

## 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.

#### 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)		

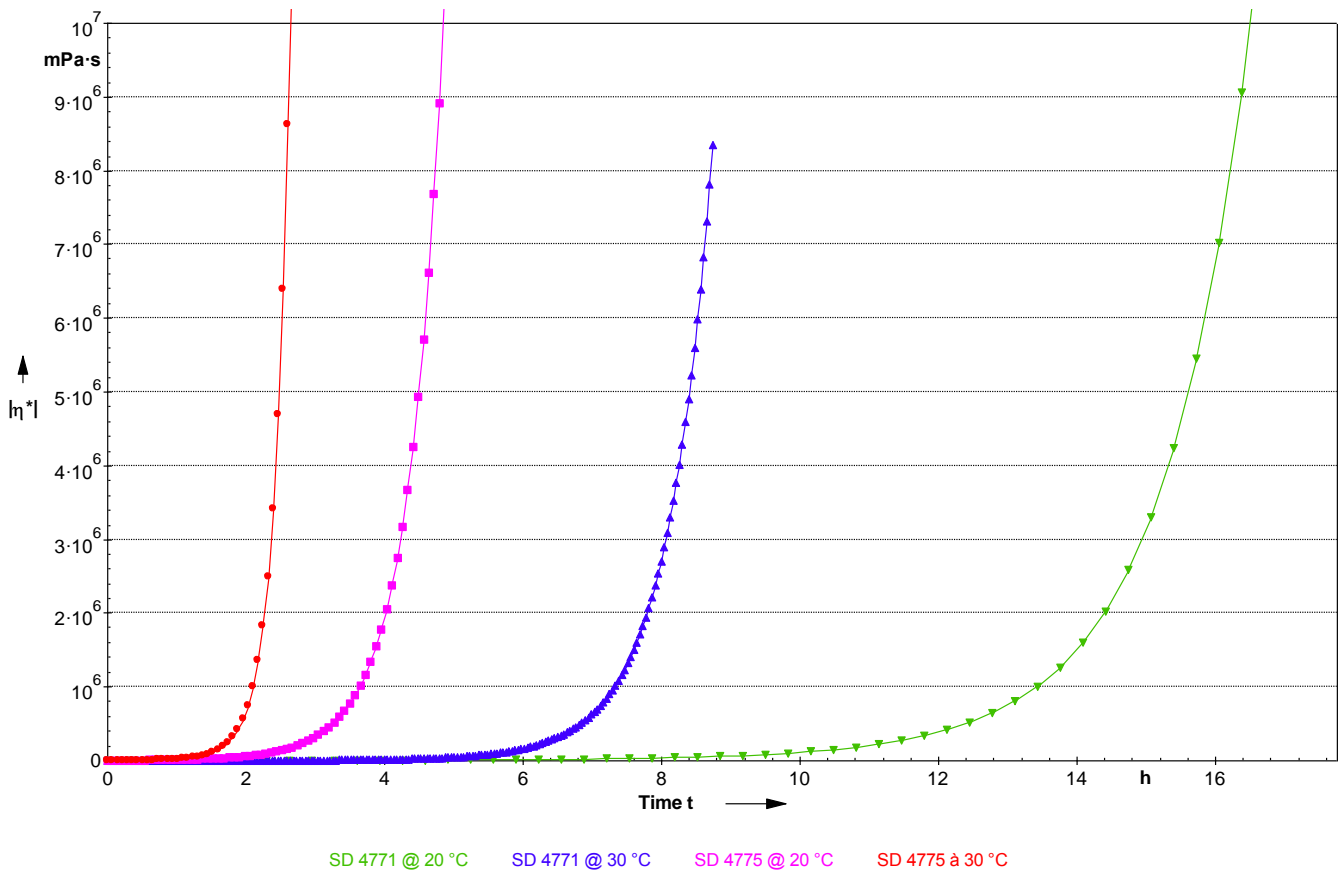
#### Hardeners SD 477x :

		<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

	SR 1121 / SD 4775	SR 1121 / SD 4771
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

Tensile: ISO 527-2  
Flexion: ISO 178  
Compression: ISO 604  
Shear: ASTM D732-93  
Charpy impact strength: NF T 51-035  
DSC glass transition: ISO 11377-2:1999 -5°C to 180°C under nitrogen gas  
T<sub>G1</sub> or Onset: 1<sup>st</sup> run at 20 °C/min  
T<sub>G1</sub> maximum or Onset: 2<sup>nd</sup> run at 20 °C/min  
Viscosity: Rheometer - CP 50 mm - Shear rate 10 s<sup>-1</sup>  
Density: ISO 2811-1 (Pycnometer)  
Gel time: Crossing of the G'G' curves method