat)	>8437 mg/kg		ZnO
TCLo (Human Inhalation)	600 mg/kg		ZnO
TDLo (Human Oral)	500 mg/kg		ZnO
TDLo (Intratracheal/rat)	250 mg/kg		AIN
CARCINOGENICITY			
NTP:	Not listed		
IARC	Not listed		
OSHA REGULATED:	Not listed		
AMES TEST RESULTS:	None		

OTHER INFORMATION:

OEL-RUSSIA: TWA 6 mg/m3, JUN2003 A1N

Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Section 12: Ecological Information

BIODEGRADATION:	Not applicable
BIOACCUMULATION:	No information is available for mixture.
AQUATIC TOXICITY:	No information is available for mixture.
OTHER INFORMATION:	None
1999/45/EC Annex III	No Environmental hazards

Section 13: Disposal Considerations

Waste material can be burned in a chemical incinerator equipped with an afterburner and scrubber. Do not dispose of the emptied container unless the contents have been completely removed. Do not dispose of the emptied container unlawfully.

Section 14: Transport Information

ROAD TRANSPORT:

ADR = International Carriage of Dangerous Goods by Road

UN NUMBER:	Not Regulated
DOT PROPER SHIPPING NAME	
DOT / ADR HAZARD CLASS:	
DOT / ADR LABELS:	
PLACARD:	
DOT / ADR PACKAGING GROUP:	
HAZARD NUMBER – ADR:	
ADR PROPER SHIPPING NAME:	
EPA HAZARDOUS WASTE CLASS:	
MARINE POLLUTANT:	

DOT REPORTABLE QUANTITY (49 CFR 172.101, APP.) and CERCLA REPORTABLE QUANTITY (40 CFR PART 302, TABLE 302.4)
HAZARDOUS SUBSTANCE(S) NAME / (CAS NO.), CONTENT(S) AND RQ: Zinc oxide/ CAS 1314-13-2, ca. 20%: 1000 lbs (454kg)

RAIL TRANSPORT:

RID CLASS No.:	Not Regulated
RID PACKING GROUP:	

SEA TRANSPORT: IMO

UN NUMBER SEA	Not Regulated
IMDG HAZARD CLASS:	
IMDG PACKING GROUP:	
EmS No.:	
MARINE POLLUTANT:	
SEA TRANSPORT NOTES:	

AIR TRANSPORT:

IATA/ICAO CLASS:	Not Regulated
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Section 15: Regulatory Information

LABEL FOR SUPPLY:



IRRITANT

R-Phrase:	R36	Irritating to Eyes
	R38	Irritating to Skin
S-Phrase:	S24	Avoid contact with Skin
	S25	Avoid contact with Eyes

TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS:

This product is in compliance with rules, regulations, and orders of TSCA.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III SECTION 313 SUPPLIER NOTIFICATION:

This regulation requires submission of annual reports of toxic chemical(s) that appear in section 313 of the Emergency Planning and Community Right To Know Act of 1986 and 40 CFR 372. This information must be included in all MSDS's that are copied and distributed for the material.

The toxic chemicals contained in this product are: Zinc oxide

CALIFORNIA PROPOSITION 65:

This regulation requires a warning for California Proposition 65 chemical(s) under the statute.

The California proposition 65 chemical(s) contained in this product are: None

STATE RIGHT-TO-KNOW TOXIC SUBSTANCE OR HAZARDOUS SUBSTANCE LIST:

Florida Toxic Substance(s):	Not listed
Massachusetts's hazardous substance(s):	Zinc Oxide
Pennsylvania hazardous substance code(s):	Zinc Oxide
New Jersey	Zinc Oxide
Illinois	Not listed
Michigan	Not listed

CANADA:**WHMIS-INFORMATION:**

The chemical components of this product are in compliance with the WHMIS regulations.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

RoHS CERTIFICATION: The Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS), EU Directive (2002/95/EC). We hereby certify that the hazardous substances regulated by the RoHS Directive 2002/95/EC are not used intentionally as ingredient(s) for G-765 which is manufactured by Shin-Etsu Chemical Co. Ltd. This certification is valid only for this product, G-765. Packaging materials were not considered for this certification.

WEEE CERTIFICATION: Waste Electrical and Electronic Equipment (WEEE), European Union Directive 2002/96/EC. Shin Etsu MicroSi does not consider G-765 a product that qualifies as one of the 10 categories of electrical and electronic equipment listed in Annex 1A of Directive 2002/96/EC. Also, the products manufactured by Shin Etsu MicroSi do not intentionally contain any of the regulated substances, preparations, or components listed in Annex II of Directive 2002/96/EC. This certification is valid only for this product: G-765. Packaging materials were not considered for this certification.

EUROPEAN UNION:

This product has been reviewed for compliance with the following European Community Directives: Directive 67/548/EEC, Directive 2001/59/EC, Directive 1999/45/EC, Directive 91/155/EC, and Directive 2001/58/EC.

EINECS: European Inventory of Existing Commercial Chemical Products.

ELINCS: European List of Notified Chemical Substances

WGK Classification, Germany = 1 (Water Resources Act in Germany)

Section 16: Other Information

Full Text:

European Community Hazards Identification:

R: 50/53 Very Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

S: 60 This material and its container must be disposed of as hazardous waste

S: 61 Avoid release to the environment. Refer to special instructions/Safety Data Sheets.

Danger Symbol(s): N Dangerous for the Environment

Revision Comments: Updated from December 4, 2006

Revision Number: 1

Information Sources: RTECS

FOR INDUSTRIAL USE ONLY

THIS MATERIAL SAFETY DATA SHEET IS OFFERED SOLELY FOR YOUR INFORMATION, CONSIDERATION, AND INVESTIGATION. THE DATA DESCRIBED IN THIS MSDS CONSIST OF DATA ON LITERATURE, OUR ACQUISITIONAL DATA, AND ANALOGICAL INFERENCE BY DATA OF SIMILAR CHEMICAL SUBSTANCES OR PRODUCTS. SHIN-ETSU CHEMICAL CO. LTD. PROVIDES NO WARRANTIES, EITHER EXPRESSED OR IMPLIED, AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE DATA CONTAINED HEREIN.

ADDITIONAL INFORMATION

THIS DATA IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY, EITHER EXPRESSED OR IMPLIED, IS MADE. THE RECOMMENDED HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE.