BUILDING TRUST

TECHNICAL DATA SHEET

SikaBiresin® CR86 with CH86-2 (Fast), CH86-3 (Medium), CH86-6 (Slow) hardeners

(FORMERLY PROINFUSION RT)

EPOXY INFUSION SYSTEM
VARIABLE HARDENERS, 250 CPS MIXED VISCOSITIES

DESCRIPTION

SikaBiresin® CR86 is designed for production of composite structures by infusion or other methods and offers three different hardener choices for variable pot life / working times for consideration of part size and gel time set-up speeds. Applications include composite tools or parts for marine, and several other areas. The system is suitable for infusion processing along with wet-layup, vacuum bagging, and RTM processes.

PROPERTIES

- High clarity
- R.T. cured and post-cured options
- Variable pot life/working time options
- Very low mixed viscosity
- Excellent ultimate properties
- Hardener blending an option

PHYSICAL PROPERTIES – CR86/**CH86-2 (Fast)**

Composition			RESIN SikaBiresin® CR86	HARDENER SikaBiresin® CH86 –2	MIXED
Mix ratio by weight			100	27	100/27
Mix ratio by volume at 25 °C			100	32	100/32
Aspect			Liquid	Liquid	Liquid
Color			Clear	Lt. amber	Lt. Amber
Viscosity at 25°C (Cps)			890	40	266
Specific gravity at 25 °C	lbs./gal (g/cc)	ASTM D792	9.5 (1.14)	7.9 (0.95)	9.11 (1.09)
Gel time at 77°F (150 grams) (25°C)	(minutes)				27.4

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

Hardness	(Shore D)	ASTM D-2240	
*Cure #1			87
**Cure #2			88
Flexural Strength	(psi)	ASTM D-790	
*Cure #1			10,162
**Cure #2			17,278
Flexural Modulus	(psi)	ASTM D-790	
*Cure #1			487,197
**Cure #2			444,808
Tensile Strength	(psi)	ASTM D-638	
*Cure #1			5,714
**Cure #2			8,653
Tensile Modulus	(psi)	ASTM D-638	
*Cure #1			266,653
**Cure #2			237,572
Tensile Elongation	(psi)	ASTM D-638	
*Cure #1			2.4
**Cure #2			4.5
Glass transition temperature	°F (°C) TMA	ASTM E1545	
*Cure #1			133 (56)
**Cure #2			183 (84)

* Cure #1 - 7 day/R.T.
** Cure #2 - 8 hr/140°F (60°C) + 8/hr/180°F (82°C)

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

Flexural Strength	(psi)	ASTM D-790	
*Cure #1			28,778
**Cure #2			30,591
Flexural Modulus	(psi)	ASTM D-790	
*Cure #1			2.28M
**Cure #2			2.03M
Tensile Strength	(psi)	ASTM D-638	
*Cure #1			36,083
**Cure #2			36,662
Tensile Modulus	(psi)	ASTM D-638	
*Cure #1			920,629
**Cure #2			965,815
Tensile Elongation	(psi)	ASTM D-638	
*Cure #1			6.6
**Cure #2			6.1

Infused laminate – 8 layer, 10 oz. glass, 0-90° rotation / Resin wt. content 28% for fast 30% for medium 25% for slow
* Cure #1 - 7 day/R.T.
** Cure #2 - 8 hr/140°F (60°C) + 8/hr/180°F (82°C)

PHYSICAL PROPERTIES – CR86/**CH86-3 (Medium)**

Composition			RESIN SikaBiresin® CR86	HARDENER SikaBiresin® CH86 –3	MIXED
Mix ratio by weight			100	27	100/27
Mix ratio by volume at 25 °C			100	32	100/32
Aspect			Liquid	Liquid	Liquid
Color			Clear	Lt. amber	Lt. Amber
Viscosity at 25°C (Cps)			890	40	250
Specific gravity at 25 °C	lbs./gal (g/cc)	ASTM D792	9.5 (1.14)	7.8 (0.94)	9.11 (1.09)
Gel time at 77°F (150 grams) (25°C)	(minutes)				96.3

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

Hardness	(Shore D)	ASTM D-2240	
*Cure #1			86
**Cure #2			88
Flexural Strength	(psi)	ASTM D-790	
*Cure #1			7,495
**Cure #2			15,419
Flexural Modulus	(psi)	ASTM D-790	
*Cure #1			440,170
**Cure #2			419,367
Tensile Strength	(psi)	ASTM D-638	
*Cure #1			3,665
**Cure #2			7,480
Tensile Modulus	(psi)	ASTM D-638	
*Cure #1			281,713
**Cure #2			254,861
Tensile Elongation	(psi)	ASTM D-638	
*Cure #1			1.4
**Cure #2			3.6
Glass transition temperature	°F (°C) TMA	ASTM E1545	
*Cure #1			124 (51)
**Cure #2			178 (81)

* Cure #1 - 7 day/R.T.
** Cure #2 - 8 hr/140°F (60°C) + 8/hr/180°F (82°C)

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

Flexural Strength	(psi)	ASTM D-790	
*Cure #1			36,650
**Cure #2			43,617
Flexural Modulus	(psi)	ASTM D-790	
*Cure #1			2.24M
**Cure #2			2.24M
Tensile Strength	(psi)	ASTM D-638	
*Cure #1			36,801
**Cure #2			36,950
Tensile Modulus	(psi)	ASTM D-638	
*Cure #1			985,417
**Cure #2			902,167
Tensile Elongation	(psi)	ASTM D-638	
*Cure #1			5.9
**Cure #2			6.1

Infused laminate – 8 layer, 10 oz. glass, 0-90° rotation / Resin wt. content 28% for fast 30% for medium 25% for slow
* Cure #1 - 7 day/R.T.
** Cure #2 - 8 hr/140°F (60°C) + 8/hr/180°F (82°C)

PHYSICAL PROPERTIES – **CR86/CH86-6 (Slow)**

Composition			RESIN SikaBiresin® CR86	HARDENER SikaBiresin® CH86 –6	MIXED
Mix ratio by weight			100	27	100/27
Mix ratio by volume at 25 °C			100	32	100/32
Aspect			Liquid	Liquid	Liquid
Color			Clear	Lt. amber	Lt. Amber
Viscosity at 25°C (Cps)			890	40	250
Specific gravity at 25 °C	lbs./gal (g/cc)	ASTM D792	9.5 (1.14)	7.8 (0.94)	9.11 (1.09)
Gel time at 77°F (150 grams) (25°C)	(minutes)				160.5

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

Hardness	(Shore D)	ASTM D-2240	
*Cure #1			88
**Cure #2			84
Flexural Strength	(psi)	ASTM D-790	
*Cure #1			7,815
**Cure #2			15,951
Flexural Modulus	(psi)	ASTM D-790	
*Cure #1			436,836
**Cure #2			432,003
Tensile Strength	(psi)	ASTM D-638	
*Cure #1			5,081
**Cure #2			10,263
Tensile Modulus	(psi)	ASTM D-638	
*Cure #1			268,352
**Cure #2			241,990
Tensile Elongation	(psi)	ASTM D-638	
*Cure #1			2.1
**Cure #2			6.5
Glass transition temperature	°F (°C) TMA	ASTM E1545	
*Cure #1			144 (62)
**Cure #2			171 (77)

* Cure #1 - 7 day/R.T.
** Cure #2 - 8 hr/140°F (60°C) + 8/hr/180°F (82°C)

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

Flexural Strength	(psi)	ASTM D-790	
*Cure #1			35,191
**Cure #2			43,617
Flexural Modulus	(psi)	ASTM D-790	
*Cure #1			2.54M
**Cure #2			2.59M
Tensile Strength	(psi)	ASTM D-638	
*Cure #1			40,147
**Cure #2			43,119
Tensile Modulus	(psi)	ASTM D-638	
*Cure #1			1.19M
**Cure #2			1.13M
Tensile Elongation	(psi)	ASTM D-638	
*Cure #1			5.9
**Cure #2			6.1

Infused laminate – 8 layer, 10 oz. glass, 0-90° rotation / Resin wt. content 28% for fast 30% for medium 25% for slow
* Cure #1 - 7 day/R.T.
** Cure #2 - 8 hr/140°F (60°C) + 8/hr/180°F (82°C)

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

- Shelf life of resin and hardeners are 12 months in original, unopened container stored in a dry 65-77°F (18-25°C) place.
- Repeated exposure to low temperatures during storage may cause the resin to crystallize. If this occurs, warm the resin to 120 - 140°F (49-60°C) and stir to dissolve the crystals. 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.

CONTACT

UNITED STATES

Sika Corporation
30800 Stephenson Highway
Madison Heights, Michigan 48071 – USA
Tel.: (+1) 248 588-2270
Fax: (+1) 248 577-0810
E-mail: axsonmh@axson.com
Website: www.sikaadvancedresins.us