SR 1124 / SD 893x
Fire resistant epoxy systems

Epoxy system **SR 1124 / SD 893x** :
- offers a very low viscosity, designed for infusion, hand laminating and filament winding processes.
- is a fire resistant epoxy system, halogen free and flame retardant.
- has a low smokes opacity and toxicity.
- meets the stringent fire protection standards specified in construction, automotive and transportation parts.
- Require post curing in the mould before the part's release.
- is available with 2 different hardeners
- offers an exceptional fire resistance with SC FW16 coating (ASTM E84 class A)

Fire resistant Epoxy resin SR 1124

Appearance		White viscous liquid	
Storage stability		2 years @ 20 °C Stir thoroughly before use	
Viscosity (m.Pas) Rheometer CP 50 mm Shear rate 10 s^{-1}	@ 15 °C @ 20 °C @ 25 °C @ 30 °C @ 40 °C	6900 ± 1380 4000 ± 800 2400 ± 480 1500 ± 300 700 ± 140	
Density Picnometer ISO 2811-1	@ 20 °C	1.23 ± 0.010	
Refractive Index		1,5560 ± 0.0005	

Hardeners SD 893x

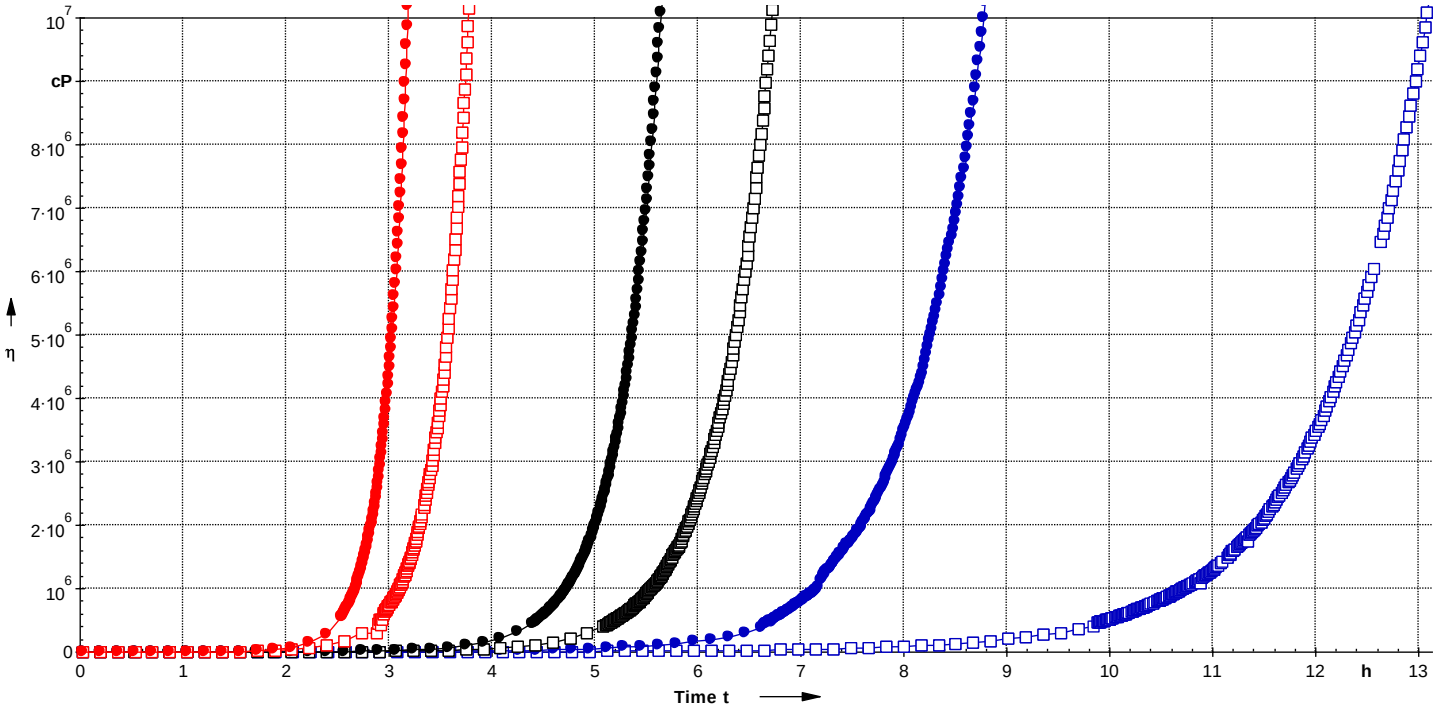
		SD 8932 E1486.8	SD 8931 E 1486.7
Appearance / colour		Liquid Light yellow or violet* *pigmented for securised process	Liquid Light yellow or violet* *pigmented for securised process
Reactivity		Very slow	Ultra slow
Viscosity (mPa.s) Rheometer CP 50 mm Shear rate 10 s^{-1}	@ 15 °C @ 20 °C @ 25 °C @ 30 °C @ 40 °C	33 25 19 15 10	42 32 24 19 12
Density Picnometer ISO 2811-1	@ 20 °C	0,940 ± 0.001	0.950 ± 0.001
Refractive Index	@ 25 °C	1,4819 ± 0.0005* *without pigment	1 ,4756 ± 0.0005* *without pigment

- Polyamine chemistry,
- Low viscosities of blend R & H
- Can be delivered in clear or violet pigmented

Blends Epoxy SR 1124 / SD 893x

		SR 1124 / SD 8932	SR 1124 / SD 8931
Appearance uncured		White liquid unpigmented	White liquid unpigmented
Mixing ratio		**100 / 23 by weight** **100 / 30 by volume**	
Viscosity (m.Pas)			
Rheometer	@ 20 °C	1400	1100
CP 50 mm	@ 30 °C	600	600
Shear rate 10 s^{-1}	@ 40 °C	300	350
Density	@ 20 °C	1.15 ± 0.01	1.17 ± 0.01
After post curing			

Increase of viscosity on 1 mm film @ 20, 30 and 40°C SR 1124 with SD 893x



Anton Paar

Mecanical properties on cast resin

		SR 1124 / SD 8932		
Curing schedule		AT 8 hrs 23 °C 24 hrs 40 °C	AT 8 hrs 23 °C 16 hrs 60 °C	AT 8 hrs 23 °C 4 hrs 60 °C 4 h 80 °C
Tensile		3860	3650	3350
Modulus of elasticity	N/mm^2	46	46	44
Maximum resistance	N/mm^2	46	46	44
Resistance at break	%	1.3	1.4	1.4
Elongation at max.load	%	1.3	1.4	1.4
Elongation at break				
Flexion				
Modulus of elasticity	N/mm^2	3850	3600	3400
Maximum resistance	N/mm^2	68	73	76
Elongation at max. load	%	1.7	2.0	2.3
Elongation at break	%	1.7	2.0	2.3
Charpy impact strength				
Resilience	kJ/m^2	5	6	7
Glass transition				
Tg1 / Tg1 maximum	°C	75	93	102 / 102

		SR 1124 / SD 8931		
Curing schedule		AT 8 hrs 23 °C 24 hrs 40 °C	AT 8 hrs 23 °C 16 hrs 60 °C	AT 8 hrs 23 °C 4 hrs 60 °C 4 h 80 °C
Tensile				
Modulus of elasticity	N/mm^2	3750	3600	3400
Maximum resistance	N/mm^2	44	48	43
Resistance at break	%	44	48	43
Elongation at max.load	%	1.3	1.6	1.4
Elongation at break		1.3	1.6	1.4
Flexion				
Modulus of elasticity	N/mm^2	3600	3400	3400
Maximum resistance	N/mm^2	66	67	76
Elongation at max. load	%	1.8	1.9	2.3
Elongation at break	%	1.8	1.9	2.3
Charpy impact strength				
Resilience	kJ/m^2	5	5	6
Glass transition				
Tg1 / Tg1 maximum	°C	72	87	95 / 98

Tests carried out on samples of pure cast resin, without prior degassing, between steel plates.
Measures undertaken according to the following norms :

Tension:	NF T 51-034
Flexion :	NF T 51-001
Compression:	NF T 51-101
Charpy impact strength:	NF T 51-035
Glass transition DSC :	ISO 11377-2 : 1999 -5°C to 180°C under nitrogen gaz Tg1 or Onset : 1st point at 20 °C/mn Tg1 maximum or Onset : second passage

Laminate mecanical properties :

Epoxy system : SR 1124 / SD 8932
Reinforcement : E Glass, Twill 2/2, 300 g / m² Ref 3300
Process: Hand laminate + press

Number of glass layers		15	15
Glass fiber content by	% weight	60	65
Cure		24 hrs Ambiant + 16 h 60 °C	24 hrs Ambiant + 4 h 60 °C + 4 h 80 °C
Flexion			
Modulus of elasticity	N/mm^2	15 500	19 300
Maximum resistance	N/mm^2	1340	1320
Elongation at max. load	%	3	3
Bending delamination			
Shear load at rupture	N/mm^2	46	36
Impact (Choc Charpy)			
Resilience	KJ/m^2	178	176
Glass transition			
Tg 1	°C	86	99
Tg1 maximum	°C	/	103
Densité		1,8	1,8

Measures undertaken according to Afnor normes :

Flexural:	NF T 57-105
Flexural Délamination:	NF T 57-104
Impact :	NF T 57-108
Glass transition / DSC	ISO 11377-2 : 1999 -5°C to 180°C under nitrogen gaz Tg1 or Onset : 1st point at 20 °C/mn Tg1 maximum or Onset : second passage