



# 10-3003 HV HV EPOXY ADHESIVE

## DESCRIPTION:

10 3003 HV 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 HV is also very safe to use due to the absence of harmful solvents and toxic chemicals in the formulation.

10 3003 HV 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.

10-3016 NC is available as a very low viscosity version of 10-3003 HV.

## 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	45 minutes
Specific Gravity, 25°C/25°C	1.24
Tensile Strength, psi	10,500
Flexural Strength, psi	51,000
Expansion Coefficient, 1°C	$50 \times 10^{-6}$
Izod Impact, ft-lb/in	4.0
Viscosity at 25°C	
Operating temp. range, °C	-70 to +100
10 3003 HV Resin	20,000 cps
10 3003 Hardener	6,000 cps
10 3003 HV Mixed	15,000 cps
10 3016 NC Resin	1,000 cps
10 3016 Hardener	15,000 cps
10 3016 Mixed	5,400 cps

### THERMAL:

Thermal Conductivity, btu·in/hr·ft <sup>2</sup> ·°F	3.0
Thermal Shock, MIL I 16923	PASSES



**ELECTRICAL:**

Dielectric Strength V/mil	550
Volume Resistivity, ohm-cm	1.1 x 10 <sup>15</sup>
Dielectric Constant 103 cycles	3.11
Dissipation Factor 103 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:**

10-3003 HV and 10-3016 NC 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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