



10-3003 EPOXY ADHESIVE

DESCRIPTION:

10-3003 is a new high bond strength epoxy adhesive formulated for ease in handling and convenience for the end user. This system has a non-critical mix ratio and adjustable flexibility. 10-3003 is also very safe to use due to the absence of harmful solvents and toxic chemicals in the formulation.

10-3003 yields high peel strength and excellent tensile strength. It also has outstanding thermal shock, impact and vibration resistance. This high performance epoxy adhesive exhibits outstanding physical, thermal, and electrical insulation properties.

10-3004 NC is available as a very low viscosity version of 10-3003.

10-3002 is available as a higher viscosity version of 10-3003.

FEATURES:

- Non-critical mix ratio
- Ability to adjust flexibility of bond line
- Outstanding thermal shock resistance
- Excellent chemical resistance
- Very good operating temperature range

TYPICAL SPECIFICATIONS:

PHYSICAL:

Color	Clear
Pot Life, 100 gram mass @ 25°C	90 minutes
Specific Gravity, 25°C	
Resin	1.17
Catalyst	.96
Tensile Strength, psi	10,500
Flexural Strength, psi	51,000
Temperature Range of Use	-50° C to 125° C
Expansion Coefficient, °C	50 x 10 ⁻⁶
Izod Impact, ft-lb/in	4.0
Viscosity at 25°C; cps	
10-3003 Resin	12,000 - 15,000
10-3003 Hardener	6,000
10-3003 Mixed	15,000
10-3004NC Resin	1,000
10-3004 Hardener	15,000
10-3004 NC Mixed	5,400
10-3002 Resin	12,000
10-3002 Hardener	45,000
10-3002 Mixed	70,000

THERMAL:

Thermal Conductivity, W/m- °K	.43
Thermal Shock, MIL I 16923	Passes



ELECTRICAL:

Dielectric Strength V/mil	550
Volume Resistivity, ohm-cm	1.1×10^{15}
Dielectric Constant 10^3 cycles	3.11
Dissipation Factor 10^3 cycles	0.02

BOND STRENGTH:

Steel to Steel	3,000 psi
Aluminum to Aluminum	3,300 psi
Copper to Copper	1,500 psi
Glass to Glass	**
Nylon to Nylon	1,200 psi
PVC to PVC	750 psi
Natural Rubber to Natural Rubber	**
Brass to Brass	2,600 psi
Natural Rubber to Aluminum	**
Teflon* to Aluminum	1,850 psi

**Substrate fails before bond failure

*Teflon-Registered Trademark of E.I. Dupont

MIX RATIO:

10-3002, 10-3003 and 10-3004 adhesives offer adjustable mix ratios in order to obtain a rigid, semi-rigid, or flexible bond line.

RESIN/HARDENER:

1. Rigid formulation	100/50
2. Semi-rigid formulation	100/100
3. Flexible formulation	100/150

For the majority of bonding applications, formulation #2 is used.

CURE SCHEDULE:

1. 24 hours at room temperature
2. 1/2 - 1 hour at 150-160°F
3. 15-30 minutes at 200-220°F

PREPARATION OF SURFACES:

Surfaces must be clean and grease free. Adhesion can be substantially increased by abrading the surfaces to be bonded with emery cloth, sand paper, carbide grinding tools, sand blasting, etc... A roughened, porous surface will produce the best results. Any oxidized metal films should be removed just prior to application of the epoxy adhesive mixture.

IMPORTANT:

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