Technical Data Sheet
SUPER SAP® INR Epoxy System – Clear, Low Viscosity Epoxy Resin for Vacuum Infusion or RTM

Product Overview

SUPER SAP® INR SYSTEM is composed of Super Sap® INR Epoxy, a modified, clear liquid epoxy resin and Super Sap® INF and INS Hardeners. As opposed to traditional epoxies that are composed primarily of petroleum-based materials, Super Sap® formulations contain biobased 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® INR System is a clear, UV stabilized, low viscosity epoxy system for applications that require a low color, low yellowing epoxy resin and low viscosity for vacuum infusion or resin transfer molding (RTM) 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 emissions[1]
- 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

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.

Product Combo (Epoxy/Hardener)	INR/INF	INR/INS
Key Features	Excellent clarity, UV stability, Low yellowing, Low viscosity	Excellent clarity, UV stability, Low yellowing, Low viscosity, Long working times
Applications	Infusion, RTM, Lite RTM	Infusion, RTM, Lite RTM
Potential Use	Marine, Transportation	Marine, Transportation
Performance Data[2]		
Tensile Modulus (psi)[3]	490,000	590,000
Tensile Strength (psi)[2]	10,000	10,700
Elongation (%)[2]	3-4	4
Flexural Modulus (psi)[4]	380,000	400,000
Flexural Strength (psi)[3]	15,300	16,300
Ultimate Tg by DSC (°F)[5]	220	230
Hardness (Shore D)[6]	70-80	70-80
Biobased Carbon Content[7]	19%	19%
Processing Data		
Mix Ratio (by volume)	3:1	3:1
Mix Ratio (by weight)	100:33	100:33
Mixed Specific Density (@ 77°F)	1.1	1.1
Viscosity (A/B/Mixed, cPs, @ 77°F)	2200/25/200	2200/25/200
Pot Life (mins, @ 77°F)	45	180
Tack Free Time (hrs, @ 77°F)	n/a	n/a
Recommended Full Cure	2 hrs at 250°F	2 hrs at 250°F

[2] All performance data was taken from neat resin samples that underwent an initial cure at room temperatures for 24 hrs and a post cure at 250°F for 2 hrs
[3] ASTM D638
[4] ASTM D790
[5] ASTM D3418
[6] ASTM D2240
[7] ASTM D6866

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 sample coupons using proposed materials and processes to fully understand curing characteristics of the resins in your working environment.

Super Sap® INR system will cure to a brittle B stage in the allotted tack free time at room temperatures. To achieve full cure and optimal mechanical an elevated temperature post cure of approximately 180˚F for 2 hrs is required.

Safety and Handling

Please refer to the MSDS for the most up to date Safety and Handling information. MSDS downloads are available on the web at http://www.entropyresins.com/products.

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
Weights are approximates and will vary depending upon product and mix ratio				

Contact Information

Entropy Resins
www.entropyresins.com
info@entropyresins.com

Phone:
(877) 882-2120 – Toll Free
(310) 882-2120

Address:
30621 San Antonio St.
Hayward, CA 94544

24/7 Emergency Hotline: (760) 476-3962
Global Response Access Code: 333178