

Glass Resin Products

Techneglas LLC

A wholly owned subsidiary of

GLASS FOR FUTURE



- Glass Resins (GR) are a family of high performance thermosetting polysiloxane resins
- GR are manufactured from specially purified monomers by a patented process
- GR polymers having exceptional properties
- Self crosslinking reactions are set up by oven cure
- Cured films are highly transparent
- Product is resistant to solvent attack and uv degradation
- Glass Resins do not burn nor support combustion
- Glass Resin are available in non-hazardous flake and solventless forms
- Glass Resin liquid forms are supplied as alcohol solutions

- Available Forms:
 - Flake (F)
 - Liquid (L)
 - Solventless (S)
- Pure “T” structure resins for formulators
- Compatible with urethanes, acrylics
- High silanol functionality
- Low levels of residual acid and ionic impurities
- Good stability and shelf life in compositions
- Custom solution blends are available
- Cured product is non-flammable





Cell Phone Windows/Covers	Displays
Safety Lenses and Visors	Security Camera Covers
Headlamp, tail and side covers	Clear films
Auto Trim Protection	Skylights

Flame Resistant Composite Resin

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Properties of Glass Resin

	<u>GR-100F</u>	<u>GR-150F</u>	<u>GR-630L</u>	<u>GR-630S</u>	<u>GR-650F</u>
Form	Transparent flake	Transparent flake	Solution	Viscous liquid	Transparent flake
% Resin	100	100	60	100	100
Solvent	-	-	Xylene	-	-
Solubility	Polar & Aromatic	Polar & Aromatic	Aromatic	-	Polar
Molecular Weight	1500 - 2500	1800 - 3000	--	--	5000 – 10,000
Cure Temperature	200°C (400°F)	200°C (400°F)	300°C (570°F)	260°C (500°F)	150°C (300°F)
Refractive Index	1.49	1.51	1.48 (<i>film</i>)	1.47	1.42
Organic Substituents	Methyl-Phenyl	Methyl-Phenyl	Methyl-Phenyl	Methyl-Phenyl	Methyl

Properties of Glass Resin

	<u>GR650S</u>	<u>GR654L</u>	<u>GR657L</u>	<u>GR908F</u>	<u>GR950F</u>
Form	Viscous Liquid	Clear Solution	Clear Solution	Transparent flake	Transparent flake
% Resin	100	35	25	100	100
Solvent	--	Butanol-Methanol	Ethanol-Isopropanol	--	--
Solubility	Polar	---	---	Polar & Aromatic	Polar & Aromatic
Molecular Weight	--	2000 - 3000	4000	1500	1000
Cure Temperature	150°C (300°F)	150°C (300°F)	150°C (300°F)	250°C (480°F)	300°C (570°F)
Refractive Index	1.42	1.42 (<i>film</i>)	1.42 (<i>film</i>)	1.55	1.56
Organic Substituents	Methyl	Methyl	Methyl	Methyl-Phenyl	Phenyl

Glass Resin Flake Applications

	GR-100F	GR-150F	GR-908F	GR-650F	GR-950F
Resin Functionality	Methyl-Phenyl	Methyl-Phenyl	Methyl-Phenyl	Methyl	Phenyl
Abrasion Resistance				✓	
Release Coatings				✓	
Flame Proof Resistor Paint	✓			✓	
High Temperature Ink					✓
Dielectric films, microelectronic device / display fabrication	✓	✓			✓
High Temperature Laminates			✓		✓
High Temperature Molding Compounds			✓		✓
High Temperature Fabric Coatings			✓		✓

Glass Resin Liquid and Solventless Applications

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	GR-630L	GR-630S	GR-650S	GR-654L	GR-657L
Resin Functionality	Methyl-Phenyl	Methyl-Phenyl	Methyl	Methyl	Methyl
Coatings for plastic				✓	
Abrasion Resistance				✓	
Release Coatings	✓		✓		✓
Dielectric films, microelectronic device / display fabrication				✓	
High Temperature Molding Coatings / Compounds / Laminates	✓	✓			

Catalyzed Liquids

- Solvent based clear coatings for
 - Acrylics
 - Nylon
 - Polycarbonate
 - PET
 - Polysulfone
- Suitable for spray, flow and dip coat methods of application
- Excellent long term stability
- Low viscosity
- 1-part require no mixing of catalyst or crosslinker.
- Excellent resistance to weathering for surface adhesion
- Immune to yellowing

- **GR-651L** Minimum cure temperature 176°F.
- **GR-653L** Minimum cure temperature 176°F.
- **GR-653L** Primerless for polycarbonate. Minimum cure temperature 215°F

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