Dissipator® 746

Product Description

Hernon® Dissipator® 746 is a thermally conductive adhesive formulated for bonding electrical components to heat sinks or printed circuit boards. Fast room temperature cure combined with excellent heat dissipation for thermally sensitive components and controlled strength for service repair provide perfect replacement for tapes, epoxies, silicones, fasteners and mechanical clips.

Typical Applications

Typical applications include bonding transformers, transistors and other heat generating electronic components to printed circuit board assemblies or heat sinks.

Typical Properties (Uncured)

Property	Value
Chemical type	Modified acrylic
Appearance	White paste
Viscosity at 77ºF (25ºC), cP at 2.5 rpm at 5 rpm	 500,000 to 1,000,000 300,000 to 800,000
Specific gravity	1.64
Flash point	See SDS

Typical Properties (Cured)

Physical Properties

Property	Value
Coefficient of thermal expansion, ASTM D696 (K^{-1})	50 x 10^{-6}
Coefficient of thermal conductivity, ASTM C 177, W/(m·K)	0.92
Temperature Range, ºC (ºF)	-55 to 150 (-65 to 300)
Dielectric Constant at 1kHz	5.29
Dissipation Factor at 1kHz	0.0536

Impedence Measurements

Specimens cured at 10:1 weight ratio with **activator 15**. Mixed quickly for a few minutes and cured under compression for 24 hours at room temperature. The results are as follows:

Area: 1 sq. in. Stainless Steel electrodes	**1 kHz**	**10 kHz**	**100 Hz**	**120 Hz**
746 cured @ 2.0 mm thick	10.3 MΩ	1.06 MΩ	100 MΩ	83 MΩ
746 uncured @ 2.0 mm thick	406 kΩ	308 kΩ	416 kΩ	417 kΩ
746 cured @ 0.4 mm thick	6.2 MΩ	620 kΩ	60 mΩ	49 MΩ
746 uncured @ 0.4 mm thick	64 kΩ	51 kΩ	65kΩ	65 kΩ

Typical Curing Performance

Dissipator® 746, when used with **Hernon® Activator 63**, fixtures at room temperature in less than five minutes.

Typical Cured Performance

Cured for 24 hours @ 22ºC.
Lap-shear specimens (**Activator 63** applied to one surface), Shear Strength, ASTM D1002

Cure @ 22ºC	Substrates	N/mm² (psi)
5 min	G/B Stainless Steel	≥ 1 (≥ 145)
1 hour	G/B Steel	≥ 3.4 (≥ 500)
24 hours	G/B Steel	≥ 12.4 (≥ 1800)
24 hours	G/B Aluminum	≥ 12.4 (≥ 1800)
72 hours	G/B Steel	≥15.1 (≥2200)
72 hours	G/B Aluminum	≥13.7 (≥2000)

Typical Environmental Resistance

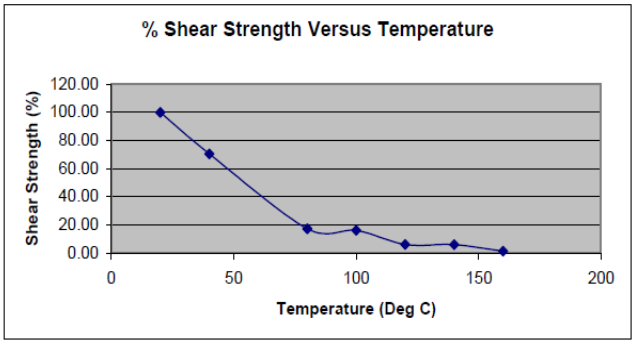
Cured for 72 hours @ 22ºC.
steel lap-shear specimens (**Activator 63** applied to one surface), Shear Strength, ASTM D1002.

Chemical/Solvent Resistance

Aged under conditions indicated for 720 hours and tested at 22ºC.

Chemical/Solvent	Temp (ºC)	% of Initial Strength
Air	87	104.4
Water	87	53.6

Hot Strength
Cured for 24 Hours at RT with **Activator 63**.
Shear strength was determined for grit-blasted steel to steel Specimens according to ASTM D1002



General Information

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Directions for use
1. For best performance bond surfaces should be clean and free from grease.
2. Use applicator to apply the activator to the surface to be bonded.
3. After the solvent evaporates, the active ingredients will appear wet, and will remain active for up to 2 hours after application. Contamination of the surface before bonding should be prevented.
4. Apply adhesive to the unactivated surface.
5. Secure the assembly and wait for the adhesive to fixture (approximately 5 minutes) before any further handling. Full cure occurs in 4 to 12 hours.
6. The amount of adhesive applied to the part or heat sink should be limited to the amount necessary to fill the bond and just enough to give a small fillet.
7. The dispensing or application of the adhesive should be done as to minimize air entrapment within the bondline.

Device Removal/Repair
Components or devices with this thermally conductive adhesive can be removed while hot using heat from a hot air jet. Bond strength decreases at approximately 65ºC to 93ºC allowing components to be removed with lower shear forces. Method of removal/repair should be specifically determined due to the variety of components or devices bonding behavior.

Storage
Dissipator® 746 should be stored in a cool, dry location in unopened containers at a temperature between 45ºF to 85ºF (7ºC to 29ºC) unless otherwise labeled. Optimal storage is at the lower half of this temperature range. To prevent contamination of unused material, do not return any material to its original container.

Dispensing Equipment
Hernon® offers a complete line of semi and fully automated dispensing equipment. Contact **Hernon® Sales** for additional information.