

## **Si Preg SR 1526 / KTA 31x** **Fire resistant 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,

RoHS compliance regulation

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

Store the prepregged fabrics away from humidity

### **Fire resistance**

Epoxy intumescent type systems, self-extinguishing, no flame, low smoke toxicity.

Subjected to high temperature or fire, laminate a solid crust that insulates and protects the heart

Tests Far 25 / Heat release:

- Meets the requirements of Regulation 25 CS / FAR 25 § 25-853 (a) App. Part.I F (a1) (ii) for flammability 12 seconds
- Requirements Document for ABD 0031 smoke and toxicity of smoke with and without flames
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- Does not meet the requirements CS 25 / FAR25 25.853 (d) share app.F IV caloric release (HRR)  
CEAT Toulouse PV-14-DGATA-MTF-P1400003001003-FA of 13 February 2014

## Epoxy Resin SR 1526

Aspect		Liquid
Color		Clear to light yellow
Color Gardner		2 maximum
Viscosity (mPa.s)	@ 15 °C	84 000 ± 17 000
	@ 20 °C	40 000 ± 8 000
	@ 25 °C	21 000 ± 4 000
	@ 30 °C	13 000 ± 3 000
	@ 40 °C	5 500 ± 1 00
Dry Extract Density :	@ 20 °C	100 %
		1.29 ± 0.01
Refraction Index		1,5738
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)	@ 15 °C	16 000 ± 3 000	10 000 ± 2 000	11 000 ± 2 000	14 000 ± 3 000
	@ 20 °C	12 000 ± 2 000	6 500 ± 1 000	7 700 ± 1 500	9 000 ± 2 000
	@ 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

## Mix SR 1526 / KTA 31x

	SR 1526 / KTA 317	SR 1526/ KTA 315	SR 1526 / KTA 313	SR 1526 / KTA 311
Mixing ratio by weight	<b>100 / 10</b>			
Initial Viscosity (mPa.s)				
@ 20 °C	35 500	26 000	28 000	18 000
@ 30 °C	12 000	12 000	13 000	11 000
@ 40 °C	5 000	3 100	3200	5 400
Exotherm on 500 g mix @ 30 °C	Exotherm temperature: 42 °C Time to reach the exotherm: 9 hrs			
Minimum ageing required before process	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 days	15 days	60 days	> 60 days
@ 40 °C	2 days	5 days	10 days	> 20 days
Flow	None	None	Yes	Yes

Tests carried out in accordance with the following norms:

Gardner Color : NF EN ISO 4630 Visual method

Refractive Index : NF ISO 280

Determination of viscosities : NF EN ISO 3219 Rheometer 50 mm shear rate 10s<sup>-1</sup>

Density : NF EN ISO 2811-1 Pyknometer method

## Minimum curing cycles :

	SR 1526 / KTA 317	SR 1526 / KTA 315	SR 1526 / KTA 313	SR 1526 / KTA 311
@ 70 °C	30 hrs	/	/	/
@ 80 °C	16 hrs	24 hrs	/	/
@ 90 °C	7 hrs	8 hrs	10 hrs	12 hrs
@ 100 °C	2 hrs 45'	3 hrs	3 hrs 30	5 hrs
@ 110 °C	80	90	3 hrs	4 hrs
@ 120 °C	40	45'	90'	2 hrs
@ 130 °C	20	25'	40'	75'
@ 140 °C	10	12	15	50'
@ 150 °C	5'	5'	10	20'

## Mechanical properties of pure epoxy (non reinforced)

	SR 1526 / KTA 315				SR 1526 / KTA 313				SR 1526 / KTA 315				
	2 hrs 120 °C	Wet	4 hrs 100 °C	Wet	2 hrs 120 °C	Wet	4 hrs 100 °C	Wet	2 hrs 120 °C	Wet	4 hrs 100 °C	Wet	
<b>Curing schedule</b>													
<b>Water absorption</b>	%	0.88		0.78		0,43		0.80		1.24		1.13	
<b>Traction</b>													
Modulus	N/mm <sup>2</sup>	3 800	3 400	3 900	3 300	5 900	6 300	6 700	4 300	4 550	3 100	4 500	3 500
Maximum Resistance	N/mm <sup>2</sup>	25	19	26	22	31	31	35	29	30	26	26	26
Breaking Strength	N/mm <sup>2</sup>	25	19	26	21	31	30	34	29	30	26	26	26
Elongation at maximum load	%	0.7	0.6	0.7	0.7	0,7	0,8	0,7	0,8	0.8	0.9	0.6	0.8
Elongation at break	%	0.7	0.6	0.7	0.7	0,7	0,8	0,7	0,8	0.8	0.9	06	0.8
<b>Flexion</b>													
Modulus	N/mm <sup>2</sup>	3 700	2 700	3 500	2 800	4 150	3 500	4 300	3 200	3 500	2 500	3 900	2 900
Maximum Resistance	N/mm <sup>2</sup>	66	47	49	41	70	68	57	51	56	42	68	56
Elongation at maximum load	%	1.7	1.6	1.2	1.3	1,6	1,9	1,2	1,4	1.5	1.5	1.7	1.8
Elongation at break	%	1.7	1.6	1.2	1.3	1,6	1,9	1,2	1,4	1.5	1.5	1.7	1.8
<b>Compression</b>													
Stress at yield	MPa	107	104	107	103	129	123	128	122	113	109	118	104
Strain at yield	%	11	16	10	9	13	9	9	9	11	12	9	11
<b>Choc Charpy</b>													
Resilience	kJ/m <sup>2</sup>	4	4	5	3	5	4	4	5	5	4	6	5
<b>Glass Transition</b>													
Tg1 / onset	°C	124	102	123	101	122	116	121	94	119	102	117	90
Tg1 max	°C	119	108	117	104	118	114	117	100	117	100	116	98

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

Mesures effectuées suivant les normes :

<b>Traction :</b> NF T51-034 <b>Flexion :</b> NF T51-001 <b>Compression:</b> NF T 51-101 <b>Choc Charpy:</b> NF T51-501 <b>Wet test</b> Internal. After the cure : machining, weighing, stay in distilled water at 70 ° C / 48 hrs Then, drying 24 h at 40 ° C, weighing , mecanical tests	<b>Glass transition</b> ISO 11357-2 : 1999 -5°C/180°C under nitrogen Tg1 ou Onset : 1er point at 20 °C/mn Tg1 maximum or Onset : second run
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