

SR 1660 / SD 2630

SR 1660 / SD 7820

Heat resistant epoxy systems

Description

Epoxy systems for part or tooling with a service temperature of 120°, 150°C peak

Excellent chemical resistance, resistance to oxidation, low exothermic peak.

For laminating, press moulding, casting or injection.

Application type : Composite tooling for "120°C" prepreg, Thermoforming tooling, structural parts with a elevated service temperature.

Epoxy resin SR 1660

Aspect / colour		Yellow liquid
Viscosity (mPa.s)	@ 25 °C	3100
Density	@ 20 °C	1.15
Storage	15 to 25 °C	Do not crystallise

Hardeners SD 2630 & SD 7820

		SD 2630 "Ultra slow"	SD 7820 « Slow »
Reactivity type			
Aspect / colour		Reddish yellow liquid	Translucent liquid
Viscosity (mPas)	@ 20 °C	225	60
	@ 30 °C	185	50
Density	@ 20 °C	1.00	0.96

SR 1660 / SD xxxx Mix

		1660 / 2630	1660 / 7820
Viscosity of mix (m.Pas)	@ 20 °C	3300	1560
	@ 30 °C	1150	700
Mixing ratio by Weight		100 g / 31 g	100 g / 32 g
Mixing ratio by Volume		100 ml / 36 ml	100 ml / 39 ml

Reactivity of mixes SR 1660 / SD xxxx

		1660 / 2630	1660 / 7820
Exothermic temperature on 500 g mix (°C):	@ 20 °C	35	180
	@ 30 °C	70	>210
	@ 40 °C	205	>210
Time to reach exothermic peak on 500 g mix:	@ 20 °C	7 h 45'	6 h
	@ 30 °C	4 h	1 h 50'
	@ 40 °C	1 h 20'	54'





Reactivity on film (min)

Temperature	SR 1660 / SD 2630		SR 1660 / SD 7820	
	Gel Time	Dust free	Gel Time	Dust free
@ 30 °C	210'	345'	180'	240'
@ 40 °C	180'	255'	140'	160'
@ 50 °C	105'	165'	75'	90'
@ 60 °C	60'	125'	45'	60'
@ 70 °C	50'	95'	30'	40'
@ 80 °C	42'	65'	20'	25'

Packaging (in Kg)

Resin SR 1660	Hardener SD 2630	Hardener SD 7820
210	7 x 9.3	7 x 9.6
30	9.3	9.6
10	3.1	3.2
3.5	1.09	1.12
1	0.31	0.32

Safety & Labelling

References	Symbol	Danger	Phrases Risk
SR 1660		Xi : Irritant	36/38 51/53 43
		N : Dangerous for environment	
SD 2630		Xn : Harmful	21/22 35 37 43
SD 7820		C : Corrosive	21/22 34 43

(EEC Classification 67 / 548 / EEC Directive)

Casting: epoxy system/ Aluminium granules 200 / 1000 microns :

Resin / hardener Mix:	1 kg
Aluminium granules:	1.3 to 2 kg

Maximum thickness of casting @ 20 °C

With SR 1660 / SD 7820 :	15 cm maximum
With SR 1660 / SD 2630 :	30 cm maximum

Post cure cycle for tooling with high dimensional stability required:

48 h @ 25°C + 24 h @ 30°C + 12 h @ 50°C (release possible at this stage, better if post cure till 60°C before release) + 3 h @ 70°C + 3 h 90°C + 3 h 110°C + 3 h @ 130°C + 3 h @ 150°C.

Mechanical properties on cast resin:

		SR 1660 / SD 2630			SR 1660 / SD 7820			
Cure cycles		48 h TA + 16 h 60 °C + 6 h 100 °C	48 h TA + 16 h 60 °C + 4 h 120 °C	48 h TA + 16 h 60 °C + 3 h 150 °C	48 h TA + 16 h 60 °C	48 h TA + 8 h 60 °C + 4 h 90 °C	48 h TA + 8 h 60 °C + 4 h 90 °C + 4 h 120 °C	48 h TA + 8 h 60 °C + 4 h 90 °C + 4 h 120 °C + 4 h 150 °C
Tensile								
Modulus of elasticity	N/mm ²	3100	2760	2500	2850	2550	2200	2100
Maximum resistance	N/mm ²	85	83	65	81	68	63	65
Resistance at break	N/mm ²	85	83	65	81	68	63	65
Elongation at max. resistance	%	4.7	4.6	3.3	3.8	3.6	4.1	4.5
Elongation at break	%	4.7	4.6	3.3	3.8	3.6	4.1	4.5
Flexion								
Modulus of elasticity	N/mm ²	3100	2950	3000	3400	2950	2700	2450
Maximum resistance	N/mm ²	130	127	121	130	121	107	102
Elongation at max. resistance	%	6.5	6.8	4.9	5.3	6.5	7.1	6.3
Elongation at break	%	7.7	7.8	4.9	6.4	7.6	7.6	6.4
Compression								
Compressive yield strength	N/mm ²	119	120		110	117	116	122
Offset compressive yield	%	16	12		11.6	13.6	12.4	14.1
Charpy impact strength	KJ/m ²	22	18	19	24	20	14	15
Glass Transition / DSC								
Tg1	°C	118	128	147	90	114	141	150
Tg1 max.	°C			149				150

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

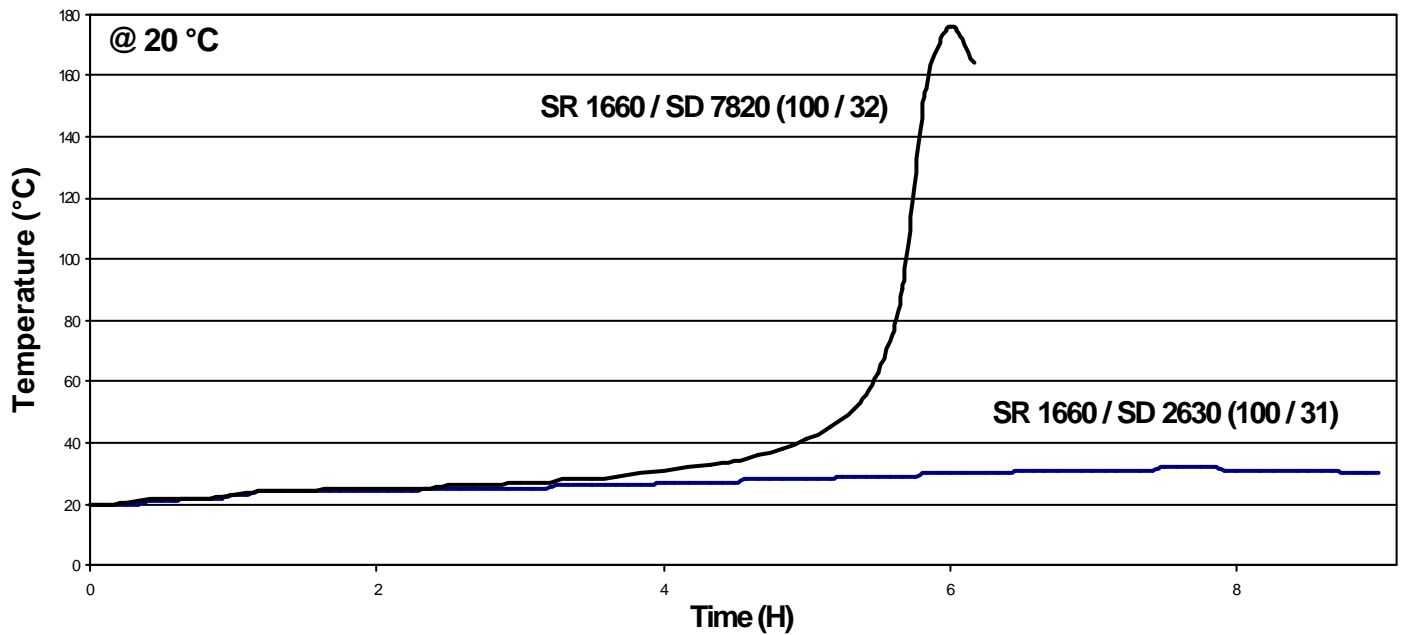
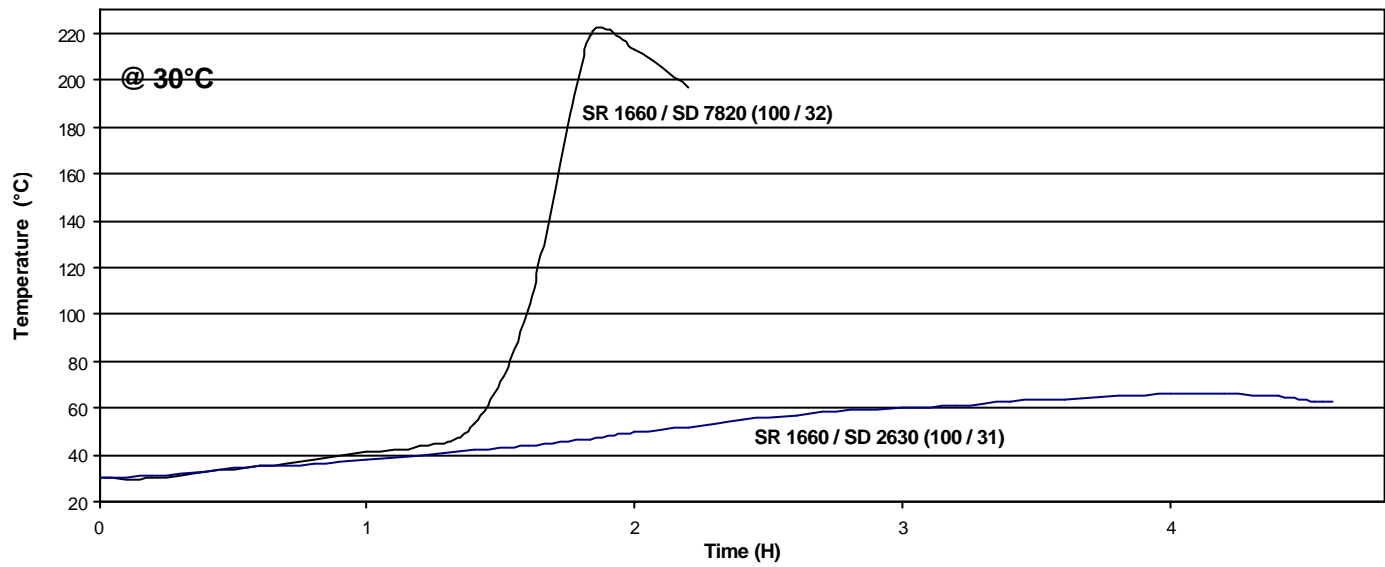
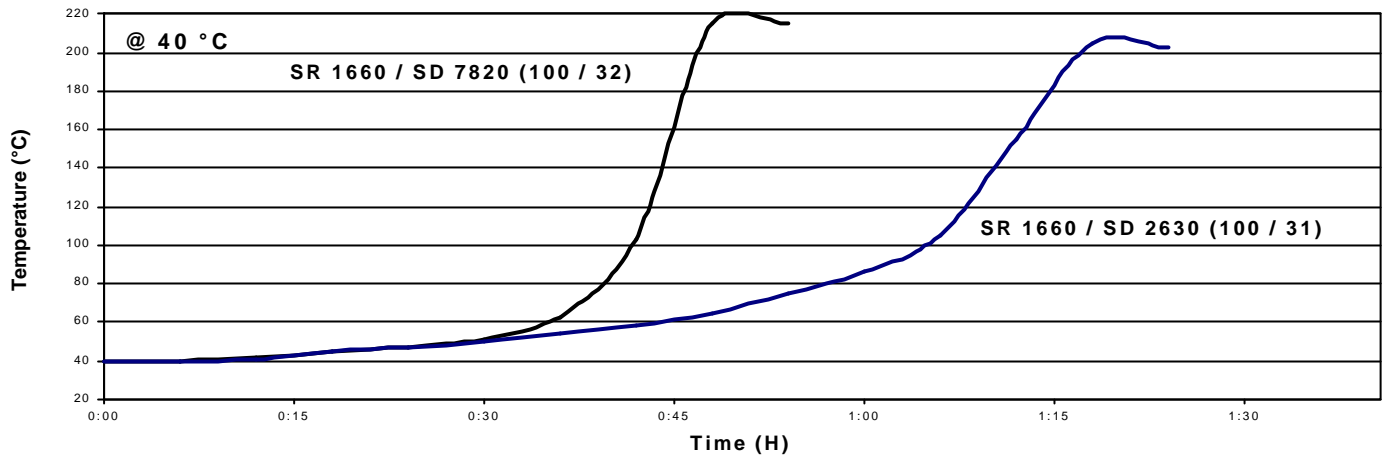
Charpy impact strength: NF T 51-035

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

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

AT : Ambient Temperature

Exothermic temperature on 500 g Mix



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