



MATERIAL SAFETY DATA SHEET

Per: CE Directive 1999/45/EC (Article 3-3)

Section I: Chemical Product & Company Identification

Product names (as used on labels and list): Thermal Grease
Product description: Heat sink compound
Manufacturer: IC Intracom Asia Co., Ltd. • Far Eastern Technology Center
7-F No. 125, Section 2 • Da Tong Road, Shijr
Taipei, Taiwan
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Section II: Composition / Information on Ingredients

Chemical characterization: Mixture
Physical form: Grease
Color: Silver
Use: Electronics/Microelectronics application
Hazardous ingredients: Treated filler
CAS no.: na
% (w/w) 10 - <30.
Dangerous for the environment. Very toxic to aquatic organisms;
may cause long-term adverse effects in the aquatic environment.

Section III: Hazards Identification

Overall hazard classification: Dangerous for the environment.
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.
Route of exposure: Skin contact and accidental ingestion.

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.
Possible health effects, chronic:	
Skin:	Repeated or prolonged exposure may cause irritation.
Inhalation:	No known applicable information.
Ingestion:	Repeated ingestion or swallowing large amounts may injure internally.
Signs and symptoms of overexposure:	No significant adverse effects from a single exposure expected from normal use.

Section IV: First Aid Measures

Eyes:	Immediately flush with water for 15 minutes.
Skin:	No first aid should be needed.
Inhalation:	No first aid should be needed.
Ingestion:	Get medical attention.
Comments:	Treat according to person's condition and specifics of exposure.
Note to physicians:	Treat symptomatically.

Section V: Firefighting Measures

Flammability:	Non-flammable.
Flash point:	305 °C (Seta Closed Cup)
Auto-ignition temperature:	Not determined.
Lower flammability limit:	Not determined.
Upper flammability limit:	Not determined.
Hazardous properties:	None.
Extinguishing media:	On large fires, use dry chemical, foam or water spray. On small fires, use carbon dioxide (CO ₂), dry chemical or water spray. Water can be used to cool fire exposed containers.
Special firefighting 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.
Hazardous combustion products:	Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Metal oxides. Formaldehyde.
Unsuitable extinguishing media:	None established.

Section VI: Accidental Release Measures

Personal precautions:	Avoid eye contact. Do not take internally.
Environment precautions:	Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.
Cleanup method:	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.

Section VII: Handling & Storage

Handling precautions:	Use with adequate ventilation. Avoid eye contact. Do not take internally. Exercise good industrial hygiene practices. Wash after handling, especially before eating, drinking or smoking.
Storage:	Use reasonable care and store away from oxidizing materials.
Unsuitable packaging materials:	None established.

Section VIII: Exposure Controls & Personal Protection

Industrial hygiene standards:	
Ingredients:	Treated filler.
CAS no.:	n/a
Exposure limits:	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.
Engineering controls:	
Local ventilation:	None should be needed.
General ventilation:	Recommended.
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 practices. Wash after handling, especially before eating, drinking or smoking.
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.

Section IX: Physical & Chemical Properties

Physical form:	Grease.
Color:	Silver.
Odor:	Odorless.
pH:	Not determined.
Solubility in water:	Not determined.
Boiling point:	Not determined.
Melting point:	Not determined.
Flash point:	305°C (Seta Closed Cup).
Auto-ignition temperature:	Not determined.
Explosive properties:	No.
Oxidizing properties:	No.
Vapor pressure @ 25°C:	Not determined.
Specific gravity:	1.4 – 1.7
Octanol/water partition coefficient:	Not determined.
Vapor density (air=1):	Not determined.
Viscosity:	Not determined.
Molecular weight:	Not determined.

Section X: Stability & Reactivity

Stability:	Stable.
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.
Hazardous polymerization:	Hazardous polymerization will not occur.

Section XI: Toxicological Information

Possible health effects:	Refer to Section 3.4.
Sensitizing effects:	None known.
Mutagenic effects:	None known.
Reproductive effects:	None known.
Carcinogenic effects:	None known.
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.

Section XII: Ecological Information

Environmental fate and distribution:	Solid material, insoluble in water.
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.
Fate and effects in waste water treatment plants:	No adverse effects on bacteria are predicted.

Section XIII: Disposal Considerations

Product disposal:	This material must be disposed of as hazardous waste.
Packaging disposal:	Dispose of in accordance with local regulations.

Section XIV: Transport Information

Road and rail transport:	Not applicable.
Sea transport (IMDG):	Not subject to IMDG code.
Air transport (IATA):	Not subject to IATA regulations.

Section XV: Regulatory Information

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).
Chemical inventories:	
IECSC:	All ingredients listed or exempt.
EINECS:	Not determined.
MITI:	Consult Balancestars.
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.

Section XVI: Other Information

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.

