

## SiPreg SR 8500 / KTA 31x

### Epoxy systems for “In House” Prepregging

Systems for in house prepregging.

Low viscosity systems suitable for manual or mechanical impregnation of fabrics, filaments, braids, stitched reinforcements.

Suitable for filament winding.

90 °C maximum working temperature

Post curing can be between 80 °C up to 150 °C

Two component systems without solvent, without reactive diluent, with no toxic nor CMR components.

The 2 components are stable in storage for at least one year

Store the prepregged fabrics away from humidity

### Epoxy Resin SR 8500

Aspect		Liquid
Color		Clear to light yellow
Color Gardner		2 maximum
Viscosity (mPa.s)	@ 15 °C	24 500 ± 3 000
Rheometer	@ 20 °C	9 800 ± 1 000
CP 50 mm	@ 25 °C	4 500 ± 800
Shear gradient	@ 30 °C	2 300 ± 400
10 s <sup>-1</sup>	@ 40 °C	750 ± 200
Dry Extract		100 %
Density :	@ 20 °C	1.176 ± 0.05
Picnometer		
NF EN ISO 2811-1		
Refraction Index		1.5760
Storage Stability :		24 month, does not cristalize

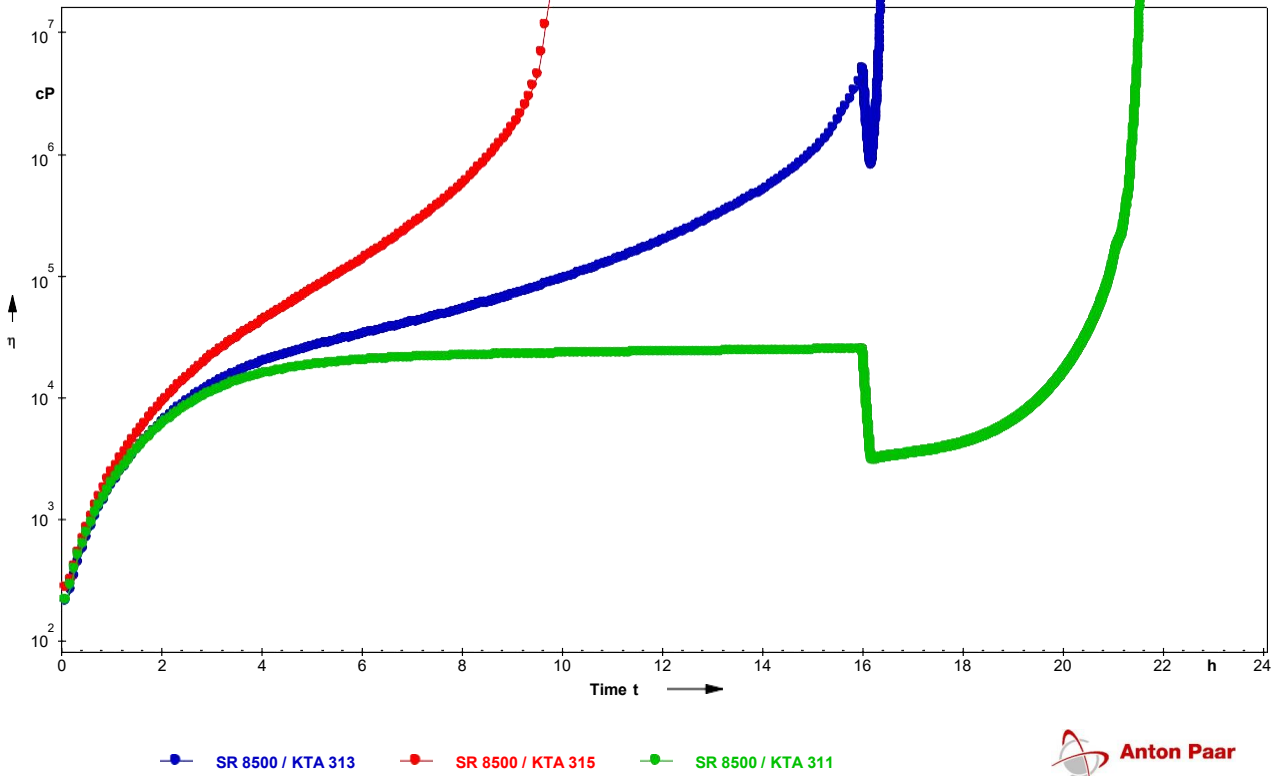
### Hardeners KTA 31x

		KTA 317	KTA 315	KTA 313	KTA 311
Aspect / color:		Viscous liquid	Viscous liquid	Viscous liquid	Viscous liquid
Color		White	White	White	White
Reactivity		Very fast	Fast	Slow	Very slow
Dry extract		100 %			
Storage stability		Decants, thus mix before use Do not leave exposed to air, close container after use			
Viscosity (mPa.s)					
Rheomèter	@ 15 °C	16 000 ± 3 000	10 000 ± 2 000	11 000 ± 2 000	14 000 ± 3 000
CP 50 mm	@ 20 °C	12 000 ± 2 000	6 500 ± 1 000	7 700 ± 1 500	9 000 ± 2 000
Shear gradient 10 s <sup>-1</sup>	@ 25 °C	9 000 ± 1 500	4 800 ± 1 000	5 700 ± 1 000	6 800 ± 1 500
	@ 30 °C	7 500 ± 1 500	3 800 ± 800	4 500 ± 800	6 100 ± 1 000
	@ 40 °C	5 500 ± 1 000	2 800 ± 600	3100 ± 600	5 500 ± 1 000
Density	@ 20 °C	1.07	1.13	1.13	1.13
Picnometer					
NF EN ISO 2811-1					

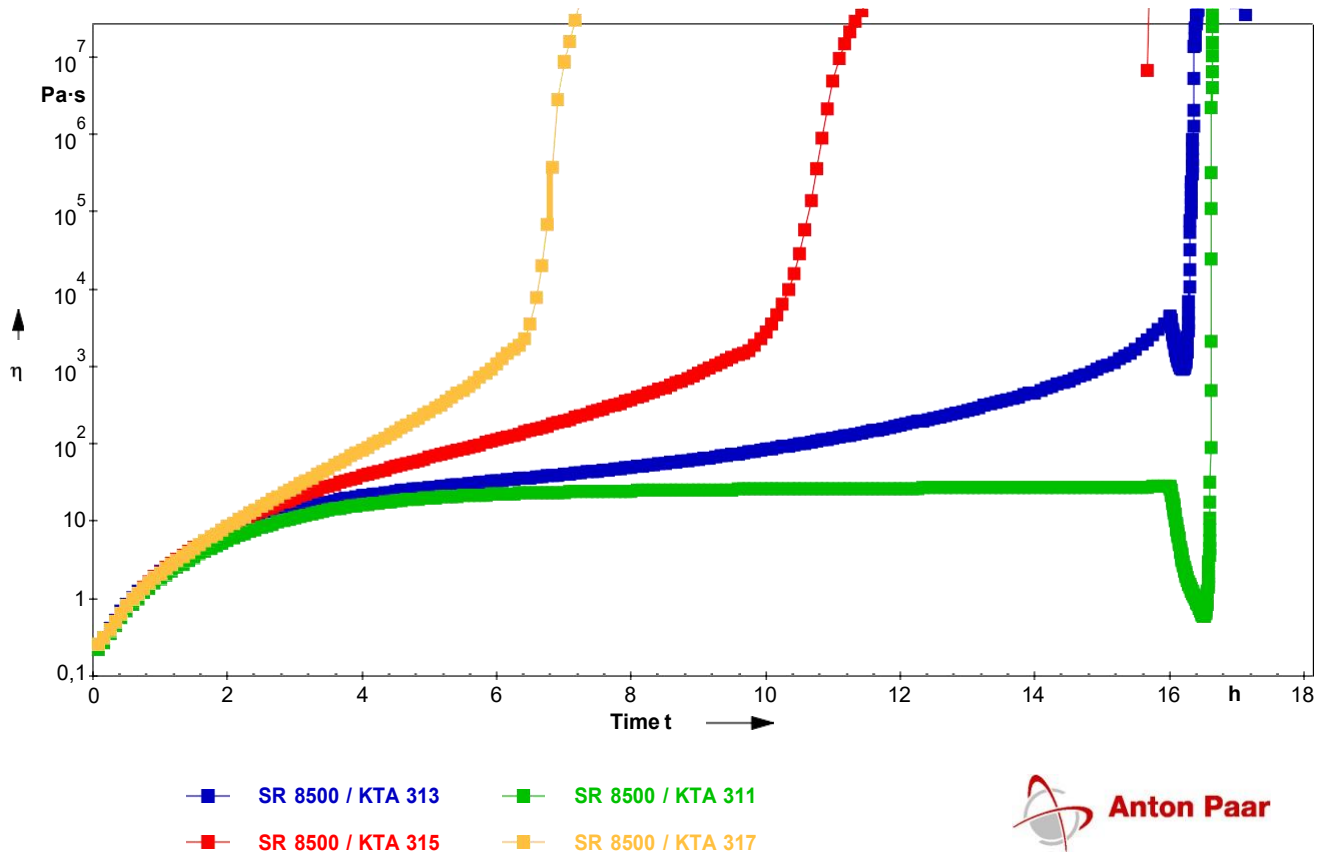
### Mix SR 8500 / KTA 31x

	SR 8500 / KTA 317	SR 8500 / KTA 315	SR 8500 / KTA 313	SR 8500 / KTA 311
Mixing ratio by weight	<b>100 / 21</b>			
Mixing ratio by volume	<b>100 / 23</b>	<b>100 / 22</b>	<b>100 / 22</b>	<b>100 / 22</b>
Initial Viscosity (mPa.s)				
Rheometer @ 20 °C	5 600	6 600	7 000	5 700
PP 50 mm @ 30 °C	1 800	2 200	2 300	3 400
Shear gradient @ 40 °C 10 s <sup>-1</sup>	780	1 000	1 000	1 000
Minimum ageing required before process	24 hrs @ 23 °C	24 hrs @ 23 °C	24 hrs @ 23 °C	48 hrs @ 23 °C or 16 hrs 40 °C
Storage stability of the prepregged fabrics				
@ -18 °C	6 months	6 months	1 year	1 year
@ 20 °C	7	15	60 days	> 60 days
@ 40 °C	2	5	10 days	> 20 days
Flow	None	None	Yes	Important

**Viscosity evolution during 16 hours @ 60 °C, then cured @ 80°C**

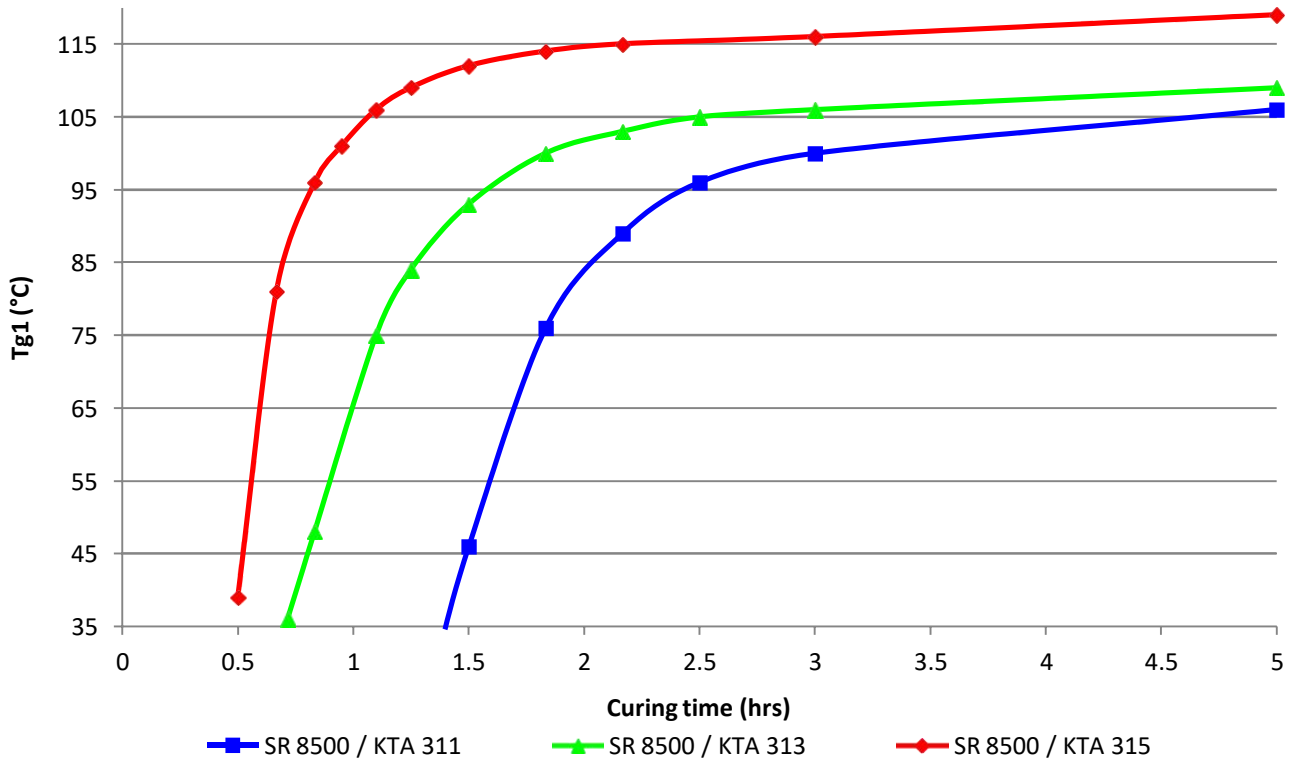


**Viscosity evolution during 16 hours @ 60 °C, then cured @ 120°C**

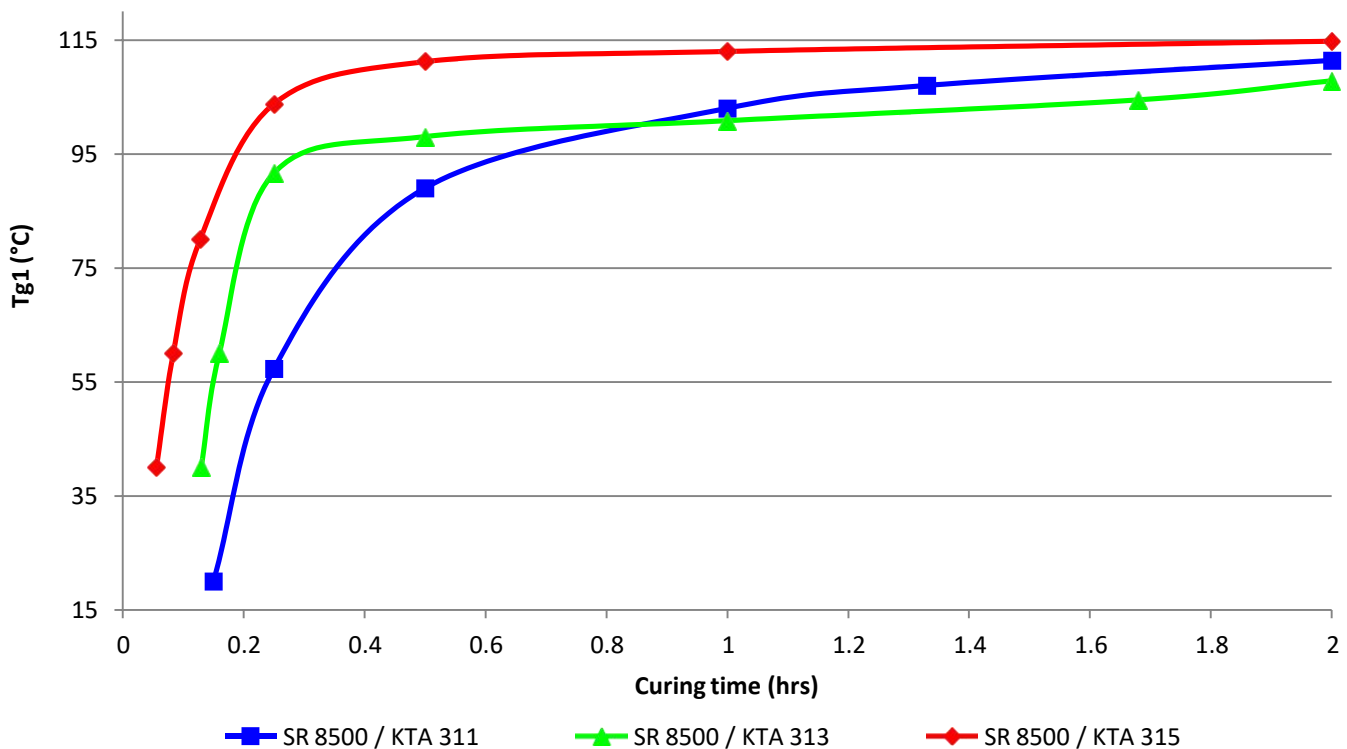


**Kinetic : Evolution of Tg1 / onset @ 100 & 120 °C**

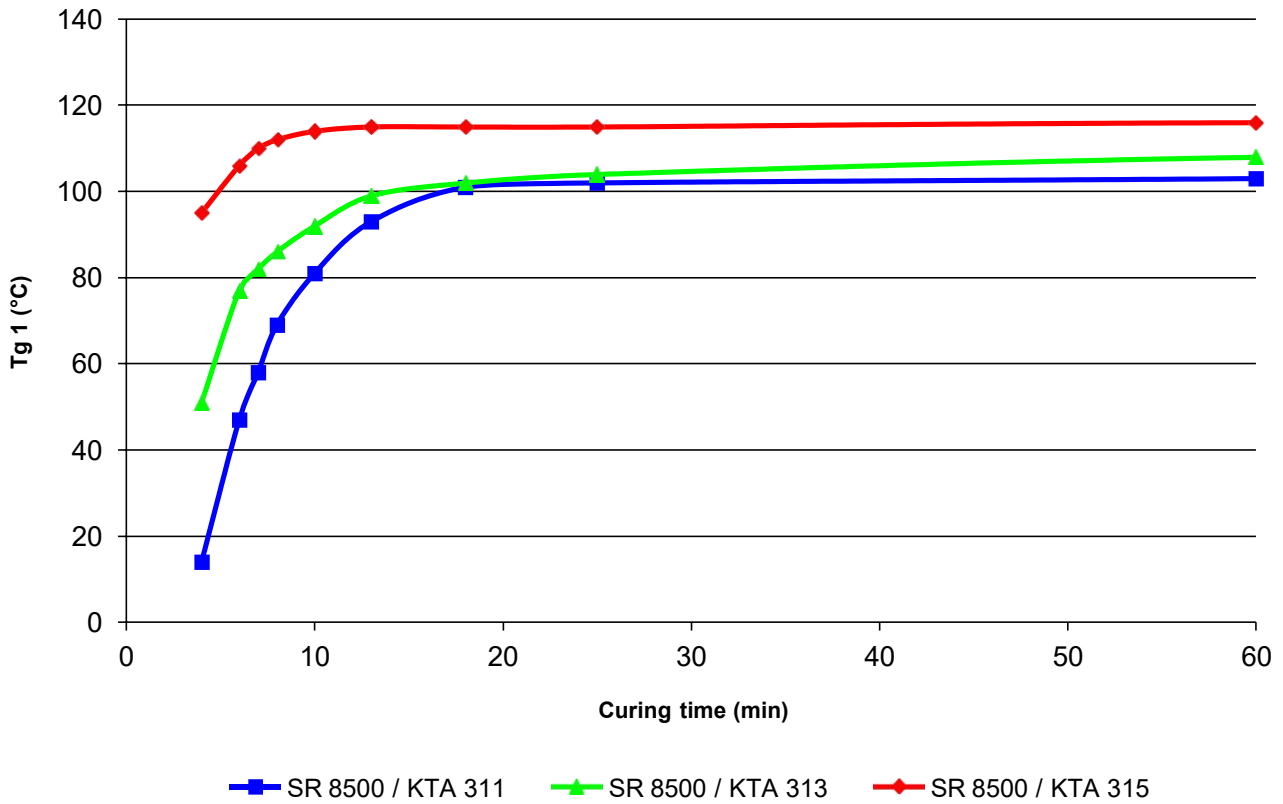
**Kinetic @ 100 °C**



**Kinetic @ 120 °C**



**Kinetic @ 130 °C**



**Curing time**

	<b>SR 8500 / KTA 311</b>	<b>SR 8500 / KTA 313</b>	<b>SR 8500 / KTA 315</b>
@ 100 °C	5 h	3 h 30 min	2 h
@ 120 °C	2 h	1 h 30 min	1 h
@ 130 °C	1 h	40 min	30 min

**Mechanical properties of pure epoxy (non reinforced) :**

		SR 8500 / KTA 315	SR 8500 / KTA 313	SR 8500 / KTA 311
<b>Curing cycle</b>		12h à 30°C + 4h à 60°C + 2h à 120°C	12h à 30°C + 4h à 60°C + 2h à 120°C	12h à 30°C + 4h à 60°C + 2h à 120°C
<b>Traction</b>				
Modulus	N/mm <sup>2</sup>	3300	3700	3600
Maximum Resistance	N/mm <sup>2</sup>	75	65	80
Breaking Strength	N/mm <sup>2</sup>	72	65	80
Elongation at maximum load	%	3,5	2	2,8
Elongation at break	%	3,5	2	2,8
<b>Flexion</b>				
Modulus	N/mm <sup>2</sup>	3300	3700	3500
Maximum Resistance	N/mm <sup>2</sup>	129	152	153
Elongation at maximum load	%	5	5,8	5,9
Elongation at break	%	5,2	6,5	7,1
<b>Choc Charpy</b>				
Résilience	kJ/m <sup>2</sup>	14	14	17
<b>Transition vitreuse</b>				
Tg1 / onset	°C	116	104	107
Tg1 max	°C	116	112	113

Essais réalisés sur des éprouvettes de résine pure coulée, sans dégazage préalable, entre des plaques en acier.

Mesures effectuées suivant les normes :

Traction : NF T51-034

Flexion : NF T51-001

Compression: NF T 51-101

Choc Charpy: NF T51-501

Transition vitreuse: ISO 11357-2 : 1999 -5°C/180°C sous azote

Tg1 ou Onset : 1<sup>er</sup> point à 20 °C/mn

Tg1 maximum ou Onset : deuxième passage