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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

Glass Resin Products



- 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



Hard Coat Products





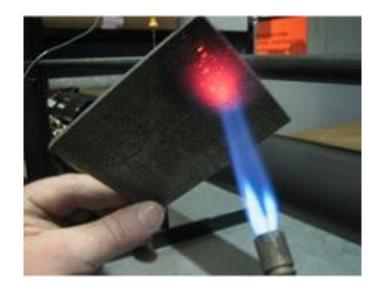


Cell Phone Windows/Covers	Displays
Safety Lenses and Visors	Security Camera Covers
Headlamp, tail and side covers	Clear films
Auto Trim Protection	Skylights

Flame Resistant Composite Resin







Properties of Glass Resin



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	<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



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

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				\checkmark	
Abrasion Resistance				\checkmark	
Release Coatings	\checkmark		\checkmark		\checkmark
Dielectric films, microelectronic device / display fabrication				\checkmark	
High Temperature Molding Coatings / Compounds / Laminates	\checkmark	\checkmark			

Protective Coatings for Plastics

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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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