

electrovex™

conductive epoxy

ZC-100

Conductive Epoxy Resin

Introduction

Electrovex ZC-100 is a bisphenol-A carbon nanotube enhanced liquid epoxy resin optimized for increased electrical conductivity. It is recommended for use in coating and adhesives applications and can be cured with a wide range of curing agents.

Characteristics

Property	Unit	Typical value ^a
Volume Resistivity	Ohm-cm	$10^2 - 10^8$
Viscosity at 20°C	Poise	300
Epoxide Equiv. Weight	g/eq	183 - 192
Density at 25°C	g/cm ³	1.16 - 1.22
Flash Point	°C	>200

Features

Electrovex ZC-100 can be used directly or diluted in another bisphenol-A epoxy or solvent. The typical electrical resistivity that can be achieved is in the range $10^2 - 10^8$ Ohm-cm, depending on dilution level. The electrical properties obtained with Electrovex ZC-100 are outstandingly consistent and uniform.

Electrovex ZC-100 is well suited for epoxy coatings and adhesives applications that require increased electrical conductivity.



Mechanical Properties^(a)

Flexural Test
Cured with DDS hardener
2 hours at 150°C, 3 hours at 220°C

Property	Neat Resin	ZC-100	Improvement
Flexural Modulus (GPa)	2.783	3.0	+10%
Flexural Strength (MPa)	95.5	110.6	+15%
Flexural Strain (%)	4.6	8.35	+80%

Fracture Test
 K_{IC} (MPa·√m) and critical elastic energy released
 G_{IC} (J/m²): ISO 13586:2000.

Property	Neat Resin	ZC-100	Improvement
K_{IC} (MPa·√m)	0.79	0.89	+12%
G_{IC} (J/m ²)	236	271	+15%

Dilution and Processing

Electrovex ZC-100 can be diluted, if desired, with unfilled bisphenol-A epoxy. The recommended process is to heat the ZC-100 to 70°C, stirring in the bisphenol-A resin, and then cooling back to room temperature. If dilution is desired with a solvent, such as methylethyl ketone (MEK), add the MEK at 23°C while stirring the ZC-100. Do not heat while adding the solvent.

ZC-100 can be cured with a wide range of commercial hardeners depending on the curing conditions and final properties desired.

Safety & Handling

Zyvex Performance Materials (ZPM) provides its customers with a product specific Material Safety Data Sheet (MSDS) to cover potential health effects, safe handling, and use information.

ZPM encourages its customers to review the Electrovex MSDS prior to use.



Contact Information

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^a Data is not intended for specification purposes.

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