

Safety Data Sheet

SILVGREASE1, SILV5-THERMAL-PASTE

1. IDENTIFICATION

1.1 Product Identifier:	SILVGREASE1, SILV5-THERMAL-PASTE
Synonyms :	Cooler Paste
1.2 Recommend Use of the Product:	For CPU and heatsink as a heat conductive material
1.3	
1.4 Dangerous Goods Classification:	Not applicable.
1.5 Company	Details:
Manufacturer/Supplier:	StarTech.com
Address:	2500 Creekside Parkway, Suite 100, Lockbourne, Ohio, 43137, USA.
Telephone Number:	1-800-265-1844
Fax Number:	(519)455-9425

2. HAZARDS IDENTIFICATION

2.1 Overall Hazard Classification:	Non-Dangerous for the environment.
2.2 Precautionary Statement:	<ol style="list-style-type: none"> 1. Keep away from children 2. . Wash hands after handling 3. . Avoid contact with skin and eyes. 4. . In case of fire and/or explosion do not breathe fumes. 5. Use appropriate container to avoid environmental contamination. 6. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. 7. Dispose of contents/container in accordance with local, regional, national, and international regulations
2.3 Route of Exposure:	Skin Contact and Accidental Ingestion.
2.4 Possible Health Effects:	
<u>Acute</u>	
Eyes:	Direct contact may cause mild irritation. Rinse cautiously with water
Skin:	No significant irritation expected from a single short-term exposure.
Inhalation:	No significant effects expected from a single short-term exposure.
Ingestion:	Low ingestion hazard in normal use.
<u>Chronic</u>	
Skin:	Repeated or prolonged exposure may cause irritation.
Inhalation:	No known applicable information.
Ingestion:	Repeated ingestion or swallowing large amounts may injure internally.
2.5 Signs and Symptoms of	
Overexposure:	No significant adverse effects from a single exposure expected from normal use.
2.6 Emergency	If swallow or unknown uncomfortable, call a doctor immediately

3. COMPOSITION / INFORMATION ON INGREDIENTS

- 3.1 **Chemical characterization:** Mixture
3.2 **Physical Form:** Grease
3.3 **Color:** Silver
3.4 **Use:** Electronics/Microelectronics application

3.5 **Ingredient :**

Chemical Name:	% (w/w)	CAS No.
Silicone compounds - 30%	Silica powder <15%	7440-21-3
	Polysiloxane <15%	63148-62-9
Carbon compounds - 10%	Silicon Carbide <10%	409-21-2
Metal compounds - 60%	Zinc Oxide <10%	1314-13-2
	Aluminum oxide <36%	1344-28-1
	Magnesium oxide <14%	1309-48-4

4. FIRST AID MEASURES

- 4.1 **General Advice :** Call a poison control center or hospital immediately for treatment advice. data sheet to the doctor in attendance
4.2 **Eyes:** Immediately flush with water for 15 minutes.
4.3 **Skin:** No first aid should be needed.
4.4 **Inhalation:** No first aid should be needed.
4.5 **Ingestion:** Rinse mouth, and drink volume water. Get medical attention.
4.6 **Comments:** Treat according to person's condition and specifics of exposure.

5. FIRE FIGHTING MEASURES

- 5.1 **Extinguishing Media:** On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO₂), dry chemical or water spray. Water can be used to cool fire exposed containers.
- 5.2 **Special Fire Fighting plan. Procedures and apparatus Equipment:** Determine the need to evacuate or isolate the area according to your local emergency and protective clothing should be worn in fighting large fires involving chemicals.
- 5.3 **Unsuitable Extinguishing Media:** None established.
- 5.4 **Hazard combustion Material :** Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Metal oxides. Formaldehyde.
- 5.5 **Protective equipment and precautions for firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal Precautions:** Avoid eye contact. Do not swallow.
- 6.2 Environmental Precautions:** Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.
- 6.3 Methods for Cleaning up:** Observe all personal protective equipment recommendations described in this MSDS. If material can be pumped, store recovered material in appropriate container. Wipe up or scrape up and contain for salvage or disposal. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated

7. HANDLING AND STORAGE

- 7.1 Precautions for Safe Handling :** Use with adequate ventilation. Avoid eye contact. Do not take internally. Follow your industrial rules. Wash hands after handling, especially before eating, drinking or smoking.
- 7.2 Safe Storage Conditions:** Use seal can. Store away from oxidizing materials. Store away from children. Reclose cap tightly after each use. Store this product in a cool, dry area, away from direct sunlight and heat to avoid deterioration. Do not store with food. It may contaminate food.
- 7.3 Unsuitable Packaging Materials:** None established.

8 . EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	UK
Silica powder 7440-21-3		(Vacated)TWA:10mg/m3 (Vacated)TWA:5mg/m3 TWA : 15mg/m3 TWA: 5mg/m3	TWA:10mg/m3 TWA: 5mg/m3	
Silicon Carbide 409-21-2	TWA:10mg/m3 TWA: 3mg/m3 TWA: 0.1 Fiber/cm3	(Vacated)TWA:10mg/m3 (Vacated)TWA:5mg/m3 TWA : 15mg/m3 TWA: 5mg/m3	TWA:10mg/m3 TWA: 5mg/m3	
Zinc Oxide 1314-13-2	TWA : 2mg/m3 STEL: 10mg/m3	(Vacated)TWA:10mg/m3 (Vacated)TWA:5mg/m3 TWA : 15mg/m3 TWA: 5mg/m3	IDLH: 500mg/m3 TWA: 5mg/m3 STEL: 10mg/m3	
Aluminum Oxide 1344-28-1	TWA: 1mg/m3	(Vacated)TWA:10mg/m3 (Vacated)TWA:5mg/m3 TWA : 15mg/m3 TWA: 5mg/m3		STEL:30mg/m3 15min STEL:12mg/m3 15min TWA: 10mg/m3 8hr. TWA: 4mg/m3 8hr
Magnesium Oxide 1309-48-4	TWA:10mg/m3	(Vacated)TWA:10mg/m3 TWA:15mg/m3	IDLH: 750mg/m3	

8.1 Engineering Controls

Local Ventilation: None should be needed.

General Ventilation: Recommended.

8.2 Personal Protective Equipment for Routine Handling

Respiratory protection: No respiratory protection should be needed.

Suitable Respirator: None should be needed.

Eye protection: Use proper protection - safety glasses as a minimum.

Hand protection: No special protection needed. If need protection, EN374 glove is applicable

Skin protection: Wash hands after handling.

Hygiene Measures: Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.

8.3 Personal Protective Equipment for Spills

Respiratory protection: No respiratory protection should be needed.

Eye protection: Use proper protection - safety glasses as a minimum.

Skin protection: Washing at mealtime and end of shift is adequate.

Precautionary Measures: Avoid eye contact. Do not take internally. Use reasonable care.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1	Physical Form:	Grease
9.2	Color:	Silver
9.3	Odor:	Odorless
9.4	Odor threshold :	No data available
9.5	pH:	No data available
9.6	Solubility in Water:	Not solubility in Water
9.7	Boiling Point:	180 °C
9.8	Melting Point:	No data available
9.8	Flash Point:	305 °C (Seta Closed Cup)
9.9	Autoignition temperature:	Not determined.
9.10	Explosive properties:	Non-Explosive
9.11	Oxidizing properties:	Non-oxidizing
9.12	Vapor Pressure @ 25°C:	No data available
9.13	Specific Gravity:	1.35
9.14	Octanol /water partition coefficient:	No data available.
9.15	Vapor Density (air=1):	No data available .
9.16	Viscosity:	No data available
9.17	Molecular Weight:	No data available.
9.18	Flammability:	No data available.
9.19	Autoignition temperature:	No data available .
9.20	Decomposition temperature:	No data available
9.21	Lower Flammability Limit:	No data available .
9.22	Upper Flammability Limit:	No data available.
9.23	Other Information :	No additional information available

10. STABILITY AND REACTIVITY

- 10.1 Chemical Stability:** Stable under recommended storage conditions.
- 10.2 Reactivity**
- Conditions to Avoid:** None.
- Materials to Avoid:** Avoid contact / mix with strong oxidising agents.
- Hazardous Decomposition**
- Products:** Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide.
Metal oxides. Formaldehyde.
- Hazardous Polymerization:** Non under normal processing

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Components	LD50 Oral (Rat)	LD50 Dermal	LC50 Inhalation
Silica powder 7440-21-3	3160 mg/kg	Not listed	Not listed
Polysiloxane 63148-62-9	>17000mg/kg	>2000mg/kg	Not listed
Silicon Carbide 409-21-2	No toxicity	No toxicity	No toxicity
Zinc Oxide 1314-13-2	>5000mg/kg	>2000mg/kg 24hr	>5.7 mg/L 4h
Aluminum Oxide 1344-28-1	>5000mg/kg		>2.3mg/L 4h
Magnesium Oxide 1309-48-4	3990mg/kg		

11.1 Possible Health Effects:

Eyes: Direct contact may cause mild irritation. Rinse cautiously with water

Skin: No significant irritation expected from a single short-term

exposure. **Inhalation:** No significant effects expected from a single short-term exposure.

Ingestion: Ingestion big volume may hazard, need ask for a medial help.

11.2 Sensitizing Effects: None known.

11.3 Mutagenic Effects: None known.

11.4 Reproductive Effects: None known.

11.5 Carcinogenic Effects: None known.

11.6 Other Health Hazard Information: Inhalation of fumes may result in metal fume fever, a flu-like illness with symptoms of metallic taste, fever and chills, aches, chest tightness, and cough.

The above listed potential effects of overexposure are based on actual data, the results of studies performed upon similar compositions, component data, and/or expert review of the products.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Ecology – General, Not classified.

12.2 Environmental Effects:

Toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. However, due to the physical form and water-insolubility of the product the bioavailability is negligible.

12.3 Fate and Effects in Waste Water Treatment Plants:

No adverse effects on bacteria are predicted.

13. DISPOSAL CONSIDERATIONS

13.1 Product Disposal: This material must be disposed of as hazardous waste.

13.2 Packaging Disposal: Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

With regard to transport , the following regulations are cited and considered :

- The International Civil Aviation Organization (ICAO) Technical Instructions(2019-2020 Edition) ,
- The International Air Transport Association(IATA) Dangerous Goods Regulations (63rd Edition,2020)
- The International Maritime Dangerous Goods(IMDG) Code 42-20 (2020 Edition)

Our products are properly classified, described, packaged, marked, and labeled ,and are in proper condition for transportation according to all the applicable international and national governmental regulations, not limited to the above mentioned . We further certify that the enclosed products have been tested and fulfilled the requirements and

conditions in SGS and RoHS that can be treated as "**Non-Dangerous Goods**"

15. REGULATORY INFORMATION

15.1 Applicable Laws:

Provisions of the Regulations for the Safe Handling of Chemicals in the Workplace, particularly those relating to the safe use, production, storage and transportation of dangerous chemicals. The Regulations for Safe Management of Dangerous Chemicals (promulgated by the PRC Government on 1-2-2002.) Code of Practice for Safe Management of Dangerous Chemicals (Ministry of Labor, No.677-1992).

15.2 Chemical Inventories:

IECSC:	All ingredients listed or exempt.
EINECS:	Not determined.
MITI:	Consult New GreenPower
KECL:	One or more ingredients are not listed or exempt or identified.
PICCS:	One or more ingredients are not listed or exempt.
TSCA:	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
AICS:	One or more ingredients are not listed or exempt.

16. OTHER INFORMATION

Contact Point: Technical Information Center 1-800-265-1844

Prepared by: StarTech.com

This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

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