

Water-Washable, Non-Silicone, Thermally Conductive Grease Compound for thermal Coupling of Electronic Chips and Heat sink in Electronic Modules

TECHNICAL PRODUCT BULLETIN



- **Thermally Conductive Heat Sink Grease compound**
- **Water-Cleanable**
- **Non-Silicone**
- **Meets MIL-DTL-47113D**
- **RoHS Compliant**

GENERAL DESCRIPTION

ALFA TG7030NS is a non-silicone, heat-sink, solvent free, one component, water cleanable, non-dripping thermally conductive grease. TG7030NS is used to reduce thermal impedance of the air gap present between the mating surfaces of a semi-conductor and heat sink. It is also used in automotive temperature sensing devices.

TG7030NS was developed to replace all general-purpose silicone and non-silicone thermal greases. With its outstanding thermal properties, TG7030NS has four times the conductivity of standard thermal greases and will spread into a thin bond line for extremely low thermal resistance.

While most silicone greases have generally functioned well, they still have not been without disadvantage. A commonly known problem is that silicone greases contaminate equipment, work stations, and users clothing. Contamination is further worsened by the fact that many commercially available silicone based greases cannot be washed or removed except using flammable aliphatic and aromatic hydrocarbons. The removal of some of the commercially available silicone based-thermal greases requires the use of hot polyhalogenated hydrocarbon solvents.

Unlike other commercially available silicone based-thermal greases on the market, TG7030NS can be washed with water only and exhibits all the requisite functional characteristics of thermal coupling applications in electronic devices. TG7030NS can be removed advantageously from component surfaces and other surfaces contaminated with the grease by use of aqueous solutions, thereby eliminating a need for halogenated hydrocarbon solvent usage in electronic device manufacture and rework operations.

TYPICAL PROPERTIES AND CHEMICAL CHARACTERISTICS

Color	Opaque White
Specific Gravity, 25°C, gm/cc	2.98 @ 60°F (24.3 lbs/gallon)
Viscosity @ RT	Grease, non-dripping
Shelf Life @ RT	5 Years (See Storage and Handling)
Evaporation	0.6% after 24 hours at 200°C
Bleed	0.09 % after 24 hours at 200 °C
Volume Resistivity, ohm-cm (ASTM D257)	2.3x10 ¹²
Thermal Properties	
Thermal Conductivity, W/m-K	>4.0
Operating Temperature Range, °C	-40 to 205

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The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purposes under their own operation conditions. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention governed by any patent, without the authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

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POTENTIAL USES

- Effective thermal coupler for any heat sink device, CPU to heat sink
- Automotive temperature-sensing devices
- Temperature sensors
- Applied to the base and mounting studs of transistor, diodes and silicone controlled rectifiers
- Power transistors
- Diodes, semiconductors
- Thermal Joints
- For any device where efficient cooling is required
- Potting
- TEC Modules
- Hardware
- Telecommunications
- Right product for thermal management
- High-voltage corona suppressant in connectors for fly back transferors located in TV sets.
- Silicone Control rectifiers

STORAGE HANDLING & SHELF LIFE

TG7030NS has a shelf life of 5 years at room temperature (76°F) in an unopened container, settlings may occur during long term storage, it is recommended to re-mix the filler by hand or mechanical mixing. Keep container tightly closed store in cool area away from ignition sources and oxidizers, no special precautions need to be taken if product is handled according to directions. Shelf life is indicated on the product label, any special storage and handling instructions will be printed on the product container label.

CLEAN UP AND DISPOSAL

TG7030NS can be removed by using warm water. Wipe to dry with Alcohol. Dispose of in accordance with local, state and federal regulations for hazardous waste.

AVAILABILITY & PACKAGING

ALFA's TG7030NS is a smooth homogenous mixture, free of lumps, coarse particles, and foreign material. There is no separation of fillers that cannot be readily re-dispersed.

FEATURES AND BENEFITS

- Non-Sag or flowing
- Water Cleanable
- Non-Hazardous polymerization
- Non-Toxic
- Non-Corrosive
- Non-Reactive
- Non-Abrasive
- Reworkable
- Easily removed
- Non-Flammable
- Easy to apply via dispensing or screen printing
- Low surface tension that enables it to wet most surfaces, which can lower the thermal contact resistance between the substrate and material.
- Excellent Dielectric properties
- Soft, grease-like consistency
- Thixotropic behavior

APPLICATION METHODS

Automated or manual dispensing

USAGE INSTRUCTIONS

For industrial use only Read SDS carefully prior to use.

Limitations

TG7030NS is neither tested nor represented as suitable for medical or pharmaceutical use.

ENVIRONMENTAL IMPACT DATA

ODP	None	VOC	None
HCFC	None	HFC	None

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