



SR 1270 Epoxy resin systems

SR 1270

Epoxy matrix
Without classified Toxic products (T)

Hardeners :

SD 1086.4 : : Standard hardener
SD 1086.3 : Slow hardener
SD 1086.2 : Very slow hardener

Profile:

Cure at ambient temperature and post cure @ 40 to 60 °C
Mixing ratio : 3 / 1 by volume

Applications:

Laminate, adhesive, casting, tooling

Epoxy resin SR 1270

Appearance	Liquid		
Chemical nature	Bisphenol / epichlorhydrine resin		
Storage	Can crystallize at low temperature or after a long storage		
Color	Yellow, Gardner < 3		
Density (Kg/l)	@ 20°C	1.153 ± 0.005	
Brookfield viscosity (m.Pas)	@ 25 °C	1400 to 2000	

Base Hardeners SD 1086.x

	SD 1086.4	SD 1086.3	SD 1086.2
Aspect / color	Yellow liquid	Yellow liquid	Yellow liquid
Reactivity levels	Standard	Slow	Very slow
Brookfield viscosity (m.Pas)	@ 25 °C 35	30	22
Density (g/cm ³ ± 0.005)	@ 20 °C 0.974	0.975	0.963

Resin / Hardeners Mixes

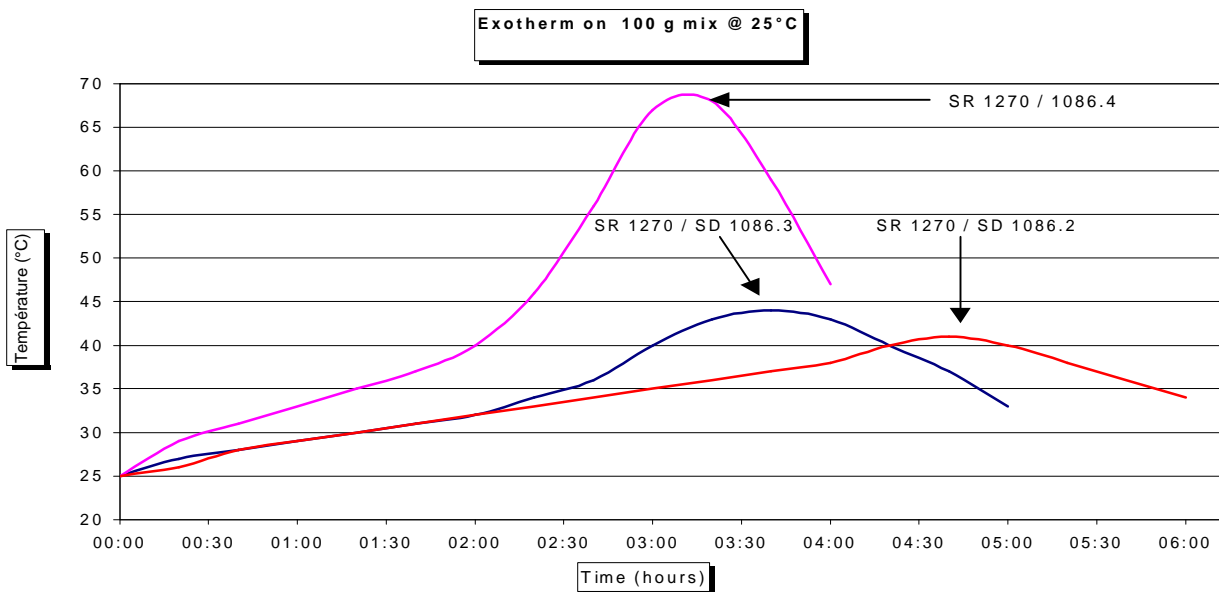
SR 1270 / SD 1086.x

	SD 1086.4	SD 1086.3	SD 1086.2
Viscosities (mPa.s)	@ 25°C 460	450	320
Quantity by weight	100 g / 28 g	100 g / 28 g	100 g / 28 g
Quantity by volume	100 ml / 33 ml or 3 / 1	100 ml / 33 ml or 3 / 1	100 ml / 33 ml or 3 / 1

Levels of Reactivities

	SD 1086.4	SD 1086.3	SD 1086.2
Exothermic temperature (°C) of 100 g mix : @ 25 °C	70	45	40
Time taken to achieve exotherm of 100 g mix : @ 25 °C	3 h 20'	3 h 40'	4 h 40'
Time taken to reach 50 °C / 100 g mix : @ 25 °C	2 h 40'	nm	nm
500 microns dust free film : @ 25 °C	5 h 30'	6 h	7 h

nm : température d'exothermie inférieure à 50°C




Packaging

Kit kg	SR 1270	SD 1086.x
768	3 x 200 kg Steel drums	168 kg Steel drums
256	200 kg Steel drum	2 x 28 kg PE Jericans
38.4	30 kg PE Jerican	8.4 kg PE can
6.4	5 kg PE can	1.4 kg PE can
1.28	1 kg PE can	0.28 kg PE can

Toxicity guide (EEC Classification according Directive 67 / 548 / EEC)

Products	Symbol	Risk phrases
SR 1270		Xi: Irritating N: Dangerous for the environment R 36/38 R 51/53 R 43
SD 1086.x		C: Corrosive R 21/22 R 34 R 43

Mechanical properties of pure resin

Cure Schedule 	SR 1270 / SD 1086.4			SR 1270 / SD 1086.3			SR 1270 / SD 1086.2		
	14 days 23°C	24h 23°C + 24h 40°C	24h 23°C + 8 h 60°C	14 days 23°C	24h 23°C + 24h 40°C	24h 23°C + 8 h 60°C	14 days 23°C	24h 23°C + 24h 40°C	24h 23°C + 8 h 60°C
Tensile									
Modulus of elasticity	N/mm ²	2850	2650		3000	2700		3100	2650
Maximum resistance	N/mm ²	74	69		72	70		72	68
Resistance at break	N/mm ²	72	62		69	63		66	62
Elongation at max. resistance	%	4.3	4.0		3.4	4.3		3.5	4.0
Elongation at break	%	4.6	5.4		3.8	6.7		4.4	5.4
Flexion									
Modulus of elasticity	N/mm ²	3430	3090		3300	3050		3370	3030
Maximum resistance	N/mm ²	119	116		116	112		110	112
Elongation at max. resistance	%	4.7	5.6		4.8	5.8		4.2	5.5
Elongation at break	%	7.6	8.8		7.4	8.8		6.6	8.7
Charpy impact strength									
Resilience	KJ/m ²	29	29		27	29		19	33
Glass Transition / DSC									
Tg 1	°C	66	77		66	77		64	75
Tg 1 max	°C		93			89			88

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

Measures undertaken according to Afnor normes :

Tension: NF T 51-034

Flexion : NF T 51-001

Choc Charpy: NF T 51-035

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

Mechanical properties of laminates :

Ref labo		CE	CE	CE
Samples				
Resin / Hardener		1270 / 1086.4	1270 / 1086.3	1270 / 1086.2
Reinforcement material		3300	3300	3300
Number of layers		15	15	15
Method		Press	Press	Press
Weight of reinforcement	%	73.6		
Cure Schedule		8 h 60 °C	8 h 60 °C	8 h 60 °C
Flexural				
Modulus	N/mm ²		20500	18800
Maximum resistance	N/mm ²		722	643
Maximum elongation	%		3.2	3.0
Bending delamination				
Shear load at rupture	N/mm ²		51	47
Impact (Choc Charpy)				
Resilience	KJ/m ²		201	197
Glass Transition				
Tg 1	°C		84	82
Tg1 max.	°C		89	88

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

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 1° point at 10°C / mn

Water absorbtion : Internal. Polymerisation according to a cycle, weighing, time spent in water distilled à 70 °C / 48 hours, weighing 1 hr after removal, drying 24 hr / 40°C, weighing, mechanical tests on 10 samples

Reinforcement : Ref 3300, E Glass, sergé de 2, 300 g/m²