

1656 RESIN DATA SHEET

1656 Resin is a reactive, light colored liquid epoxy resin. When cross linked or hardened with appropriate curing agents, excellent mechanical , adhesive, and chemical resistance are obtained.

Performance characteristics of: 1656 Resin

Mechanical Properties:

High performance, high strength materials are obtained when this resin is cured with a variety of curing agents. Unfilled systems in common use have tensile values greater than 10,000 psi (275 mpa). Such systems are normally very rigid. If greater flexibility is needed systems can be formulated to give up to 300% elongation.

Adhesive Properties:

One of the most widely recognized properties of cured 1656 is excellent adhesion to a broad range of substrates. Such systems exhibit shear strength of up to 6,000 psi. One factor which contributes to this property is the low shrinkage shown by these systems during cure. Compared to other polymers, epoxy resins have low internal stresses resulting in strong and durable finished products.

Electrical Properties:

1656 resin systems have excellent electrical insulating characteristics and dielectric properties. For example, systems can be obtained with anhydride and amine curing agents having volume sensitivities up to 1×10^{16} ohm-cm, dielectric constants of 3-5 and dissipation factors of 0.006-0.020 at ambient conditions. Electrical encapsulations, laminates, and molding compounds are frequently based on 1656 resin.

Chemical Resistance:

Cured 1656 resin is highly resistant to a broad range of chemicals, including caustic acids, fuels and solvents. Chemically resistant reinforced structures and linings or coatings over metals are obtained with 1656 resin.

Typical Properties:

Epoxide, eq/100g	0.52-0.54
Epoxide equivalent weight	185-192
Viscosity, Poise@25C (77F)	110-150
Color , Gardner	3 max
Specific gravity, 20C(68F)	1.16
Pounds/gallon, 20C(77F)	9.7
Refractive index, 25C (77F)	1.573

Specific heat, cl/g/C (BTU/lb/F) 0.5(0.3)
 Thermal conductivity (BTU ft/hrs. ft/°F) 0.13
 Deflection Temperature 115C/240F *
 Shore "D" Hardness 1656/80 ratio 100:33 p.b.w. RT cure at 25C 81-84. If cured at 100C, 2 hrs, 86.

Curing Agents:

	Lbs/gal	Mix Ratio (p.b.w)	Gel Time @25C, 150g	Cure Temp range, F
#80 hardener	8.5	80	1.5 hrs	140-200 1 hr

Mix ratio	by weight	100 to 80	Resin to Hardener
	By volume	1 to 1	Resin to Hardener

*cured at room temperature then post cured at elevated temperature to achieve deflection values.

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