

Technical Data Sheet Dissipator[®] 747

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Product Description

Hernon[®] Dissipator[®] 747 is a thermally conductive room temperature cure adhesive that effectively bonds to most materials used in the electronic industry.

Dissipator[®] 747 is a paste-like adhesive with excellent heat distribution for thermally sensitive components with structural strength, to replace mechanical chips, fasteners, epoxies, silicone, tapes and other methods of securing electronic heat generators and heat sinks.

Product Benefits

- No mixing required (eliminates errors in mixing ratio)
- Room temperature cure. No heat required
- Eliminates screws and rivets for assembly
- Eliminates the air space between components
- High k factor for heat conductive application

Typical Properties (Uncured)

Property	Value
Chemical type	Modified methacrylate
Appearance	Gray paste
Viscosity at 77°F (25°C), cP	500,000 to 1,100,000
Specific gravity	1.14
Flash point	See MSDS

Typical Properties (Cured)

Physical Properties

Property	Value
Coefficient of thermal expansion, ASTM D696 (K ⁻¹)	71 x 10 ⁻⁶
Coefficient of thermal conductivity, ASTM C 177, W/(m·K)	0.602
Tensile Strength at break, ISO 527, N/mm ² (psi)	16.2 (2,350)
Elongation at break, ISO 527, %	7.8
Young's Modulus, N/mm ² (psi)	1,600 (232,000)
Temperature Range, °C (°F)	-55 to 150 (-65 to 300)

Electrical Properties

Property	Value
Dielectric Strength, kV/mm IEC 60243-1, kV/mm	1.5
Dielectric Constant @ 100 Hz IEC 60250	14.92
	1 kHz 14.26
	1 MHz 12.34
Dissipation Factor @ 100 Hz IEC 60250	0.05
	1 kHz 0.03
	10 kHz 0.06
Volume Resistivity, Ω·cm, IEC 60093	5.2 x 10 ¹¹
Surface Resistivity, Ω, IEC 60093	8.6 x 10 ¹³

Typical Curing Performance

Dissipator[®] 747, when used with **Hernon[®] EF[®] Activator 63**, fixtures at room temperature in less than five minutes.

Typical Cured Performance

Shear Strength, ISO 4587

Steel lap-shear specimens cured 24 hours at 22°C

EF[®] Activator 63 applied to one surface

Gap, mm	N/mm ² (psi)
0.05	≥ 12.4 (≥ 1800)
0.50	≥ 3.8 (≥ 550)

Typical Environmental Resistance

Cured for 72 hours @ 22°C.

steel lap-shear specimens (**EF[®] Activator 63** applied to one surface), Shear Strength, ISO 4587

Chemical/Solvent Resistance

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

Chemical/Solvent	Temp (°C)	% of Initial Strength
Air	87	150
Water	87	50
Freon TF	87	70

Thermal Cycle Resistance

Bonded aluminum to epoxyglass lapshears cured 72 hours using **EF[®] Activator 63** on 1 side were subjected to thermal cycling of 15°C to 100°C with a ramp time of 30 minutes. No loss in strength occurred after 1,000 hours of cycle time.

General Information

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

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 24 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.
8. The successful application of this product depends on accurate dispensing on the parts to be bonded. **Hernon[®]** Equipment Engineers are available to assist you in selecting and implementing the appropriate dispensing equipment for your application.

Storage

Dissipator[®] 747 should be stored in a cool, dry location in unopened containers at a temperature between 46°F to 82°F (8°C to 28°C) 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.

These suggestions and data are based on information we believe to be reliable and accurate, but no guarantee of their accuracy is made. HERNON MANUFACTURING, INC. shall not be liable for any damage, loss or injury, direct or consequential arising out of the use or the inability to use the product. In every case, we urge and recommend that purchasers, before using any product in full scale production, make their own tests to determine whether the product is of satisfactory quality and suitability for their operations, and the user assumes all risk and liability whatsoever, in connection therewith. Hernon's Quality Management System for the design and manufacture of high performance adhesives and sealants is registered to the ISO9001:2000 Quality Standard.