

ZODIAC 3D GmbH

Material Safety Data Sheet

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Revision Date:2021.1.5


ZODIAC THERMAL GREASE

1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1 Product Name:	ZODIAC THERMAL GREASE		
1.2 Chemical Classification:	non-dangerous chemical goods		
1.3 Dangerous Goods Classification:	Not applicable.		
1.4 Company Details:			
Manufactured in:	Made in China		
Telephone Number:	+43677 626 43349	Email:	support@zodiac3d.com
Contact Person:	Quality	dept	

2. COMPOSITION / INFORMATION ON INGREDIENTS

2.1 Chemical characterization:	Mixture
2.2 Physical Form:	Grease
2.3 Color:	Grey
2.4 Use:	Electronics/Microelectronics application
2.5 Ingredients*:	

<u>Chemical Name</u>	<u>CAS No.</u>	<u>% (w/w)</u>	<u>Symbols & Health Risk Phrases</u>
Magnesium oxide	1309-48-4	>25	
Poly(dimethylsiloxane)	63148-62-9	<20	
Magnesium acetylide	12122-46-2	<25	H-phrases:H302 Harmful if swallowed
Aluminum oxide	1344-28-1	>30	P-phrases: P102 Keep out of reach of children

*Label elements according to Regulation(EC)No.1272/2008(substances) / Directive 1999/45/EC(mixtures)

3. HAZARDS IDENTIFICATION

3.1 Overall Hazard Classification:	Direct 67/548/EEC or Directive 1999/45/EC R22, Dangerous if swallowed
3.2 Hazard Information:	Classification according to Regulation (EC) No 1272/2008, Annex VII (materials)Not determined 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.
3.3 Route of Exposure:	Skin Contact and Accidental Ingestion.

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3.4 Possible Health Effects:

Acute

- Eyes:** Direct contact may cause mild irritation.
- 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.

Chronic

- Skin:** Repeated or prolonged exposure may cause irritation.
- Inhalation:** No known applicable information.
- Ingestion:** Repeated ingestion or swallowing large amounts may injure internally.

3.5 Signs and Symptoms of

- Overexposure:** No significant adverse effects from a single exposure expected from normal use.

4. FIRST AID MEASURES

- 4.1 Eyes:** Immediately flush with water for 15 minutes.
- 4.2 Skin:** No first aid should be needed.
- 4.3 Inhalation:** No first aid should be needed.
- 4.4 Ingestion:** Get medical attention.
- 4.5 Comments:** Treat according to person's condition and specifics of exposure.
- 4.6 Note to physicians:** Treat symptomatically. For further information, the medical practitioner should contact Zodiac 3D GmbH

5. FIRE FIGHTING MEASURES

- 5.1 Flammability:** Non-flammable.
- 5.2 Flash Point:** 305 °C (Seta Closed Cup)
- 5.3 Auto-ignition temperature:** Not determined.
- 5.4 Lower Flammability Limit:** Not determined.
- 5.5 Upper Flammability Limit:** Not determined.
- 5.6 Hazardous Properties:** None.
- 5.7 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.
- 5.8 Special Fire Fighting Procedures and Equipment:** Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool. Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals.
- 5.9 Hazardous Combustion Products:** Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Metal oxides. Formaldehyde.
- 5.10 Unsuitable Extinguishing Media:** None established.

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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 diked 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 absorbant 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 materials and items employed in the cleanup of releases. You will need to determine which laws and regulations are applicable.

7. HANDLING AND STORAGE

- 7.1 Handling Precautions:** 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:** Use reasonable care and store away from oxidizing materials.
- 7.3 Unsuitable Packaging Materials:** None established.

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.

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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: Grey
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 Auto-ignition 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: 3.15g/cm³
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 Re-activity
Conditions to Avoid: None.

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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.
Hazardous Polymerization:	Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: Based on available data, the classification criteria are not met.

LD/LC50 values relevant for classification: Not available

- 11.1 Possible Health Effects:** Refer to Section 3.4
- 11.2 Sensitizing Effects:** Based on available data, the classification criteria are not met.
- 11.3 Mutagenic Effects:** Based on available data, the classification criteria are not met.
- 11.4 Reproductive Effects:** Based on available data, the classification criteria are not met.
- 11.5 Carcinogenic Effects:** Based on available data, the classification criteria are not met.
- 11.6 Other Health Hazard** Based on available data, the classification criteria are not met.

Information:

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 Environmental Fate and Distribution:

Solid material, insoluble in water.

12.2 Environmental Effects:

Label is not required for containers smaller than 5kg/5L

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.

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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 (62nd Edition,2021)
- 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 the above mentioned . We further certify that the enclosed products have been tested and fulfilled the requirements and conditions in CE and RoHS that can be treated as "Non-Dangerous Goods"

15. LEGISLATION

15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture:

Regulation (EC) No 2037/2000 (substances that deplete the ozone layer): Not applicable

Regulation (EC) No 850/2004 (Persistent Organic Pollutants): Not applicable

Regulation (EC) No 689/2008 (Export and import of dangerous chemicals): Not applicable

Regulation (EC) No 648/2004 (the Detergents): Not applicable

Restrictions under Title VIII of Regulation (EC) 1907/2006: Not available

16. OTHER INFORMATION

Contact Point: Technical Information support@zodiac3d.com

Prepared by: ZODIAC 3D GmbH

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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