

SR 1710 inj / SD 7820

Epoxy system for infusion and injection processes

Description

Two components epoxy system

Specially formulated with a low viscosity for RTM processes as injection, injection assisted by vacuum or infusion.

Reactivity of SR 1710 / SD 7820 is adapted for large parts.

High mechanical properties, specially on shear strength.

Excellent retention of the mechanical properties under water.

SR 1710 / SD 7820 has a high Tg of 130°C after post-cure, it permits the manufacturing of tooling by infusion.

Epoxy resin SR 1710 Injection

Aspect / colour		liquid / yellow	
Viscosities (m.Pas)	@ 20 °C	1450 ± 150	Mobile LV3 60 rev / min ISO 2555
	@ 25 °C	870 ± 100	
Density (g/cm ³)	à 20 °C	1.15 ± 0.010	Pycnometer NF EN ISO 2811-1
Storage	25 °C < T°C < 30 °C	6 months	
	10 °C < T°C < 20 °C	12 months	

Hardener SD 7820

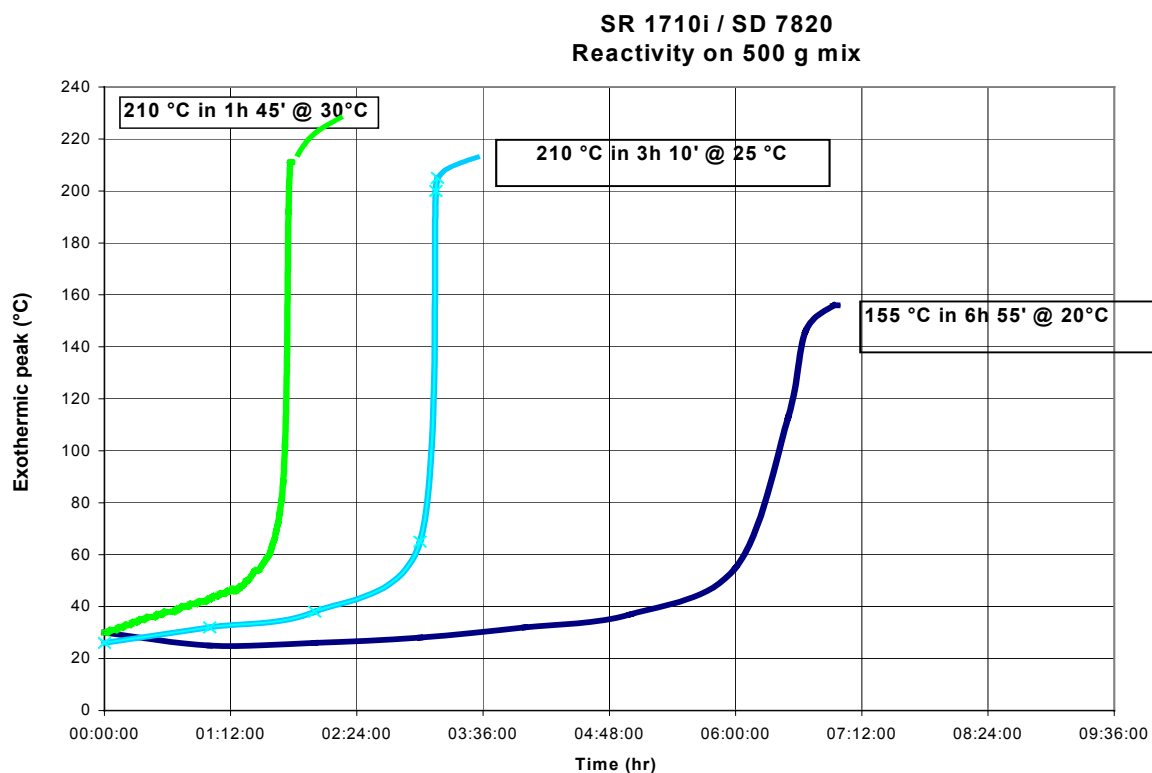
Reactivity type		slow	
Aspect / colour		Light yellow liquid	
Viscosities (m.Pas)	@ 20 °C	60 ± 4	Mobile LV2 60 rev / min ISO 2555
	@ 25 °C	48 ± 4	
Density (g/cm ³)	à 20 °C	0.957 ± 0.010	Pycnometer NF ISO 2811-1

Mix SR 1710 inj / SD 7820

Viscosity of the mix (mPas)	@ 20 °C	550
	@ 25 °C	350
	@ 30 °C	220
Mixing ratio by Weight		100 g / 36 g
Mixing ratio by Volume		100 ml / 43 ml

Reactivity SR 1710 inj / SD 7820

Exothermic peak Temperature (°C) on 500 g mélange:	
@ 20 °C	155
@ 25 °C	210
@ 30 °C	210
Time to reach the exothermic peak on 500 g mix	
@ 20 °C	6h 55'
@ 25 °C	3h 10'
@ 30 °C	1h 45'
Time to reach 50°C on 500 g mix	
@ 20 °C	5h 52'
@ 25 °C	2h 48'
@ 30 °C	1h 21'



Cure cycles



Time to wait @ 20°C before post-cure *	20 hours
Minimum post-cure cycle	16 hours @ 60 °C
Advised post-cure cycle	24h @amb. T°C + 8 h @ 60 °C + 4h @ 100 °C

*Have to be respected in the case of thick laminate (> 3cm), in order to limit the risk of exothermic reaction

Packaging (in Kg)


Resin SR 1710 Inj.	Hardener SD 7820
224	8 x 9.9 or 3 x 26.2
28	10.08
12	4.32
5	1.8
2	0.72

Health & Safety

References	Symbol	Danger	Phrases Risks
SR 1710 Inj.		Xn : Harmful N : Dangerous for the environment	36/38 22 40 51/53 43
SD 7820		C : Corrosive	21/22 34 43

EEC Classification in accordance with Annex I of the Directive 67 / 548 / EEC

Mechanical properties on cast resin

		SR 1710 Inj. / SD 7820
Cure cycle		24h @ Ta + 8 h @ 60 °C + 4h @ 100 °C
Tensile		
Modulus of elasticity	N/mm ²	2 780
Maximum resistance	N/mm ²	78
Resistance at break	N/mm ²	77
Elongation at max.load	%	5.3
Elongation at break	%	6.2
Flexion		
Modulus of elasticity	N/mm ²	2 780
Maximum resistance	N/mm ²	117
Elongation at max.load	%	7
Elongation at break	%	9
Compression		
Compressive yield strength	N/mm ²	
Offset compressive yield	%	
Charpy impact strength	KJ/m ²	17
Glass transition		
Tg1	°C	127
Tg1 max.	°C	130

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

Measures undertaken according to Afnor norms :

Tension: NF T 51-034

Flexion : NF T 51-001

Charpy impact strength: NF T 51-035

Glass transition : Measure by DSC. Tg1: 1st point à 10°C / mn, Tg 1 max.: 2nd passage 180°C



Mechanical properties of laminates based on SR 1710 / SD 7820

		SR 1710 Inj / SD 7820			
Cure cycles		24h @ amb.temp+16 h @ 60°C	24h @ amb.temp +8 h @ 60°C +4h @ 100°C	24h @ amb.temp + 16 h @ 60°C	24h @ amb.temp +8 h @ 60 °C +4h @ 100°C
Laminate					
Reinforcement		3300	3300	3300	3300
Number of layers		15	15	15	15
Process		Press	Press	Press	Press
Glass content ratio by weight (Wf)		74.5	74.5	65	65
Flexion					
Modulus of elasticity	N/mm ²	25 750	21 380	21 690	20 110
Maximum resistance	N/mm ²	654	620	559	514
Elongation at maximum load	%	2.96	3.32	2.91	2.85
Shear strength					
Shear stress	N/mm ²	57	57	58	57
Charpy impact strength					
	KJ/m ²	201	194	196	216
Water absorption					
	%poids	0.08	0.08	0.15	0.09
Glass transition					
Tg 1	°C	88	127	88	127

Tests carried out in accordance with AFNOR norms:

Cast resin :

Tension : NF T51-034
Flexion : NF T51-001
Compression: NF T 51-101
Charpy NF T51-501
Impact Strength
Glass transition: DSC Tg 1 = 1° pt
@ 10°C / mn

Laminate :

Flexion : NF T57-105
Charpy Impact Strength NF T57-108
Shear strength 3 Pts flexion NF T 57-104
Water absorption Internal. Polymerisation according to cycle, machining, weighting, time spent in distilled water at 70 °C / 48 hours, weighting 1 hour after emerging, drying 24 h at 40°C, weighting, mechanical tests on 10 samples
Glass transition: DSC Tg 1 = 1° pt @ 10°C / mn
Reinforcement Twill 2/2 E Glass, weight 300 g/m²
3300

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