

Secure® 1500U

Thermally Conductive, Unsupported, Thermoset, Structural Adhesive

Description:

Secure® 1500U is a structural adhesive film composed of uncured silicone rubber with functional additives formulated to deliver exceptional thermal, physical, and electrical properties.

Developed specifically for LED and Power applications where long-term reliability is a top concern. Secure® adhesives form chemical bonds with the substrates they are in contact with during cure to produce robust adhesion that is resistant to heat, humidity, and shock. This eliminates the need for mechanical fasteners and concerns with screws coming loose, clips retaining clamping force, gap pads taking a compression set, or thermal greases pumping out. Secure® adhesives are electrically insulating to isolate your LED PCB or power transistor from the heat sink. Secure® adhesives are UL listed with a UL94 V-0 flame rating and a 150°C relative thermal index (RTI) for both mechanical and electrical. Additionally, Secure® adhesives are RoHS compliant and free of halogenated flame retardants.

Benefits:

- Eliminates the need for mechanical fasteners.
- Decouples stress induced by mismatched coefficients of thermal expansion.
- Improves consistency of thermal path to heat sink.
- Can be cured without pressure for small bonding areas $\leq 5 \text{ cm}^2$.

Recommended Applications:

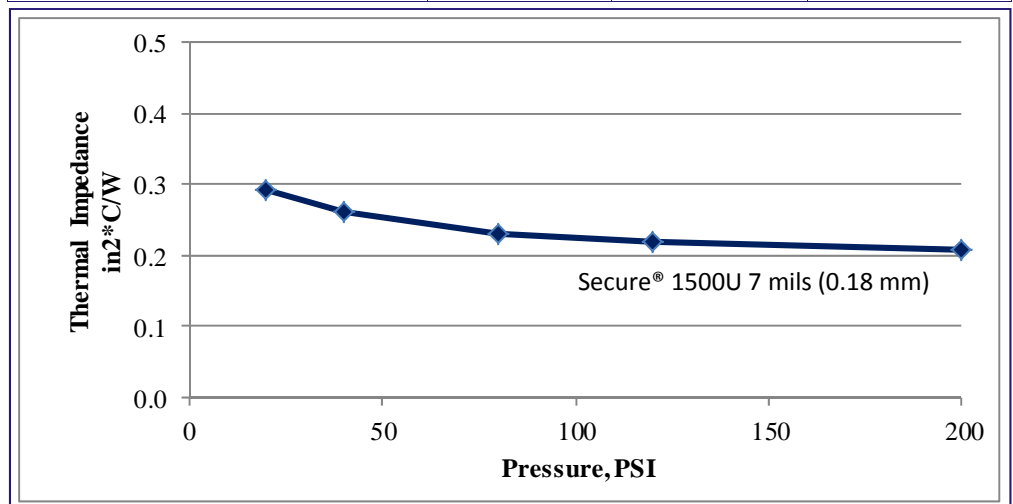
- Adhering power transistors to heat sinks.
- Adhering LED light modules to heat sinks.
- Adhering electronic assemblies to heat sinks.

Standard Sizes:

- 36 in. x 125 LY rolls
- Slit widths, cut pads, and die cuts
- Other sizes on request

Secure® 1500U adhesives are temperature sensitive. Arlon recommends 7 +/- 3C storage. Shelf life is 6 month from DOM at recommended conditions.

Property	Typical Value		Test Method
	Imperial	Metric	
Color	Mauve	Mauve	Visual
Thickness	4—20 mils	0.10—0.51 mm	ASTM D374
Construction	Unsupported	Unsupported	---
Mechanical			
Hardness	77 Shore A	77 Shore A	ASTM D2240
Shear Strength	500 PSI	3.4 MPa	ASTM D1002
Elastic Modulus ($\leq 1\%$ strain)	3550 PSI	24.5 MPa	Arlon TMS-008
Shear Modulus ($\leq 25\%$ strain)	145 PSI	1.0 MPa	ASTM D1002
Thermal			
Thermal Conductivity	0.87 Btu/(hr*in ² *F)	1.5 W/m-K	ASTM D5470
Thermal Impedance @ 40 PSI	0.26 in ² *C/W	1.7e ⁻⁴ m ² *K/W	ASTM D5470
Glass Transition Temperature	-180°F	-118°C	ASTM D3418
Operating Range	-150 to 400°F	-100 to 204°C	---
Electrical			
Dielectric Strength, kVac	> 500 V/mil	> 19 kV/mm	ASTM D149
UL Certification (QMFZ2.E54153)			
Flammability Rating	V-0	V-0	UL 94
RTI, Mechanical	300°F	150°C	UL 746
RTI, Electrical	300°F	150°C	UL 746
Hot Wire Ignition (HWI)	4 @ 0.17 mm 3 @ 0.51 mm	4 @ 0.17 mm 3 @ 0.51 mm	UL 746
High Current Arc Ignition (HAI)	3 @ 0.17 mm 2 @ 0.51 mm	3 @ 0.17 mm 2 @ 0.51 mm	UL 746



Thermal impedance measured per ASTM D5470. Values obtained depend on pressure and surface finish of fixture

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