



Technical Data Sheet

SUPER SAP® CPM Epoxy – High Viscosity, Compression Molding Liquid Epoxy Resin

Product Overview

SUPER SAP® CPM Epoxy is a high viscosity, modified liquid epoxy resin. As opposed to traditional epoxies that are composed primarily of petroleum-based materials, Super Sap® 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

SUPER SAP® CPM Epoxy is our high viscosity epoxy system for compression molding of fiber reinforced composites. It has excellent fiber wetting qualities and thixotropic characteristics to limit sag in high temperature cure applications. When paired with our compression molding hardeners, users can achieve fast, heat-assisted cures for high throughput processes.

WHY CHOOSE SUPER SAP

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. Our patent pending Super Sap technology is the secret to unlocking these properties.

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.

Typical Physical Properties of CPM Epoxy	
Property	Value
Appearance (Visual)	Amber
Color (Gardener)	3-9
Viscosity (cPs @ 77°F)	1300
Density (specific gravity @ 77°F , water = 1)	1.14
Bio-Carbon Content ²	28%
Bio-Content by Mass ³	47.5%

Typical Working Properties using compatible Super Sap® Hardener Systems		
Property	Slow Compression Molding Hardener	Fast Compression Molding Hardener
Hardener Product Rev	12_CPL01	12_CPF01
Mix Ratio by Weight	100:40	100:43
Mix Ratio by Volume	2:1	2:1
System Bio-Content by Mass ³	42%	40%
Mix Viscosity (cPs @ 77°F)	880	1230
Pot Life (min, 150g @ 77°F)	50	18 min
Hot Plate Gel Time (min, 1 fl oz @ 180°F)	8 min @ 180°F	6 min @ 180°F
Thin Film Set (hrs @ 77°F)	–	–
Tack Free Time (hrs @ 77°F)	–	–
Recommended Cure Cycle (see notes below)	20 min @ 180°F	15 min @ 180°F
Typical Performance Properties⁴		
Tensile Modulus ⁵ (psi)	4.5 x 10 ⁵	–
Tensile Strength ⁵ (psi)	8,700	–
Flexural Modulus ⁶ (psi)	2.9 x 10 ⁵	–
Flexural Strength ⁶ (psi)	14,000	–
Elongation at Break ⁵ (%)	6	–
Tg (°F)	180	–

² ASTM D6866

³ Uses bio-carbon content number and molecular structure to calculate total percentage of mass derived from bio-sources

⁴ Test specimen of neat resin without reinforcement, cured @ 77°F for 24hrs, then post cured @ 120°F for 2 hrs

⁵ ASTM D638 (ISO 527)

⁶ ASTM D790 (ISO 178)

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 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 stable temperatures between 60 - 95°F.

Sales Packages

	IBC	Drum	Pail	Gallon
Epoxy Resin	2200 lbs	440 lbs	45 lbs	9.0 lbs
Hardener	-	420 lbs	42 lbs	8.75 lbs
<i>Weights are approximates and will vary depending upon product and mix ratio</i>				

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