

Surf Clear EVO

Epoxy system for surfboards



Sicomin Surf Clear EVO epoxy system is specially formulated for the manufacturing of surf boards.

Surf Clear EVO is suitable for hand lay up of glass, carbon, aramid, natural and synthetic fibers.

Surf Clear EVO is compatible with all commercial foams: polystyrene, polyurethane, cross-linked & linear PVC foams and others.

Surf Clear EVO is compatible with all typical fillers used in the surf industry.

Characteristics:

High mechanical performance epoxy system recommended for surfboard production.

Yields surfboards with a flexible touch, high temperature and UV stability.

High surface and plug finishing, for high gloss requirement.

Other applications: surf repairs, fin boxes & plugs, pattern and model coating, etc...

Low odor and reduced skin aggression for a better work environment.

Hardeners:

3 hardeners EVO are available with the same mixing 2 / 1 ratio by volume.

- | | |
|-------------------|--|
| Medium | hardener is designed for big boards or high ambient temperature applications (over 35 °C). |
| Fast | hardener is designed for classic boards in mild temperature working conditions (around 20°C). |
| Super-Fast | hardener is designed for fast lamination, gloss and repairs or low temperature application conditions. |

Advices for application:

Work in a clean environment with heating facility.

Ideal working temperature from 18 °C to 30 °C.

Maintain a constant temperature during lamination.

Avoid high ambient humidity.

Avoid exposure to U.V. during the cure. Laminates and coatings benefitting from a sun free post cure or polymerized for at least 7 days at 18°C will obtain greater U.V. resistance and mechanical properties

Do not dilute with solvents. Please consult our technical assistance.

The use of compatible pigments is possible.

Keep packaging well-sealed as hardeners are sensitive to carbonic gas and humidity.

A polyurethane or other top coat paint can (for best UV protection) be applied, without primer, after sanding the final layer of **Surf Clear EVO**.

OH additive, the shiniest Surf resin in the world

Sicomin offers the possibility to use an extra additive to mix with the resin Surf Clear EVO to improve the light radiance of the laminates applied on top of white PS or PU foams.

Used for colored board, OH additive can modify the color perception (blue effect with carbon or pink effect with wood or linen fabrics), please test before to avoid any surprises.

Mixing: 1g of OH for 1kg of resin SR Surf Clear EVO
First mix resin and OH additive, then mix with hardener


Green Technology:

SICOMIN is heavily involved in green chemistry. When technology and availability of raw materials allows, we choose raw materials from biomass sourcing.

Surf Clear EVO epoxy resin is manufactured with a bio-based carbon content of about 40 %.




Epoxy resin Surf Clear EVO

Aspect		Liquid
Color		Light purple
Color Gardner		2 maximum
Viscosity (+ 20 % mPa.s)	@ 15 °C	5 100
	@ 20 °C	2 700
	@ 25 °C	1 550
	@ 30 °C	950
	@ 40 °C	400
% bio-based Carbon content		36 - 45 %
Density ± 0.01	@ 20 °C	1.18
Refractive index	@ 25 °C	1.5452
Storage stability	Ambiant	2 years minimum Cristalization free

Hardeners EVO

Reference		SD EVO Medium	SD EVO Fast	SD EVO Super Fast
Aspect / colour		Clear liquid	Clear liquid	Clear liquid
Color Gardner		1 max	1 max	1 max
Viscosity (+ 20 % mPa.s)	@ 15 °C	215	450	650
	@ 20 °C	145	290	400
	@ 25 °C	100	190	270
	@ 30 °C	70	130	180
	@ 40 °C	40	68	90
Storage stability	15 to 25 °C	24 months Hardeners react with carbon dioxide and moisture. Need to be kept in its original closed container. Avoid to a maximum any contact with air. If the aspect becomes cloudy, do not use		
Density ± 0.01	@ 20 °C	0.99	1.01	1.02
Refractive index	@ 25 °C	1.5118	1.5181	1.5234

SR Surf Clear EVO / SD EVO Mixes

		SR SC EVO / SD EVO Medium	SR SC EVO / SD EVO Fast	SR SC EVO / SD EVO Super Fast
Mixing ratio by weight		100 g / 39 g	100 g / 41 g	100 / 43 g
Mixing ratio by volume		100 ml / 50 ml or 2 / 1		
% bio-based Carbon content		25 – 33 %		
Initial viscosities (± 20 % mPa.s)	@ 20 °C	1 500	2 000	1 630
	@ 30 °C	600	660	900
	@ 40 °C	310	350	350
Gel time	@ 20 °C	190'	160'	130'
	@ 30 °C	110'	95'	75'
	@ 40 °C	70'	60'	45'

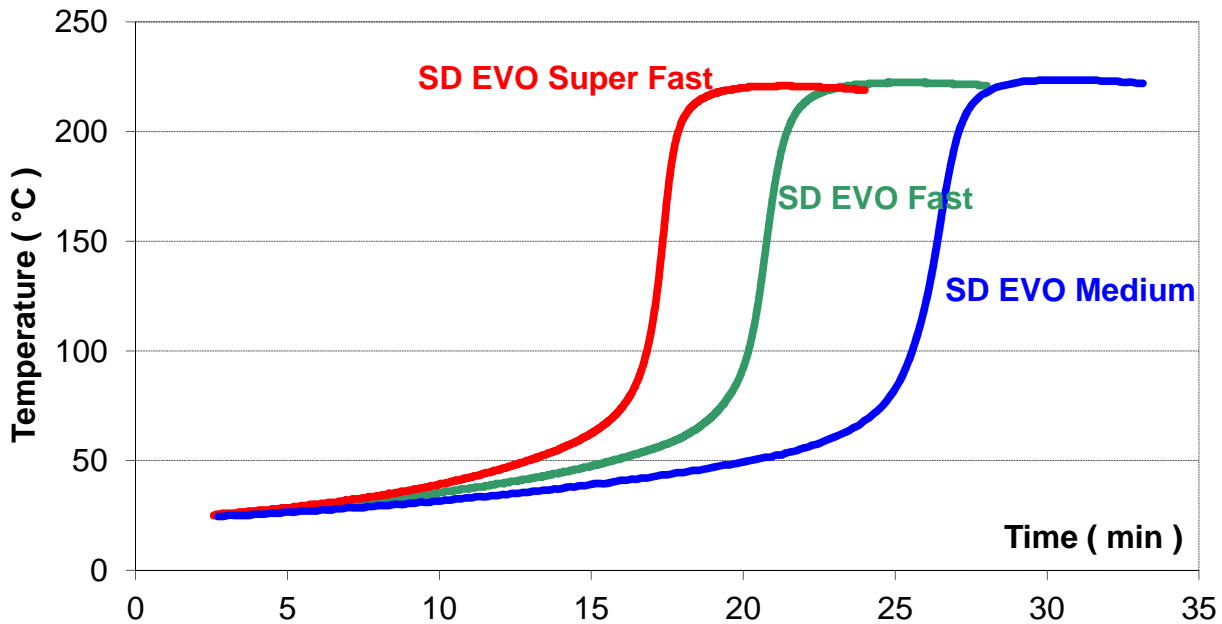
Curing profile :

Wait before post-curing : 12 hours
 Minimum cure : 12 hours 40 °C
 Optimum cure : 8 hours 60 °C

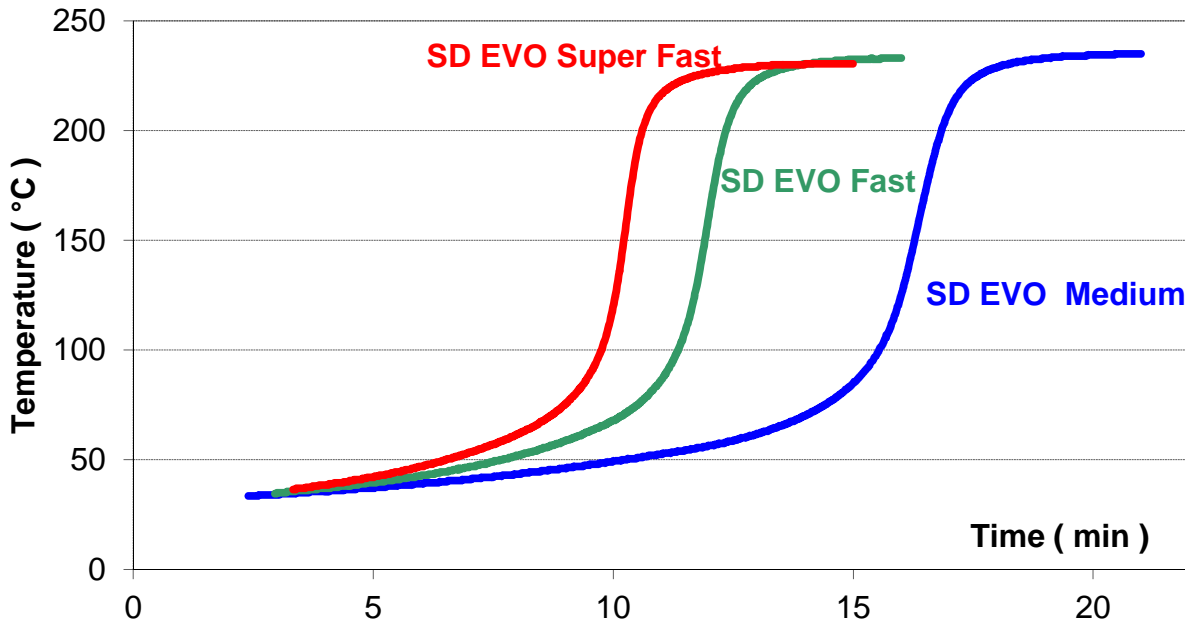
Pot life / Reactivity on 150 gr mix

		SR SC EVO / SD EVO Medium	SR SC EVO / SD EVO Fast	SR SC EVO / SD EVO Super Fast
Exothermic temperature (°C)	@ 20 °C	220	220	220
	@ 30 °C	230	230	230
Time to reach the exothermic peak	@ 20 °C	30 '	24 '	20 '
	@ 30 °C	20 '	15 '	12 '
Time to reach 50 °C	@ 20 °C	20 '	16 '	13 '
	@ 30 °C	10 '	8 '	6 '

@ 20 °C

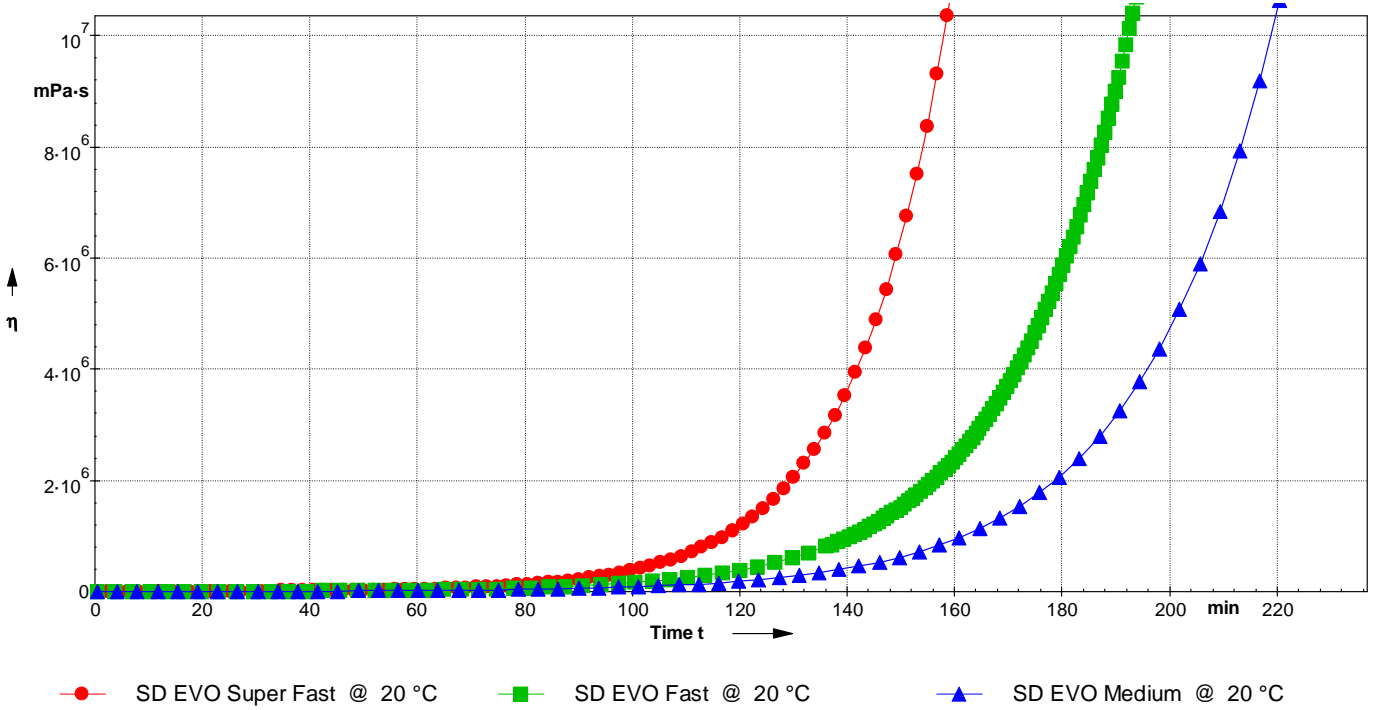


@ 30 °C

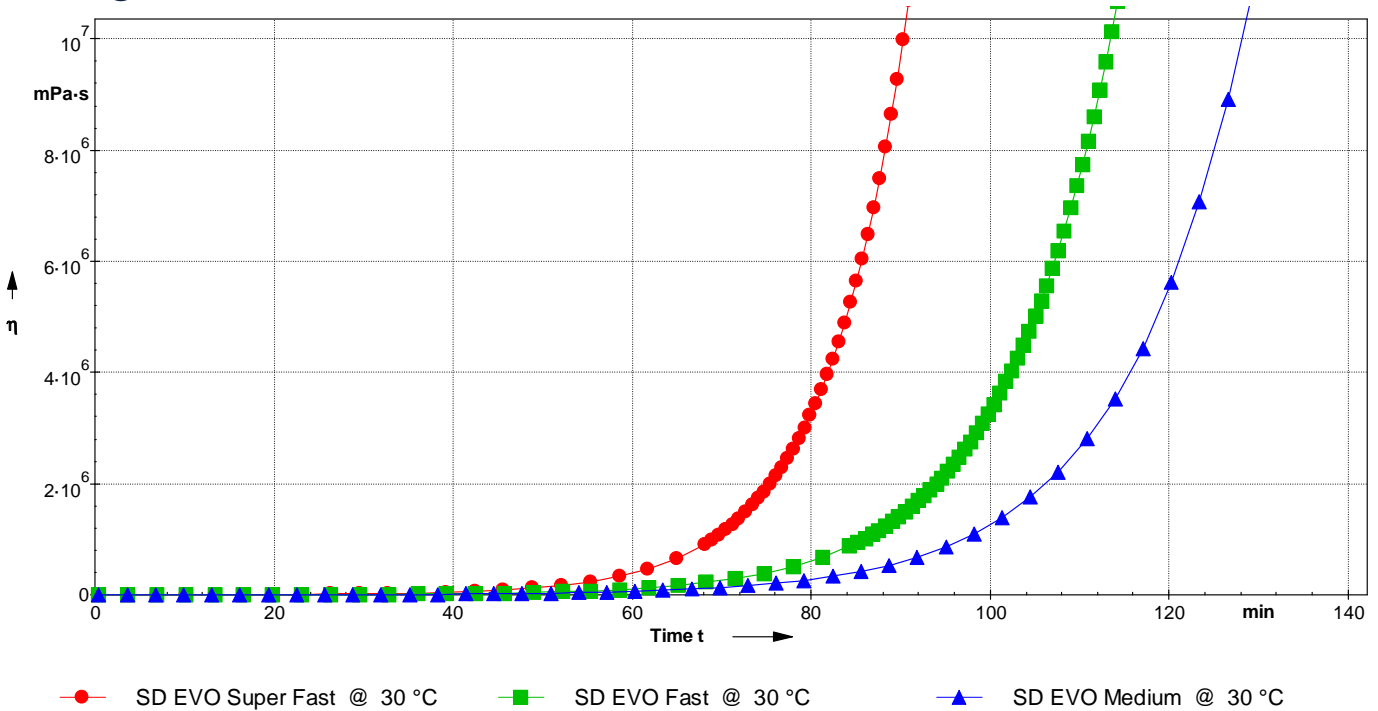


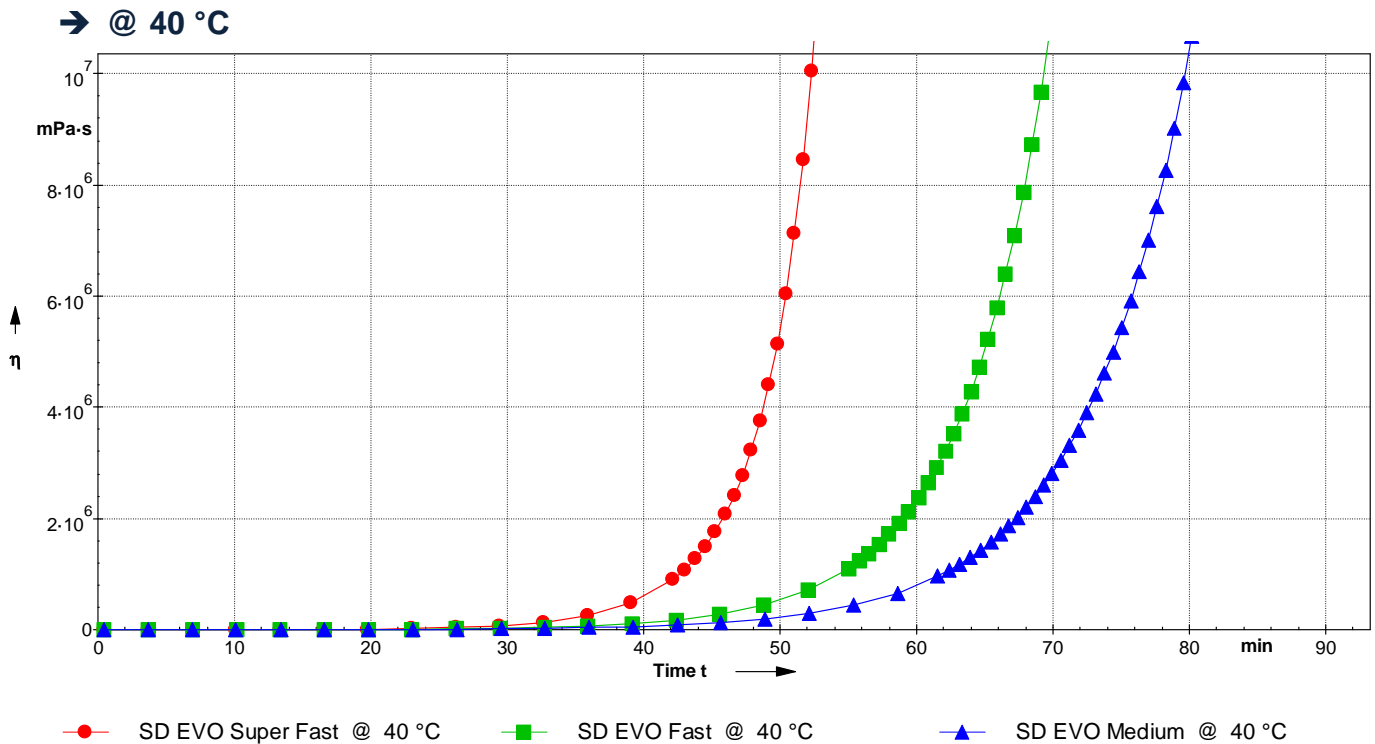
Viscosities increase on 1 mm film thickness

→ @ 20 °C



→ @ 30 °C





Tests carried out on samples of pure cast resin, without prior degassing, between steel plates.

Measures undertaken according to the following norms:

Tension : Iso 527 - 2

Flexion : Iso 178

Charpy impact strength: NF T 51-035

Shear Strength ASTM D 732 - 93

Compressive ISO 604

Water absorption: Internal. Polymerisation according to cycle, machining, weighing, time spent in distilled water at 70 °C / 48 hours, weighing 1 hour after emerging,

Glass transition DSC : ISO 11357-2 : 1999 -5°C to 180°C under nitrogen gaz

Tg1 or Onset : 1st point at 20 °C/mn Tg1 maximum or Onset : second passage

Glass transition DTMA: ISO 11357-1 - TG onset G' Temperature ramp 0°C to 180 °C @ 2°C/min
 ASTM D4065 - TG peak G''

Physical tests according standard ::

Gardner color: NF EN ISO 4630 Visual method

Refractive index : NF ISO 280

Viscosity: NF EN ISO 3219 Rheometer 50 mm, shear 10s⁻¹

Density: NF EN ISO 2811-1 Pycnometer

Gel time : Cross G' G'' / rheometer CP50 - Shear rate 10 s⁻¹

GreenCarbon content: ASTM D6866 or XP CEN/TS 16640 Avril 2014

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SICOMIN reserves the right to change the properties of its products. All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data and tolerance may vary due to circumstances beyond our control.

If our responsibility should nevertheless be involved, it would be, for all the damages, limited to the value of the goods supplied by us and implement by the customer. We guaranty the non-reproachable quality of our products, in the general context of sales 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.