

Mech^T E35A Conductive Carbon Nanotube Masterbatch in BR-952

APPLICATIONS

- ESD 3D printing resins
- Low surface resistivity coatings and adhesives
- Conductive inks

FEATURES

- Stable dispersion of discrete nanotubes
- Promotes electrostatic dissipation in UV-curable formulations
- No degradation of mechanical properties

FEATURES

- Capable of achieving 10^4 - $10^9 \Omega/\text{sq}$ resistivity
- Easy addition to a formula without high shear mixing
- Provides carbon content with no carbon trails

Mech^T E35A is a stable dispersion of discrete functionalized carbon nanotubes in urethane dimethacrylate (UDMA), BR-952. The masterbatch can be used in rigid, high tensile strength SLA, DLP, or jettable resins to provide conductivity and decreased resistivity. When compared to FDM-printed ESD parts, ESD resins produced with Mech^T E35A can achieve fully isotropic conductivity with high resolution and isotropic mechanical properties.

UNCURED PROPERTIES OF E35A

Property	Value
Viscosity, cP (25°C)	91,000
Pt-Co (APHA) Color	Black
Density, g/cm ³ (25°C)	1.13

CURED MECHANICAL PROPERTIES COMPARED TO BR-952

Property	E35A I30	BR-952 I30
Tensile Strength, psi**	11,100	10,800
Elongation, %**	4.0	5.4
Elastic Modulus, ksi**	400	380
Durometer Hardness	90	89
Water Absorption, % (24 hrs)	0.21	0.23
MEK Double Rubs (#)	>200	>200

E35A T_g (DMA) = 157°C; Peak tan delta; cured with 2 phr of TPO
BR-952 T_g (DMA) = 153°C; Peak tan delta; cured with 2 phr of TPO

** Per ASTM D882

ADHESION PROPERTIES COMPARED TO BR-952

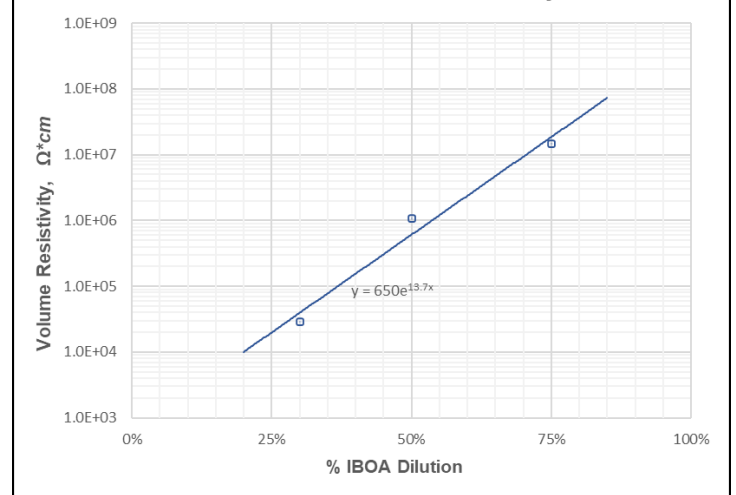
Substrate	E35A I30	BR-952 I30
ABS	✓✓✓	✓
Aluminum		
Cold Rolled Steel		
Glass		
HDPE		
PET	✓✓	✓
PMMA		
Polycarbonate	✓✓✓	✓
Polypropylene		
PVC	✓✓✓	✓
Stainless Steel		

✓ Recommended ✓✓ Highly Recommended ✓✓✓ Strongly Recommended

TYPICAL FORMULATIONS

Test Formulation Name	I30	I30
E35A	70	
BR-952		70
IBOA	30	30
TPO	2	2
Viscosity, 25°C *	800	500

* Brookfield – CAP 2000+ @ 25°C.

Mech^T E35A Volume Resistivity


Volume resistivity per ASTM D257

GENERAL INFORMATION

This product is intended for industrial use only. Keep out of the reach of children. Avoid breathing vapors. Avoid contact with skin, eyes, and clothing. Wear impervious gloves. Repeated or continuous skin contact with uncured material may cause irritation. Remove material from skin with soap and water. Never use organic solvents to remove material from skin and eyes. For more information on the safe handling of this material, please refer to the I Safety Data Sheet before use.

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