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
• Excellent chemical resistance
• Ability to adjust flexibility of bond line
• Very good operating temperature range
• Outstanding thermal shock resistance

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: $1.1 \times 10^{15}$
- 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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