Product Information

DOWSIL™ TC-2022 Thermally Conductive Adhesive

A One-part Thermally Conductive Heat Cure Adhesive Whose Heat Cure Rate Is Rapidly Accelerated with Heat

Features and Benefits

- Primerless adhesion to a variety of substrates
- Heat curable at moderate temperatures (100°C)
- Good thermal conductivity values (1.7W/mK)
- No added solvents
- No mixing of separate components required
- Improved cost effectiveness with rapid/low temperature cure
- Heat flow away from PCB module components can increase reliability

Applications

Suitable for:

- Bonding integrated circuit substrates
- Heat sink attach, automated or manual dispensing
- Engine, power and transmission control units
- Sensors

Assembly of components in transportation PCB systems modules can be very challenging and requires adhesive materials that serve multiple design needs. DOWSIL™ TC-2022 Thermally Conductive Adhesive was designed as a companion product to DOWSIL™ EA-7100 Adhesive.

There are many applications such as engine control units, power control units, transmission control unit and sensors that require not only adhesive materials for their assembly, but an added benefit may be found in a thermally conductive adhesive for some of those PCB systems components requiring heat dissipation.

Thermal Radical Cure for Transportation PCB (System) Assembly

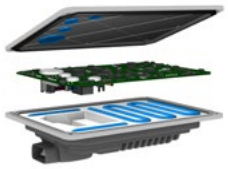
Key TRC Product:

DOWSIL™ EA-7100 Adhesive

Companion Product:

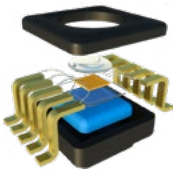
DOWSIL™ TC-2022 Thermally Conductive Adhesive (with 7 mil beads)

DOWSIL™ TC-2022 Thermally Conductive Adhesive is a thermally conductive adhesive supplied as a one part product for manufacturing ease of use. It can be cured in 15 minutes at 100°C. This is also the optimal cure profile of DOWSIL™ EA-7100 Adhesive and this enables designers to use both products together on and around different parts of the printed circuit board using the same cure time and approach, but allows the flexibility of using the thermally conductive material (DOWSIL™ TC-2022 Thermally Conductive Adhesive) only where is it needed for heat dissipation purposes.



Engine Control Units

Power Control Units



Sensors

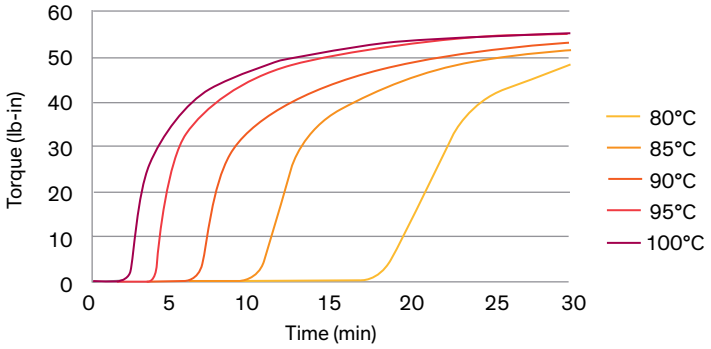
Transmission Control Units

Lighting Modules

Imagine

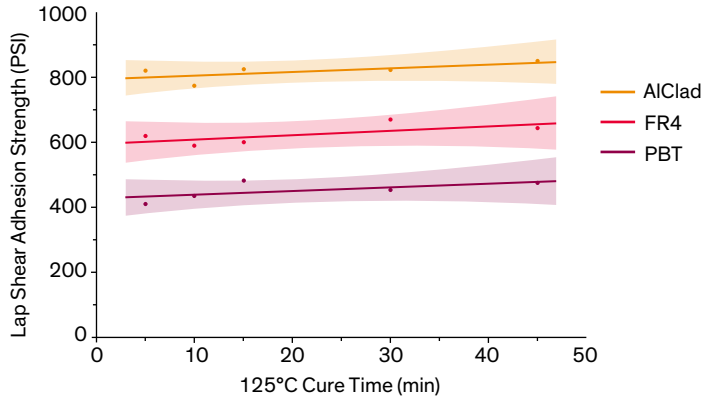
DOWSIL™ TC-2022 Thermally Conductive Adhesive vs. Temprature by Moving Die Rheometer (MDR)

(batch 2703-137)



Cure profiles as exhibited by moving die rheometer, cross-linking (cure) reaction time is accelerated by temperature demonstrating the reaction kinetics of this chemistry mechanism.

Lap Shear Adhesion Strength (PSI) vs. 125°C Cure Time (min.)



DOWSIL™ TC-2022 Thermally Conductive Adhesive maintains strong adhesion properties to a variety of substrates at specific cure time temperatures.

There is no pre-treatment of surfaces required for this material, and in addition to the thermally conductive benefit, you also get the strong adhesion properties across a wide range of substrates, including:

- AlClad
- FR4
- PBT

In summary, DOWSIL™ TC-2022 Thermally Conductive Adhesive:

- An innovative silicone adhesive that also provides thermal conductivity and primerless adhesion
- Enables co-cure with Thermal Radical Cure Adhesives such as DOWSIL™ EA-7100 Adhesive (process simplification)
- Provides low temperature cure for temperature-sensitive components
- Reduces mechanical clamping

Learn More

We bring more than just an industry-leading portfolio of advanced silicone-based materials. As your dedicated innovation leader, we bring proven process and application expertise, a network of technical experts, a reliable global supply base and world-class customer service.

To find out how we can support your applications, visit **consumer.dow.com/pcb**.

Images: dow_40422824609, dow_40458255482, dow_40458255682, dow_40609150573, dow_40609992300

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