

New GreenPower Inc.

Material Safety Data Sheet

CM_GR005-1X5B THERMAL GREASE

SILV5-THERMAL-PASTE

1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1 Product	SILV5-THERMAL-PASTE
1.2 Chemical	Heatsink
1.3 Dangerous Goods	Not

1.4 Company Details:

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. COMPOSITION / INFORMATION ON INGREDIENTS

2.	Chemical	Mixture
1	characterization:Physical	Grease
2.	Form:	gray
2	Color:	Electronics/Microelectronics
2.	Use:	application
3	Hazardous Ingredients*:	

<u>Chemical Name</u>	<u>CAS No.</u>	<u>% (w/w)</u>	<u>Symbols & Health Risk Phrases</u>
Treated filler	-	10 - <30	Non-Dangerous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2. *According to European Commission Directive 1999/45/EC (Article 3
[3])Ingredient :

<u>Chemical Name</u>	<u>% (w/w)</u>	<u>CAS No.</u>
Silicone compounds30%	Silica power<15%	7440-21-3
	Polysiloxane <15%	63148-62-9
Carbon compounds20%	Silicon Carbide<10%	409-21-2
Metal compounds50%	Zinc Oxide <10%	1314-13-2
	Aluminum oxide<36%	1344-28-1
	Magnesium oxide<14%	1309-48-4

3. HAZARDS IDENTIFICATION

3.1 Overall Hazard

Classification: Non-Dangerous for the environment.

3.2 Hazard Information: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Avoid contact with skin and eyes.
In case of fire and/or explosion do not breathe fumes.
Use appropriate container to avoid environmental contamination.
This material and its container must be disposed of as hazardous waste. Skin Contact and Accidental Ingestion.

3.3 Route of Exposure: Direct contact may cause mild irritation.
No significant irritation expected from a single short-term exposure. No significant effects expected from a single short-term exposure. Low ingestion hazard in normal use.

3.4 Possible Health Effects: Acute

Eyes: Repeated or prolonged exposure may cause irritation. No known applicable information.

Skin: Repeated ingestion or swallowing large amounts may injure internally.

Inhalation
:
Ingestion: No significant adverse effects from a single exposure expected from

Chronic

Skin:

Inhalation
:
Ingestion:

4. FIRST AID MEASURES

4.1	Eyes:	Immediately flush with water for 15
4.2	Skin:	minutes.No first aid should be needed.
4.3	Inhalation:	No first aid should be
4.4	Ingestion:	needed.Get medical
4.5	Comments:	attention.
4.6	Note to	Treat according to person's condition and specifics of exposure. Treat symptomatically. For further information, the medical practitioner should

5. FIRE FIGHTING MEASURES

5.	Flammability:	Non-flammable.
1	Flash Point:	305 °C (Seta Closed
5.	Autoignition	Cup)Not determined.
2	temperature: Lower	Not
5.	Flammability Limit:	determined.
3	Upper Flammability	Not
5.	Extinguishing	On large fires use dry chemical, foam or water spray. On small fires use carbon
4		dioxide (CO2), dry chemical or water spray. Water can be used to cool fire
5.8	Special Fire	exposed containers. Determine the need to evacuate or isolate the area according
	Fighting	to your local emergency plan.Use water spray to keep fire exposed containers
	Procedures and	cool. Self-contained breathing apparatus
5.9	Hazardous Combustion	Carbon oxides and traces of incompletely burned carbon compounds. Silicon
		dioxide.
	Products:	Metal oxides. Formaldehyde.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal Precautions:** Avoid eye contact. Do not take internally.
- 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 absorbent or cleaning materials appropriately, since spontaneous heating may occur. Laws and regulations may apply to releases and disposal of this material, as well as those

7. HANDLING AND STORAGE

- 7.1 Handling** Use with adequate ventilation. Avoid eye contact. Do not take internally. Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.
- 7.2 Storage Conditions:**
- Unsuitable** None

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Industrial Hygiene Standards:

<u>Ingredients</u>	<u>CAS No.</u>	<u>Exposure Limits</u>
Treated filler	-	Observe zinc oxide limits. OSHA PEL (final rule): TWA 15 mg/m ³ Total dust, 5 mg/m ³ respirable fraction. ACGIH TLV: TWA 10 mg/m ³ total dust.

8.2 Engineering Controls

- Local Ventilation:** None should be needed.
- General Ventilation:** Recommended.

8.3 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.
- Skin protection:** Washing at mealtime and end of shift is adequate.
- Hygiene Measures:** Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.

8.4 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:	Gray
9.3	Odor:	Odorless
9.4	pH:	Not determined.
9.5	Solubility in Water:	Not determined.
9.6	Boiling Point:	Not determined.
9.7	Melting Point:	Not determined.
9.8	Flash Point:	305 °C (Seta Closed Cup)
9.9	Autoignition temperature:	Not determined.
9.10	Explosive properties:	No
9.11	Oxidizing properties:	No
9.12	Vapor Pressure @ 25°C:	Not determined.
9.13	Specific Gravity:	2.0
9.14	Octanol /water partition coefficient:	Not determined.
9.15	Vapor Density (air=1):	Not determined.
9.16	Viscosity:	Not determined.
9.17	Molecular Weight:	Not determined.

10. STABILITY AND REACTIVITY

10.1	Stability:	Stable.
10.2	Reactivity	
	Conditions to Avoid:	None.
	Materials to Avoid:	Can react with strong oxidising agents.
	Hazardous Decomposition	
	Products:	Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Metal oxides. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

11.1	Possible Health Effects:	Refer to Section 3.4
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	Inhalation of fumes may result in metal fume fever, a flu-like illness with symptoms

The above listed potential effects of overexposure are based on actual data, the results of studies performed upon similar

12. ECOLOGICAL INFORMATION

12.1 Environmental Fate and Distribution:

Solid material, insoluble in water.

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(2017-2018 Edition) ,
- The International Air Transport Association(IATA) Dangerous Goods Regulations (58th Edition,2018)
- The International Maritime Dangerous Goods(IMDG) Code (2018 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 theabove mentioned . We further certify that the enclosed products have been tested and fulfilled the requirements and

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 Halnziye
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.
CAS No:	Silicone compounds 30%(Silica power<30 CAS 7440-21-3), Carbon compounds20% (Silicon Carbide<20% CAS:409-21-2) Metal compounds50% (Aluminum oxide 20% CAS 1344-28-1 Magnesium oxide <30 CAS 1309-48-4)

16. OTHER INFORMATION

Contact Point: Technical Information Center (0755)28772795

Prepared by: NEW GREENPOWER INC.

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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