

**NovaTherm™ 600 Series 600-307
2 Part Thermal Interface Material
Specification Data**



DESCRIPTION

NovaTherm 600 Series 600-307 is a two-component, addition cure silicone rubber designed for thermally conductive applications. NovaTherm 600-307 cures with heat to form an elastic, thermally conductive rubber which adheres well to various types of materials such as metals, plastic, glass, and ceramics without use of primers.

APPLICATIONS

- EV – Automotive battery modules
- Power Systems – IGBT & power supplies
- Servers – ASCIS, DSP, microprocessor with heat sinks or cold plates
- LED Lighting - Panels & modules
- Telecommunications
- Solar - Junction boxes & AC/DC converters

FEATURES & BENEFITS

- Convenient 1:1 mix ratio by weight
- Heat accelerated cure
- Excellent primerless adhesion to multiple surfaces like metal, glass, plastics, etc
- Vibration dampening and shock absorption
- Great wetting capability
- Customizable Tc (> 5W/mK), viscosity, hardness, cure mechanism, and adhesion

INSTRUCTIONS

This material is shipped in separate containers labeled Part A and Part B. While the material may be mixed by hand, it is more appropriate to use automated meter-mixing equipment as the work life is short and the ultimate cure time is exceedingly fast. The compound is designed with a 1:1 volume:volume mix ratio. Automated mixing equipment eliminates the need for a deaeration cycle. If mixing by hand, weigh equal parts of parts A and B into an appropriately sized mixing vessel and mix thoroughly.

PRODUCT SPECIFICATIONS

| Physical Property | Test Method | Performance Range |
|--------------------------------------|-------------|-------------------|
| Format (One or Two Part) | | Two Part |
| Form | | Flowable |
| Cure Chemistry | | Addition Cure |
| Appearance – Part A | Visual | White |
| Appearance – Part B | Visual | Green-Yellow |
| Thixotropy | | NA |
| Mixed Specific Gravity (g/cc) | | 1.88 |
| Viscosity – Part A (cPs) | | 5,300 |
| Viscosity – Part B (cPs) | | 5,000 |
| Mixed Viscosity (cPs) | | 5,150 |
| Density at 25°C (g/cm ³) | ASTM D792 | 1.88 |
| Mixed Ratio | | 1:1 |
| Cure Time @ 25°C (hours) | | >1 hour |
| Working Life (Pot Life) (minutes) | | >1 hour |

TYPICAL CURED PROPERTIES*

| Physical Property | Test Method | Typical Value |
|--|--------------|-------------------------|
| Durometer Hardness (Shore A) | ASTM D2240 | 5 |
| Appearance (Mixed) | Visual | Lime Green |
| Adhesive Strength (Aluminum Lap Shear) (MPa) | ASTM D3163 | 15 |
| Dielectric Strength (kV/mm) | ASTM D149 | 10.02 |
| Dielectric Constant @ 100Hz | ASTM D150 | 1.05 |
| Dissipation Factor @ 100Hz | ASTM D150 | 0.000876 |
| Thermal Conductivity (Tc) (W/mK) | ASTM D5470 | 0.75 |
| Volume Resistivity @ 100V (Ohms-cm) | ASTM D257-14 | 1.60 x 10 ¹⁰ |
| Flammability (UL-94) | | Yes |

* The values outlined reflect testing that was conducted under laboratory conditions, actual results may vary.

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PROCESSING RECOMMENDATIONS:

COMPATIBILITY

NovaTherm 600-307 will cure in contact with most clean, dry surfaces. However, certain materials, such as butyl and chlorinated rubber, sulfur containing materials, amines, and certain metal soap cured RTV silicone rubber compounds can cause inhibition. Cure inhibition is characterized by a lack of cure of the product at the interface of the silicone rubber and the substrate.

It is recommend that a sample patch test be performed with NovaTherm 600-307 to determine if a barrier coating or other inhibition preventing measures are necessary before pouring the product.

MIXING

Remixing Part A and Part B separately is essential if it is observed that the filler is settling prior to 1:1 mixing for your intended application. Please contact your sales representative with specific questions.

CUSTOMIZATION

In addition to the current formulations offered Novagard has the technical expertise in-house to make necessary modifications to the chemical properties and bridge the gap for a specific application. No two applications are the same and, as such, Novagard is capable of making the necessary customization listed below for an optimal solution.

Uncured:

- Viscosity
- Thixotropy
- Pot life
- UV tracer

Cured:

- Shore hardness
- Tensile strength
- Adhesion
- Elongation

Contact Novagard at (216) 881-8111 or products@novagard.com for details.

PACKAGING

Consult your Novagard representative for packaging options.

STORAGE AND SHELF LIFE

The shelf life will be indicated by the “use before date” on the associated documents for 3 - 6 months when stored in the original unopened containers at a temperature below 27°C.

PRECAUTIONS

Certain materials, chemicals, curing agents, and plasticizers may inhibit the cure. The most notable are organo-tin catalysts, amino compounds, polysulfide, and other sulfur-containing materials. Do not use in or around highly oxidative chemicals such as liquid oxygen, chlorine, or peroxides.

Consult and obey all applicable local, state, and federal regulations for disposal of solvent and silicone waste. For additional information consult product SDS.

ADDITIONAL INFORMATION

Novagard believes that the information provided is a true and accurate description of the typical characteristics of the aforementioned product; however, it is the responsibility of the individual user to thoroughly test the product in their specific application to determine performance, efficacy, and safety.