BUILDING TRUST

TECHNICAL DATA SHEET

SikaBiresin® CR94 with CH94-1 (Fast), CH94-3 (Medium), CH94-6 (Slow) hardeners

(FORMERLY L 140)

EPOXY LAMINATING SYSTEM
VARIABLE HARDENERS, LAMINATING, SUPERIOR PROPERTIES

DESCRIPTION

The new and improved SikaBiresin® CR94 systems (formerly L 140) are convenient, easy-to-use, 100% solids laminating systems developed for building, repairing or restoring any type of marine vessels and for many other applications and markets. The versatility of the L 140 epoxy systems makes them ideal for use in standard wet lay-up and vacuum bagging processing with a wide range of reinforcements. These systems can also be mixed with a variety of fillers for fairing, filleting or bonding applications. SikaBiresin® CR94 epoxy systems consist of one base resin and a selection of three separate hardeners to suit your application needs. These systems are all mixed at convenient 3:1 volumetric mix ratio and can be metered through our calibrated push pumps or various types of dispensing equipment when scales are not used. In addition to the high strength and durability of the SikaBiresin® CR94 epoxy systems, the low viscosity allows for better wet-out resulting in lighter, stronger, void-free parts without experiencing run out on vertical surfaces. The unique chemistry of the SikaBiresin® CR94 systems provide maximum physical properties, reduces curing exotherm and minimizes blush, making these systems more trouble free than ever. Applications include marine boats, parts, tools and also tools or parts for the industrial, transportation, and aerospace industries.

PROPERTIES

- Low viscosity for excellent wet-out
- R.T. cured and post-cured options
- Variable pot life/working time options
- Above and below waterline use
- Good high modulus/ good elongation
- Good 24 hour surface sandability
- Suitable for glass, carbon, aramid fabric
- Hardener blending an option
- Excellent bond to all fabrics
- Superior overall properties

PHYSICAL PROPERTIES – CR94/**CH94-1 (Fast)**

Composition			RESIN SikaBiresin® CR94	HARDENER SikaBiresin® CH94 –1	MIXED
Mix ratio by weight			100	27	100/27
Mix ratio by volume at 25 °C			100	33	100/33 (3/1)
Aspect			Liquid	Liquid	Liquid
Color			Hazy Clear	Clear	Clear
Viscosity at 25°C (Cps)			6,000 – 8,000	16 - 24	~ 1,200
Specific gravity at 25 °C	lbs./gal (g/cc)	ASTM D792	9.6 (1.15)	7.7 (.92)	9.1 (1.09)
Gel time at 77°F (150 grams) (25°C)	(minutes)				20 - 30

MECHANICAL PROPERTIES at 23 °C (**Neat** cured properties)

Hardness	(Shore D)	ASTM D-2240	
*Cure #1			84 - 88
**Cure #2			84 - 88
Flexural Strength	(psi)	ASTM D-790	
*Cure #1			10,000
**Cure #2			14,500
Flexural Modulus	(psi)	ASTM D-790	
*Cure #1			564,000
**Cure #2			468,000
Tensile Strength	(psi)	ASTM D-638	
*Cure #1			6,000
**Cure #2			11,600
Tensile Modulus	(psi)	ASTM D-638	
*Cure #1			310,000
**Cure #2			234,000
Tensile Elongation	(psi)	ASTM D-638	
*Cure #1			2.3
**Cure #2			7.3
Glass transition temperature	°F (°C) TMA	ASTM E1545	
*Cure #1			136 (58)
**Cure #2			203 (95)
Moisture absorption *Cure #1	(%)		0.1

* Cure #1 - 7 day/R.T.
** Cure #2 – 24 hr/R.T. + 8hr/180°F (82°C)

PHYSICAL PROPERTIES – CR94/**CH94-3 (Medium)**

Composition			RESIN SikaBiresin® CR94	HARDENER SikaBiresin® CH94 –3	MIXED
Mix ratio by weight			100	27	100/27
Mix ratio by volume at 25 °C			100	33	100/33 (3/1)
Aspect			Liquid	Liquid	Liquid
Color			Hazy Clear	Clear	Clear
Viscosity at 25°C (Cps)			6,000 – 8,000	12 - 20	~ 1,000
Specific gravity at 25 °C	lbs./gal (g/cc)	ASTM D792	9.6 (1.15)	7.7 (.92)	9.1 (1.09
Gel time at 77°F (150 grams) (25°C)	(minutes)				60 - 90

MECHANICAL PROPERTIES at 23 °C (**Neat** cured properties)

Hardness	(Shore D)	ASTM D-2240	
*Cure #1			84 - 88
**Cure #2			84 - 88
Flexural Strength	(psi)	ASTM D-790	
*Cure #1			11,900
**Cure #2			18,500
Flexural Modulus	(psi)	ASTM D-790	
*Cure #1			534,000
**Cure #2			472,000
Tensile Strength	(psi)	ASTM D-638	
*Cure #1			7,000
**Cure #2			11,400
Tensile Modulus	(psi)	ASTM D-638	
*Cure #1			279,000
**Cure #2			220,000
Tensile Elongation	(psi)	ASTM D-638	
*Cure #1			3.0
**Cure #2			8.1
Glass transition temperature	°F (°C) TMA	ASTM E1545	
*Cure #1			136 (58)
**Cure #2			203 (95)
Moisture Absorption *Cure #1	(%)		0 .2

* Cure #1 - 7 day/R.T.
** Cure #2 – 24 hr/R.T. + 8hr/180°F (82°C)

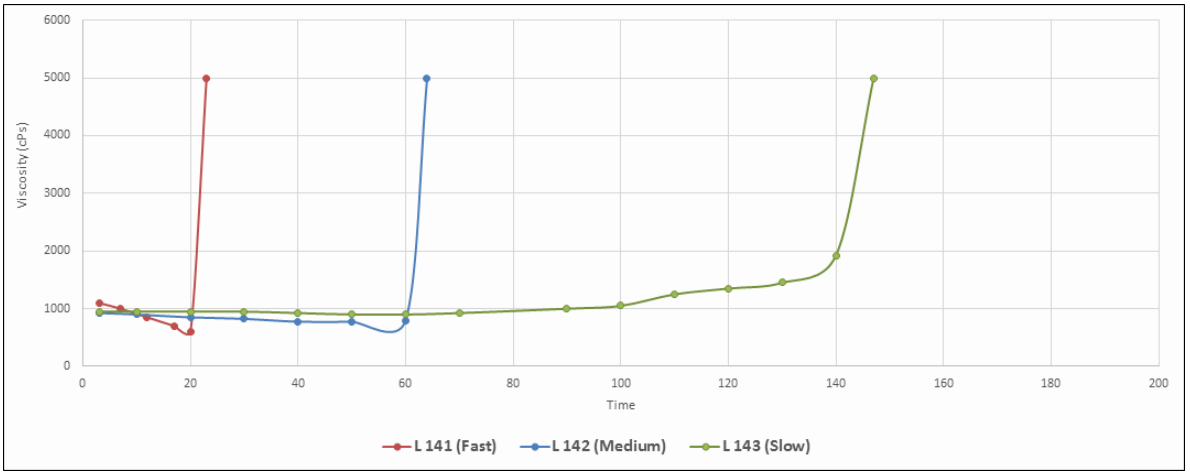
PHYSICAL PROPERTIES – **CR94/CH94-6 (Slow)**

Composition			RESIN SikaBiresin® CR94	HARDENER SikaBiresin® CH94 –6	MIXED
Mix ratio by weight			100	27	100/27
Mix ratio by volume at 25 °C			100	33	100/33 3/1
Aspect			Liquid	Liquid	Liquid
Color			Hazy Clear	Clear	Clear
Viscosity at 25°C (Cps)			6,000 – 8,000	10 - 18	~ 1,000
Specific gravity at 25 °C	lbs./gal (g/cc)	ASTM D792	9.6 (1.15)	7.7 (0.92)	9.1 (1.09)
Gel time at 77°F (150 grams) (25°C)	(minutes)				110-160

MECHANICAL PROPERTIES at 23 °C (**Neat** cured properties)

Hardness	(Shore D)	ASTM D-2240	
*Cure #1			86 - 90
**Cure #2			86 - 90
Flexural Strength	(psi)	ASTM D-790	
*Cure #1			11,300
**Cure #2			16,400
Flexural Modulus	(psi)	ASTM D-790	
*Cure #1			504,000
Flexural Modulus *Cure #2			442,000
Tensile Strength	(psi)	ASTM D-638	
*Cure #1			6,600
**Cure #2			11,300
Tensile Modulus	(psi)	ASTM D-638	
*Cure #1			260,000
**Cure #2			251,000
Tensile Elongation	(psi)	ASTM D-638	
*Cure #1			3.2
**Cure #2			7.0
Glass transition temperature	°F (°C) TMA	ASTM E1545	
*Cure #1			136 (58)
**Cure #2			194 (90)
Moisture Absorption *Cure #1	(%)		0.2

* Cure #1 - 7 day/R.T.
** Cure #2 – 24 hr/R.T. + 8hr/180°F (82°C)



Viscosity / Gel Profile - CR94 resin with CH94-1 fast (L 141), CH94-3 medium (L 142), CH94-6 slow (L 143) hardeners

PROCESSING

After mixing according to the indicated ratio, carry out impregnation of the reinforcements.
To ensure an optimal use and a good impregnation, please use packaging stored at a temperature above 15 ° C.

CURE CONDITIONS

In order to avoid any risk of distortion or tooling shrinkage a precise curing cycle must be observed. Demolding takes place only after a 24 hour R.T. minimum or 16 hour pre-curing at 40°C-60°C. Material can be used with R.T. cure only or with some (Post-cure) carried out.

HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products:

- Ensure good ventilation.
- Wear gloves, glasses and protective clothes.

For further information, please consult the Safety Data Sheets.

STORAGE CONDITIONS

- Product shelf life of resin and hardener is 2 years when stored in original unopened containers between 65 – 77°F (15 – 25°C). Any opened can must be tightly closed. Any opened can must be tightly closed.

PACKAGING

Packaging information on request, please contact your local sales representative or find your local contact on www.sikaadvancedresins.us

LEGAL NOTICE

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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