

## SR 1121 / SD 477x

### Hand laminating Fire Retardant Epoxy system

- Low viscosity, good wetting-out properties.
- Halogen free fire retardant system
- Low smoke opacity and toxicity.
- High fire resistance with **SC FW16** coating (ASTM E84 class A) or **SGi 128** epoxy gel-coat.

#### Guidelines

- No filtering
- Use a stirrer with high shear to homogenize resin part prior to use

## Fire resistant Epoxy resin SR 1121

Appearance	White viscous liquid	
Storage stability	2 years @ 20 °C Stir thoroughly before use	
Viscosity (mPa.s)	@ 15 °C	22 500 ± 4 500
Rheometer	@ 20 °C	11 000 ± 2 200
CP 50 mm	@ 25 °C	5 900 ± 1 200
Shear rate 10 s <sup>-1</sup>	@ 30 °C	3 500 ± 700
	@ 40 °C	1 550 ± 310
Density	@ 20 °C	1,40 ± 0,02
Pycnometer (ISO 2811-1)		

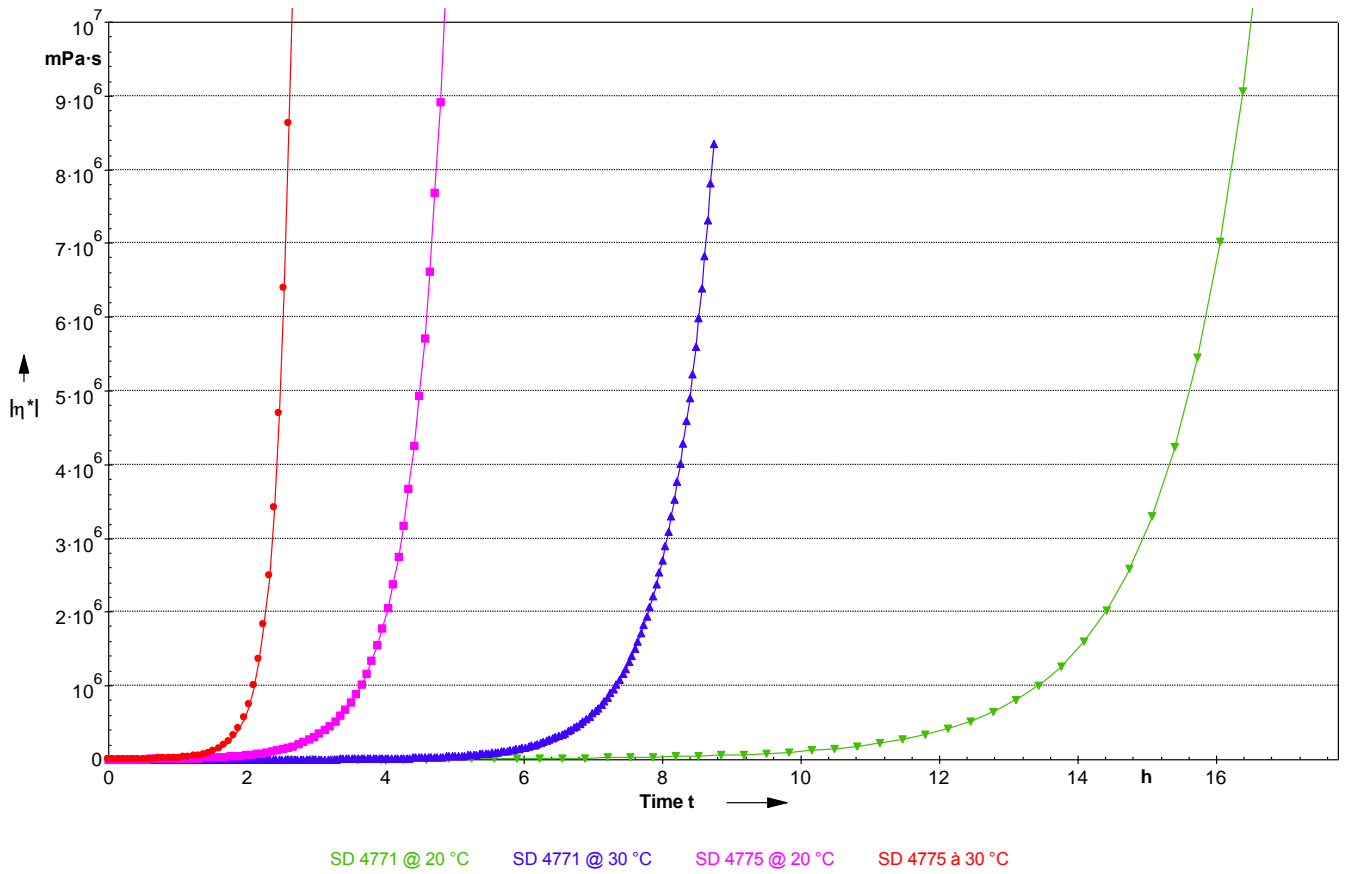
## Hardeners SD 477x :

		<b>SD 4775</b>	<b>SD 4771</b>
Aspect / color		Clear Liquid	Clear to red Liquid
Gardner ASTM D1544 Disc 4/30		5 maximum	12 maximum
Reactivity levels		Medium	Ultra-slow
Viscosity (mPa.s)	@ 15 °C	285 ± 60	13 ± 3
Rheometer	@ 20 °C	190 ± 40	11 ± 2,5
CP 50 mm	@ 25 °C	130 ± 30	9 ± 2
Shear rate 10 s <sup>-1</sup>	@ 30 °C	95 ± 20	7 ± 1,5
	@ 40 °C	55 ± 10	1,5 ± 1
Density	@ 20 °C	1,01 ± 0,01	0,95 ± 0,01
Pycnometer (ISO 2811-1)			

## Blends Epoxy SR 1121 / SD 477x

		<b>SR 1121 / SD 4775</b>	<b>SR 1121 / SD 4771</b>
Appearance uncured		Whitish liquid	Whitish liquid
Mixing ratio		<b>100 / 16</b> <b>4 / 1</b>	<b>by weight</b> <b>by volume</b>
Viscosity (mPa.s)			
Rheometer			
CP 50 mm	@ 20 °C	3 750 ± 750	1 290 ± 250
Shear rate 10 s <sup>-1</sup>	@ 30 °C	1 325 ± 265	470 ± 100
Density	@ 20 °C	1,36 ± 0,02	1,35 ± 0,02

**Increase of viscosity on 1 mm film @ 20 and 30 °C**



## Mechanical properties on cast resin

Curing schedule	Unit	SR 1121 / SD 4775		SR 1121 / SD 4771	
		8 h @ 23 °C 16 h @ 60 °C	8 h @ 23 °C 4 h @ 60 °C 4 h @ 80 °C	8 h @ 23 °C 16 h @ 60 °C	8 h @ 23 °C 4 h @ 60 °C 4 h @ 80 °C
<b>Tensile</b>					
Modulus of elasticity	N/mm <sup>2</sup>	4 700	5 000	5 000	6 140
Maximum strength	N/mm <sup>2</sup>	47	49	45	40
Strength at break	N/mm <sup>2</sup>	47	49	45	39
Deformation at max load	%	1,5	1,7	1,7	1,1
Deformation at break	%	1,5	1,7	1,7	1,1
<b>Flexion</b>					
Modulus of elasticity	N/mm <sup>2</sup>	5 070	5 040	5 020	4 350
Maximum strength	N/mm <sup>2</sup>	83	88	81	94
Strength at break	N/mm <sup>2</sup>	83	88	81	94
Deformation at max load	%	2,0	2,1	2,0	2,6
Deformation at break	%	2,0	2,1	2,0	2,6
<b>Compression</b>					
Maximum strength	N/mm <sup>2</sup>	112	112	105	106
Deformation at max load	%	12	15,5	12	12
<b>Shear</b>					
Maximum strength	N/mm <sup>2</sup>	49	49	46	48
<b>Charpy impact strength</b>					
Resilience	kJ/m <sup>2</sup>	13	16	11	16
<b>Glass transition</b>					
DSC - T <sub>G1</sub> onset/ T <sub>Gmax</sub>	°C	79 / 83	86 / 85	80 / 82	80 / 83
DTMA - T <sub>G</sub> onset (Teig)	°C	78	85	69	81
DTMA - T <sub>G</sub> tan δ	°C	89,5	101	89	94

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  
Compression: ISO 604  
Water absorption: Internal. Polymerization 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 gas  
 $T_{G1}$  or Onset: 1<sup>st</sup> point at 20 °C/min       $T_{G1}$  maximum or Onset: second passage

Glass transition DTMA: ISO 11357-1 -  $T_G$  onset G'      Temperature ramp 0 °C to 180 °C @ 2°C/min  
ASTM D4065 -  $T_G$  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 10 s<sup>-1</sup>  
Density: NF EN ISO 2811-1      Pycnometer  
Gel time: Cross G' G''      Rheometer CP50 - Shear rate 10 s<sup>-1</sup>  
Green Carbone content: ASTM D6866 or XP CEN/TS 16640 Avril 2014

#### LEGAL NOTES:

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