



Technical Data Sheet

PRO GLAS ECO CLR Epoxy – Clear, General Purpose Liquid Epoxy Resin

Product Overview

CLR Epoxy is a modified clear liquid epoxy resin. As opposed to traditional epoxies that are composed primarily of petroleum-based materials, formulations contain bio-renewable materials sourced as co-products or from waste streams of other industrial processes, such as wood pulp and bio-fuels production. These natural components have excellent elongation and exceptionally high adhesion properties.

Applications

CLR Epoxy is our water clear, UV stabilized epoxy system for applications that require a low color, low yellowing epoxy resin, such as for surfboard lamination and coating. It has an ideal viscosity for a wide range of applications ranging from hand layup, room temperature cure processes to resin infusion.

WHY CHOOSE PRO GLAS ECO CLR

Performance Grade:

- Improved mechanical performance
- Formulas catering a wide range of processes and applications

Reduced Environmental Impact

- 50% minimum reduction in CO and greenhouse gas emissions¹
- Green chemistry eliminates harmful by-products
- Reduced power and water consumption

Considerations for the Environment & User Safety

- Agricultural land use
- Reduced harmful by-products such as chlorinated hydrocarbons
- Reduced power and water consumption during processing
- Lowered sensitizing components for increased user safety

SUSTAINABLE TECHNOLOGY

Industrial Pine Oils

Sourced as a co-product from the paper pulp industry, our pine-based feedstocks are an economic alternative to traditional petrochemicals and provide unique mechanical properties in our resins, such as improved adhesion and elasticity.

Waste and Non-Food Grade Vegetable Oils

By-products of bio-fuels production provide a green chemistry route to one of the main components in our epoxy production. This renewable feedstock replaces additional petrochemical components in our resins with a rapidly renewable resource.

¹ As compared to 100% petroleum derived epoxies, depends on final system bio-content, LCA measurement using ISO 14040:2006.

The information herein is general information designed to assist customers in determining whether ProGlas products are suitable to their applications. ProGlas products are intended for sale to industrial and commercial customers. We require customers to inspect and test our products before use and to satisfy themselves as to contents and suitability for their specific applications. **Nothing herein constitute any warranty express or implied, including any warranty of merchantability or fitness for a particular purpose**, nor is any protection from any law or patent to be inferred. The exclusive remedy for all proven claims is limited to replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.

Typical Physical Properties	
Property	Value
Appearance (Visual)	White to light yellow
Color (Gardener)	1-2
Viscosity (cPs @ 25°C)	2000-4000
Density (specific gravity @ 25°C, water = 1)	1.17
Bio-Carbon Content ²	18.2% – 25.4%
Bio-Content by Mass ³	30.8% – 45.2%

Property	CLEAR HARDENERS		INFUSION HARDENERS	
	CLF - Clear FAST Hardener	CLS - Clear SLOW Hardener	INF - Infusion FAST Hardener	INS - Infusion SLOW Hardener
Hardener Product Rev	CLF01	CLS02	INF02	INS01
Mix Ratio by Weight	100:47	100:48	100:33	100:43
Mix Ratio by Volume	2:1	2:1	–	–
Mix Viscosity (cPs @ 77°F)	2000-4000	2000-4000	500-1000	500-1000
System Bio-Content by Mass ³	21% – 30%	21% – 30%	21% – 30%	21% – 30%
Gel Time (min, 150g @ 77°F)	25	50	45	90
Thin Film Set (hrs @ 77°F)	2	6	4	8
Tack Free Time (hrs @ 77°F)	3	8	8	24
Cure Cycle (see notes below)	7 days @ 25°C	7-10 days @ 25°C Recommend Post Cure	7-10 days @ 25°C Recommend Post Cure	7-10 days @ 25°C Recommend Post Cure
Tensile Modulus ⁴ (psi)	5.0 x 10 ⁵	5.0 x 10 ⁵	6.2 x 10 ⁵	6.2 x 10 ⁵
Tensile Strength ⁵ (psi)	9,410	9,410	10,100	10,100
Flexural Modulus ⁵ (psi)	4.4 x 10 ⁵	4.4 x 10 ⁵	5.5 x 10 ⁵	5.5 x 10 ⁵
Flexural Strength ⁶ (psi)	13,534	13,534	16,000	16,000
Elongation at Break ⁵ (%)	5	5	2	2
Tg (°F)	240	240	240	240

Recommended Cure Cycles

Cure characteristics for room temperature cures will depend greatly on the ambient conditions of your working area, namely temperature and humidity. To achieve optimal mechanical characteristics all room temperature cure systems should be allowed the recommend cure cycle before being placed into service. We recommend building samples coupons using proposed materials and

² ASTM D6866

² Uses bio-carbon content number and molecular structure to calculate total percentage of mass derived from bio-sources

² ASTM D638 (ISO 527)

² ASTM D790 (ISO 178)

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processes to fully understand curing characteristics of the resins in your working environment.

All **SLOW** cure hardener systems will cure to a brittle B stage in the allotted tack free time. To achieve full cure we recommend an elevated temperature post cure of 100°F – 180°F to reach optimal mechanical properties.

Safety and Handling

Please refer to the MSDS for the most up to date Safety and Handling information.

Despite their natural derivation, exposure to these materials represents hazards typical to all epoxy resins. Exposure should be minimized and avoided through the use of proper protective clothing and equipment and appropriate manufacturing controls. All persons who use, store, or transport these materials should properly understand the handling precautions and recommendations as stated in the MSDS.

Shelf life should be no less than 24 months when stored in closed containers, in a dry place, out of direct sunlight, and at temperatures between 15-35°C.

Distributor Information

Fiberlay Inc
www.fiberlay.com

Phone:
(800) 942-0660 – Toll Free

	IBC	Drum	Pail	Gallon
Epoxy Resin	2200 lbs	440 lbs	45 lbs	8.9 lbs
Hardener	2000 lbs	400 lbs	40 lbs	8.9 lbs
<i>Weights are approximates and will vary depending upon product and mix ratio</i>				

Sales Packages

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