



# TC-350

## High Thermal Conductivity Silicone Grease Compound

### Description:

Thermoset TC-350 is a microelectronics-grade, silicone-based, grease compound. It offers high thermal conductivity, high temperature resistance and easy dispensability. TC-350 has been designed for use in applications with high wattage devices and where the device may later need to be easily removed. It can be used with a variety of emerging and standard devices including microprocessors, DSPs, graphic accelerators, etc. packaged in Flip Chip, PPGA, BGA, MicroBGA and other package types.

Other typical device applications include multi-chip modules, power transistors, diodes, silicon-controlled rectifiers, mechanically attached substrates to housings, and various other mechanically attached thermal transfer applications. In these situations, a small amount of thermally conductive grease is applied to either the substrate/heat sink or the device. The thixotropic characteristics of TC-350 will usually hold the device in place until it is mechanically attached.

Thermoset TC-350 is easily removed with isopropyl alcohol or acetone. This prevents having to use a solvent that may be toxic or contain chlorinated/fluorinated compounds.

### Key Features and Benefits:

- + High Thermal Conductivity
- + Thin Bondlines of 2-4 mils
- + Easy to Apply by Dispensing or Printing
- + Reworkable/Easy to Remove
- + Low Bleed
- + Ambient Storage

### Typical Properties:

<b>Viscosity @ 25° C (cps)</b>	
@ 1 RPM	250,000
@ 10 RPM	50,000
<b>Brookfield, CP52</b>	
<b>Specific Gravity</b>	2.75
<b>ASTM D 1505</b>	
<b>Color</b>	Gray
<b>Shelf Life @ 5° C (months)</b>	6
<b>Thixotropic Index</b>	5.0
<b>Thermal Conductivity</b>	4.00 W/mK
Mathis Hot Disk Analyzer	

### Clean-Up:

It is recommended that customers use disposable containers and utensils whenever possible to simplify clean-up. However, when disposable materials are impractical, TC-350 can be removed by cleaning equipment with a solvent such as isopropyl alcohol. Observe appropriate precautions when using flammable solvents. Solvent-cleaned utensils should be thoroughly dried before reuse. Any remaining solvent can contaminate TC-350 during the next application or use.

### Shelf Life and Storage:

TC-350 has a shelf life of six months at 5°C. TC-350 should be stored at 5°C to retain optimal properties.

### Handling Precautions:

The labels on containers of Thermoset materials contain current information on the hazards associated with each particular product. Most resins and hardeners are skin and eye irritants, and some may actually be corrosive to the skin and eyes. Other problems, such as skin sensitization or serious health hazards may exist. Further information on each product is contained in the Material Safety Data Sheet, which will be sent upon request.

### Shipping and Unpacking Procedure:

This material is packed and shipped in Johnny Blue Ice at approximately 5°C to protect it from thermal excursions during shipment. The substantially engineered system of an insulated container and packing material is designed to protect the material for up to 6 days in transit (international) and up to 48 hours in transit (domestic). It is critical that the shipping container is not opened in transit and that the shipment be expedited during transit to its final destination. **DO NOT ALLOW THE SHIPMENT TO BE LEFT ON LOADING DOCKS, IN CUSTOMS WAREHOUSES, OR ON FREIGHT TRUCKS FOR LONG TIME PERIODS.**

Maintaining temperature at or below 5°C, but not less than 0°C, upon receipt is critical to maintain the functionality and performance of the material. Failure to maintain temperature at 0°C to 5°C, unless otherwise stated on the technical data sheet, will void any warranties and may adversely affect performance.

Upon receipt, the syringes must be transferred from the shipping container to a suitable storage environment.

# THERMOSET TC-350

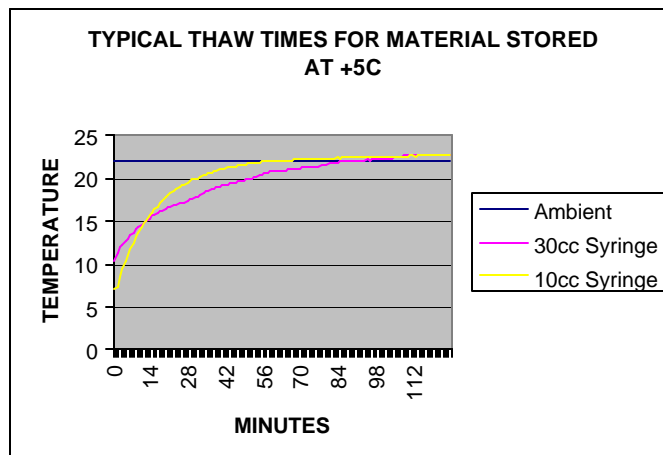
**NOTE: Please refer to this technical data sheet for alternative storage condition recommendations.**

## Storage and Thaw Procedure:

**ALL SYRINGES MUST BE STORED AS RECOMMENDED (TYPICALLY 0°C TO 5°C) IN AN UPRIGHT (VERTICAL) POSITION WITH THE SYRINGE TIP FACING DOWN. DO NOT LAY SYRINGES ON THEIR SIDES (HORIZONTALLY) UNDER ANY CIRCUMSTANCES.**

Prior to application, the material must be allowed to thaw naturally to room temperature (ideally 20-25°C) by placing the syringes in a vertical position with dispense tip facing downward in an ambient environment. This is a critical step for obtaining optimum dispensing performance.

Under no circumstance should artificial heat sources be used to increase thaw speed. Do not place the syringes in warm water or near any heat source including ovens, hot plates, hot air guns, etc. Thaw time varies by package style and size and is typically 45 to 75 minutes based on ambient temperature. Please refer to the adjacent chart.



Do not use the syringes before contents reach ambient temperature. Wipe all excess moisture from the syringes prior to use. A small amount of air in the tip-cap area is normal. Carefully remove the tip cover and manually extrude a small amount of material displacing any air that may be in the tip – cap interface. Mount the syringe onto the dispense equipment that has been thoroughly cleaned and purge material through the system until an unbroken flow of material is extruded. The system is now ready to begin dispensing.

Once thawed to room temperature, the syringes must be consumed within the allotted working life specified then discarded. Under no circumstances should the material be refrozen for reuse or consumed after the working life has expired.

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**IMPORTANT NOTICE TO PURCHASERS:** Only those properties identified as "specifications" on Thermoset technical bulletins are tested by Thermoset's Quality Control Department prior to shipment. The results of these tests must conform to those "specifications". Other properties are "typical". Tests are not run on the "typical properties" of every batch produced. "Typical property" data is not intended for specification purposes and Thermoset assumes no responsibility and makes no warranty with respect to it. If any property, other than those designated as Thermoset "specifications", is important to the purchaser, information as to such property will be supplied only upon the basis of test procedures agreed upon between Thermoset and the purchaser prior to the acceptance of the purchaser order.

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