Fast Cure Thermal Conductive Adhesive NEW

8329TCF

The 8329TCF Fast Cure Thermal Conductive Adhesive is an electronically insulating epoxy that combines moderate curing rate and high thermal conductivity. The cured adhesive bonds very well to most substrates used in electronic assemblies; and resists thermal and mechanical shocks. It has a convenient 1-to-1 ratio, a workable 3 to 5 minutes pot life, and a moderate curing rate. For a 1.0 mL sample, the minimal service cure can be achieved in 15 min at room temperature, and full cure in 80 min.

- Excellent 1.35 W/(m•K) thermal conductivity
- Easy 1:1 mix ratio
- Adheres to most electronic substrates
- Stores and ships at slightly below room temperature — no freezing or dry ice required
- Shelf life of at least one year — when stored slightly below room temperature
- Strong water and chemical resistance to brine, acids, bases, and aliphatic hydrocarbons

Available Sizes

Catalog Number	Sizes Available	Description
8329TCF-6ML	14 g (6 mL)	Paste

Technical Data

Download Specifications

Specifications

Specification	Test Method	Result
Physical Properties - Cured		
Color	Visual	Dark Grey
Density @ 22 °C [71 °F]		2.38 g/cm3
Hardness	(Shore D durometer)	76D
Tensile Strength	ASTM-D-638	24.4 N/mm2 [3,500 lb/in2]
Young's Modulus	ASTM-D-638	7,200 N/mm2 [1,000,000 lb/in2]
Elongation	ASTM-D-638	1.0%
Compression Strength	ASTM-D-695	66 N/mm2 [9,600 lb/in2]
Lap Shear Strength (Aluminum 5052)	ASTM-D-695	5.4 N/mm2 [790 lb/in2]
Water Absorption	ASTM D 570	2.17%
Outgassing (Total Mass Loss) @ 24 h	ASTM E 595	1.44%
Water Vapor Release (WVR)	ASTM E 595	0.16%
Collectable Volatile Condensable Material	ASTM E 595	0.07%
Electrical Properties - Cured		
Breakdown Voltage @4.188 mm	ASTM D 149	39.6 kV
Dielectric Strength @4.188 mm	ASTM D 149	9.5 kV/mm [240 V/mil]
Breakdown Voltage @3.175 mm [1/8"]	Reference fit	34.2 kV
Dielectric Strength @3.175 mm		10.8 kV/mm [273 V/mil]

[1/8”]		
Volume Resistivity	ASTM D 257	3 x10 14 Ω · cm
Surface Resistivity	ASTM D 257	3 x10 13Ω
Dielectric Dissipation & Constant		dissipation, D constant, k’
Dissipation & Constant @ 1 kHz	ASTM D 150-98	0.022, 6.25
Insulating		Yes
Conductive		No
Thermal Properties - Cured		
Thermal Conductivity	ASTM E 1461	
@ 25°C @ 50°C@ 100°C		1.35 W/(m·K) 1.36 W/(m·K)1.22 W/(m·K)
Heat Deflection Temperature	ASTM D 648	40 °C [104 °F]
Glass Transition Temperature (Tg)	ASTM D 3418	31 °C [88 °F]
CTE prior Tg	ASTM E 831	29 ppm/°C
CTE after Tg	ASTM E 831	134 ppm/°C
Specific Heat @25 °C [77 °F]	ASTM E 831	1.031 J/(g·K)
Curing & Work Schedule		
Working Life		3–5 min
Shelf Life		≥1 y
Min. Service Cure		14 min
Full Cure @25 °C [77 °F]		80 min
Full Cure @65 °C [149 °F]		15 min
Temperature Service Range		
Constant Service Temperature		-65 °C to 165 °C [-40 °F to 302 °F]
Maximum Withstand Temperature		-70 °C to 200 °C [-40 °F to 302 °F]
Storage Temperature of Unmixed Parts		≤20 °C [≤68 °F]

Properties of Uncured 8329TCF		
Physical Properties - Uncured	**Mixture (1A:1B)**	
Color	Dark Grey	
Density	2.47 g/mL	
Mix Ratio by volume (A:B)	1:00:1.00	
Mix Ratio by weight (A:B)	0.92:1.00	
Solids Content (w/w)	100%	
Physical Properties - Uncured	**Part A**	**Part B**
Color	Black	Light Grey
Density	2.45 g/mL	2.47 g/mL
Flash Point	>149 °C [300 °F]	>148 °C [298 °F]
Viscosity	1,300,000 cP [1,300 Pas]	760,000 cP [760 Pas]

MSDS

Available MSDS:

- English MSDS - Part A
- English MSDS - Part B

Applications

The 8329TCF is used for thermal management situations requiring superior bonding strengths and good thermal transfers. For example, it is used to as a die-attach for electrical and electronics, increasing their long term reliability. It is great for heat sink bonding. It is also used as a high-powered LED adhesive that maximizes the lifetime of LEDs by dissipating their heat.

Usage Instructions

Application Instructions

Follow the procedure below for best results. For mixing quantities that are less than 1 mL in size or for stricter stoichiometry control, mix by weight ratio instead (requires a high precision balance). Heat cure is recommended to get the best possible conductivity. **To prepare 1:1 (A:B) mixture**

1. Remove cap or cover.
2. Measure one part by volume of A.
3. Measure one part by volume of B.
4. Thoroughly mix the parts together with a stir stick until homogeneous.
5. Apply with an appropriate sized stick for the application area.

Note: Remember to recap the syringe or container promptly after use. Tip: Note that the material viscosity decreases with mixing, so the material will be most liquid-like and easily applied immediately after being mixed. Due to short cure time, apply as soon as possible after mixing. **To heat cure the 8329TCF** Put in oven at 65 °C [149 °F] for 15 minutes. Tip: Hair dryers are normally rated not to exceed 60 °C, so they can generally be used to accelerate the cure. Attention: Keep the curing temperature well below temperature limit of heat sensitive components that may be present. As a guideline, remember that commercial grade devices normally can be safely operated up to 70 °C, industrial grade up to 85 °C, and military grade up to 175 °C. Attention: Heat guns can easily exceed the temperature limits for your assembly: they should not be used.

Resources

Adhesive Comparison Chart

Product Literature:

- MG Introduces

Related Products

Medium Cure Thermal Conductive Adhesive (8329TCM)

Slow Cure Thermal Conductive Adhesive (8329TCS)