

SR 8160 / SD 815 Bx

Flexible epoxy systems

Epoxy resin SR 8160

- Clear resin, without thinner or plasticizer
- Very high of elongation at break in tension and shock resistance
- Low viscosity of the mixes
- Unfilled and translucent
- Advantages compare to polyurethane:
 - * Do not foam when in contact with humidity
 - * Memory of shape

Hardeners SD 815 Bx:

SD 815 B2 and B3: standard hardeners

SD 815 B4 : slow hardener

Profile:

Cure at ambient temperature and post cure at 40 to 100 °C

Applications:

- Hand laminating, infusion, adhesive, tooling, casting, laminates...
- Parts under vibrations, shocks, low temperature
- Flexible laminates: Body parts for cars, motorbike, 4X4...
- Casting and inclusion (degassing under vacuum)
- Parts « design », prototypes

Epoxy resin SR 8160

Appearance		Viscous liquid
Chemical nature		Epoxy resin. Reaction product between bisphenol and epichlorhydrine.
Storage		2 years
Color gardner		3 maximum
Density (Kg/l) Picnometer NF EN ISO 2811-1	@ 20 °C	1.144
Viscosities (m.Pas ± 20 %)	@ 15 °C	14 400
	@ 20 °C	7 800
Rheometer CP 50 mm	@ 25 °C	3 900
Shear rate 10 s ⁻¹	@ 30 °C	2 200
	@ 40 °C	850
Refractive index	@ 25 °C	1.5347

Base Hardeners SD 815 Bx :

		SD 815.B2	SD 815 B3	SD 815 B4
Aspect / Color		Liquid / Clear to yellow		
Reactivity levels		Standard	Standard	Slow
Viscosities (m.Pas ± 20 %)	@ 15 °C	18	28	30
	@ 20 °C	15	22	24
	@ 25 °C	12	17	19
Rheometer CP 50 mm Shear rate 10 s ⁻¹	@ 30 °C	10	13	15
Density (g/cm ³ ± 0.005) Picnometer NF EN ISO 2811-1	@ 20 °C	0.97	0.98	0.98
Refractive Index	@ 25 °C	1.4702	1.4727	1.4670

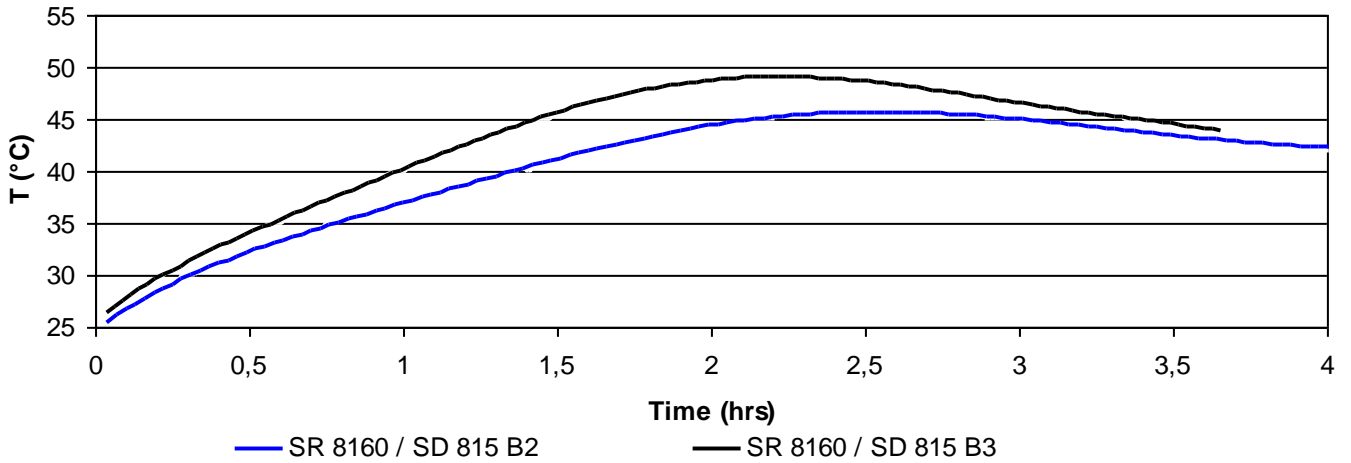
SR 8160 / SD 815.Bx Mixes :

	SR 8160/ SD 815 B2	SR 8160 / SD 815.B3	SR 8160 / SD 815 B4
Mixing ratio: Quantity by weigh Quantity by volume	100 / 18 100 / 21	100 / 20 100 / 24	100 / 20 100 / 24
Viscosities mixes @ 20 °C (m.Pas ± 20 %) Rheometer CP 50 @ 30 °C mm @ 40 °C Shear rate 10 s ⁻¹	2 100 850 420	2 250 880 440	2 750 1 100 500

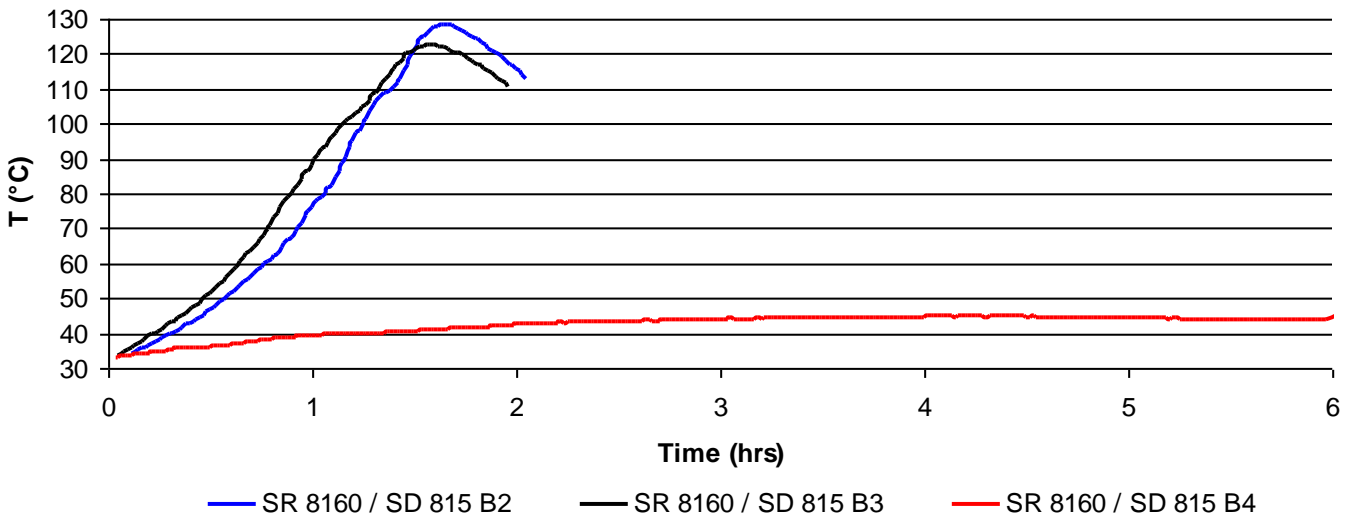
Reactivities on 500 g mix SR 8160 / SD 815 Bx :

	SR 8160 / SD 815 B2	SR 8160 SD 815 B3	SR 8160 SD 815 B4
Exothermic temperature (°C) : @ 20 °C @ 30 °C @ 40 °C	45 130 160	50 120 155	/ 45 80
Time taken to achieve exotherm : @ 20 °C @ 30 °C @ 40 °C	2 hrs 20 min 1 hrs 40 min 1 hr	2 hrs 1 hrs 35 min 55 min	/ 4 hrs 2 hrs 45 min
Time taken to reach 50 °C : @ 20 °C @ 30 °C @ 40 °C	/ 35 min 20 min	/ 30 min 15 min	/ / 1 hr 10 min

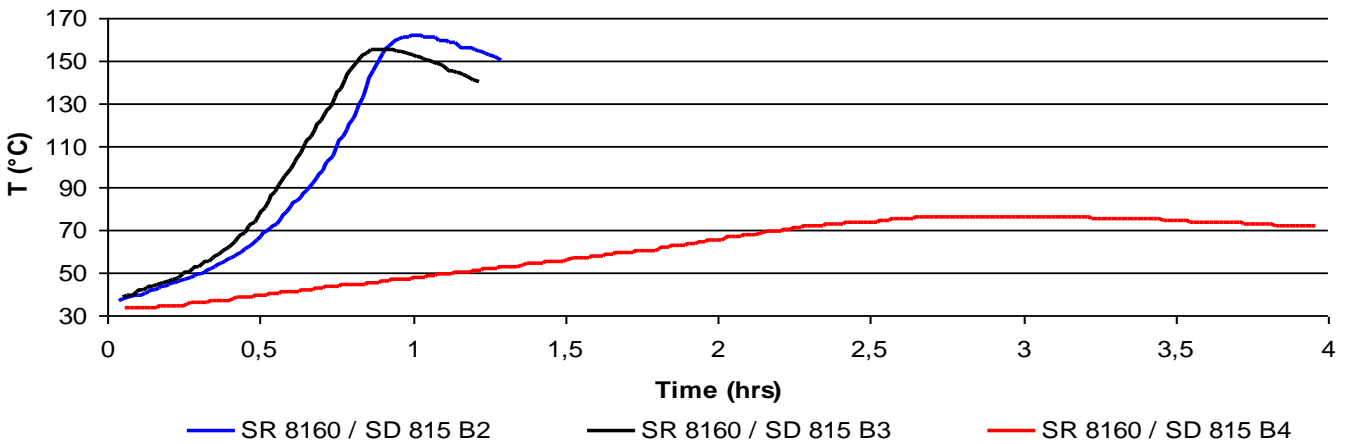
Pot Life 500 g @ 20 °C



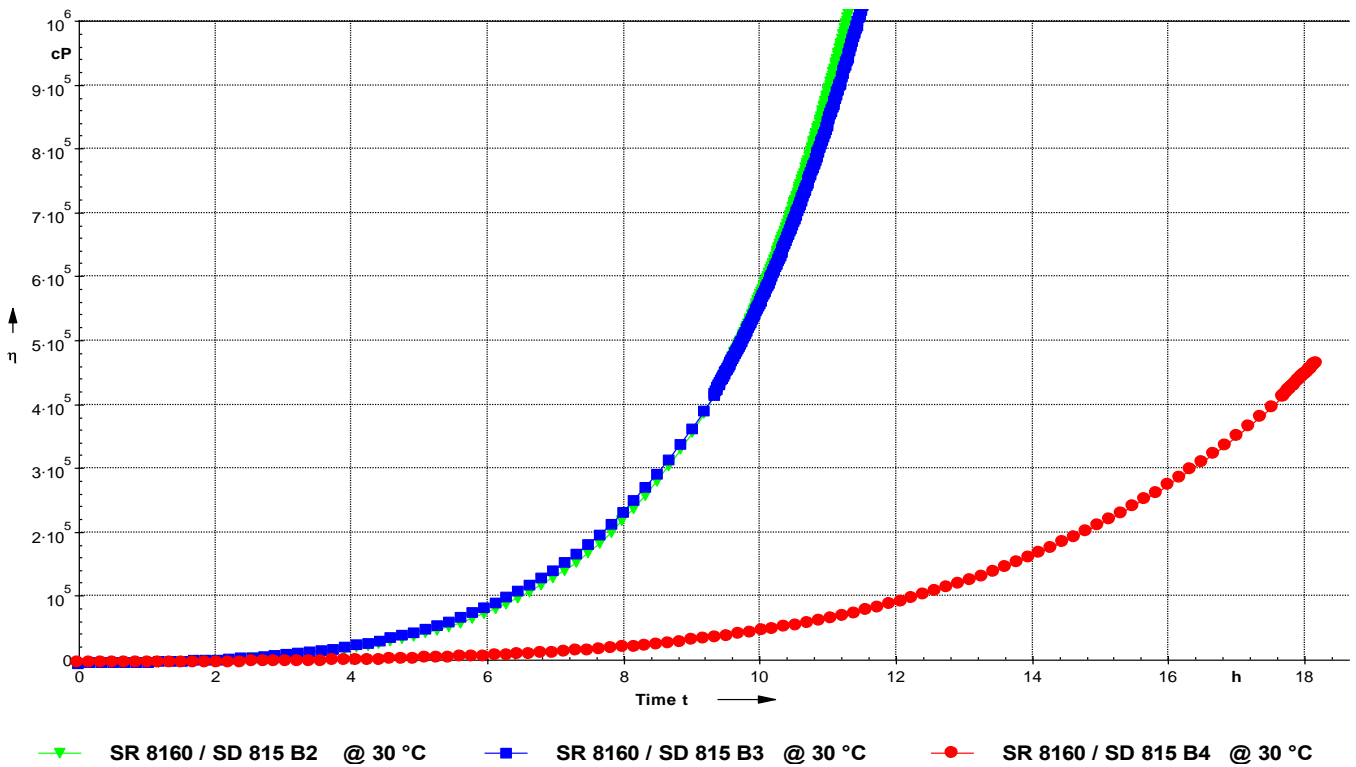
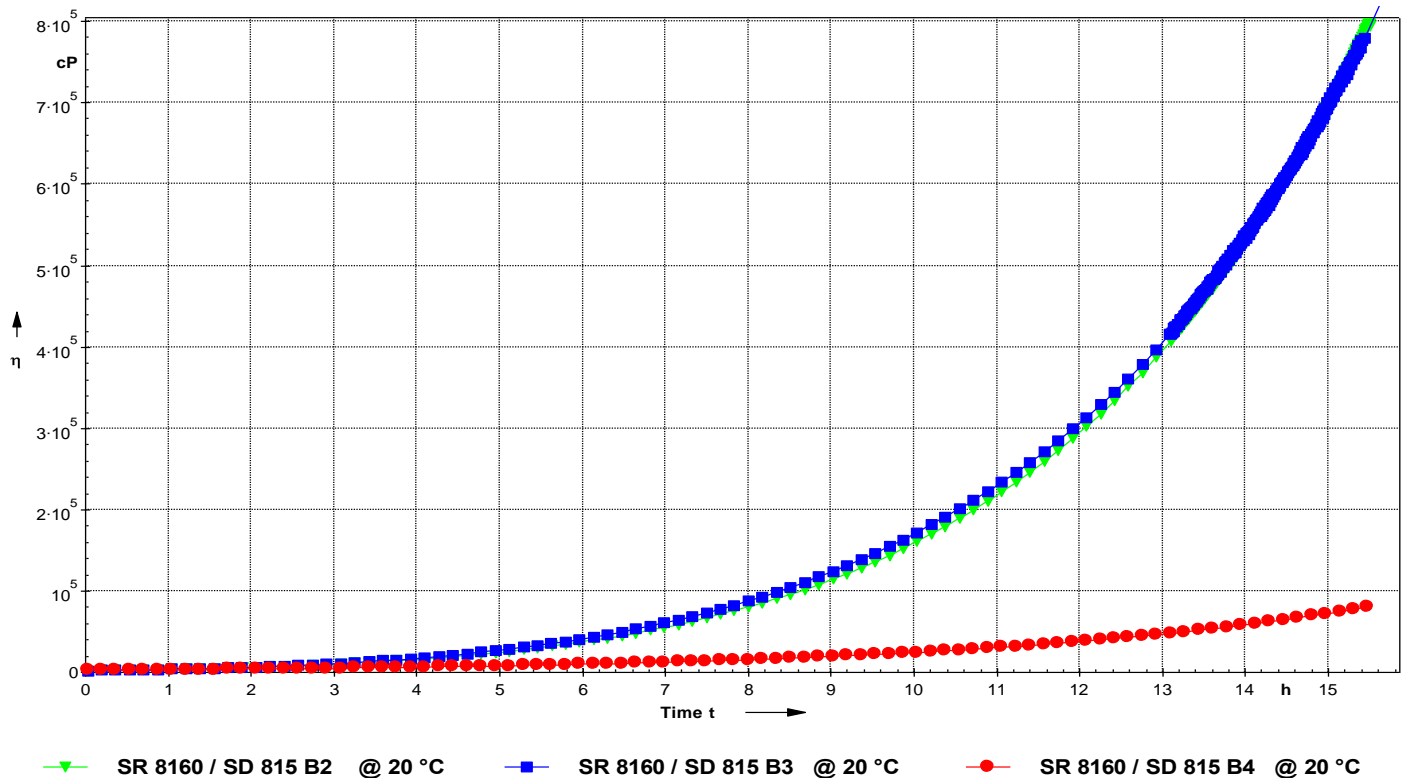
Pot Life 500 g @ 30°C

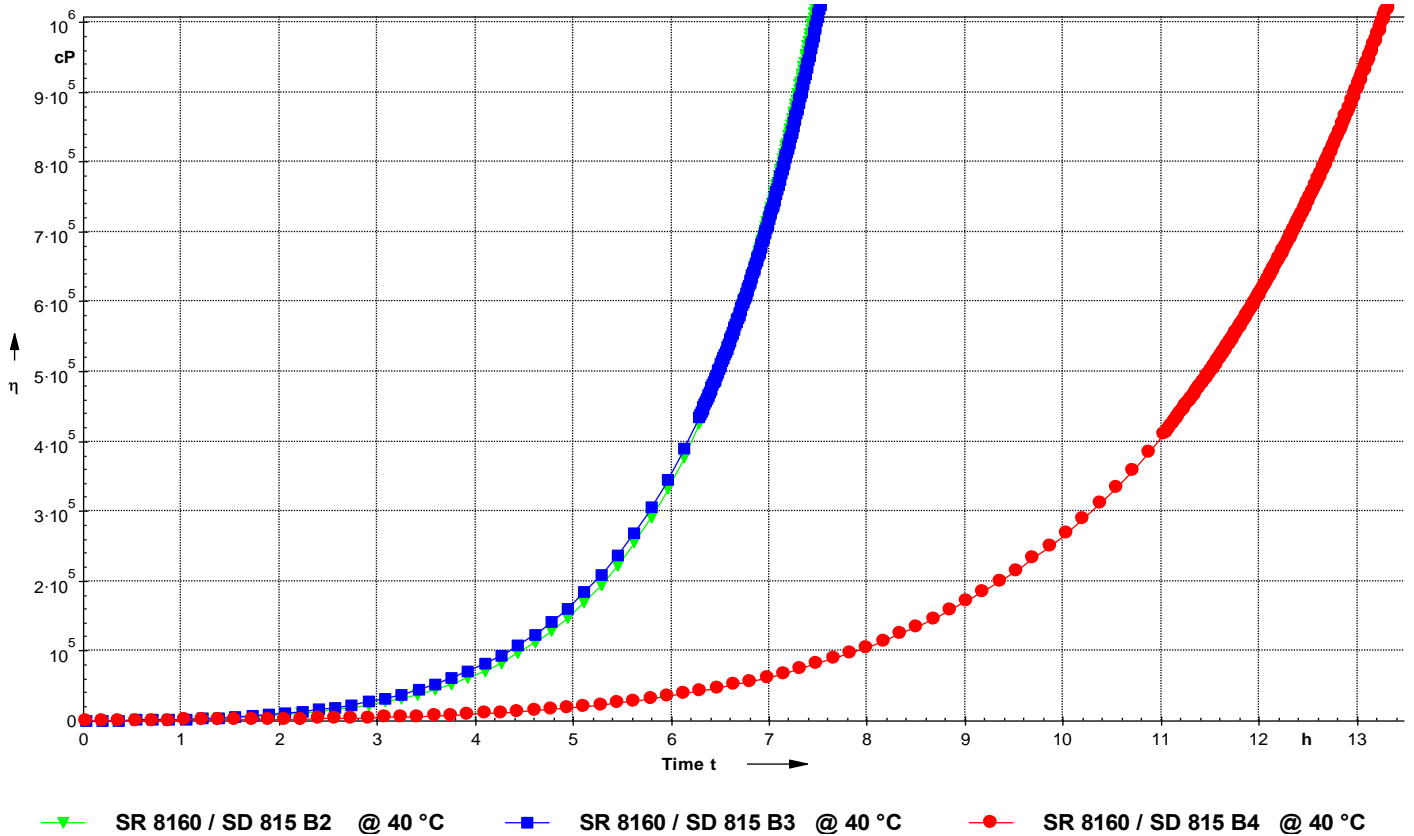


Pot Life 500 g @ 40°C



Reactivity – 1 mm film viscosity evolution with the temperature
SR 8160 / SD 815 Bx @ 20, 30 and 40 °C





Mechanical properties of pure resin

SR 8160 / SD 815 Bx Cure Schedule	SD 815 B2	SD 815 B3	SD 815 B4	
	24 hrs 25 °C + 8 hrs 60 °C	24 hrs 25 °C + 8 hrs 60 °C	24 hrs 25 °C + 8 hrs 60 °C	24 hrs 25 °C + 8 hrs 60 °C
Tensile				
Modulus of elasticity	N/mm ²	150	180	380
Maximum resistance	N/mm ²	10	14	14
Resistance at break	N/mm ²	-	-	14
Elongation at max. resistance	%	> 130	> 130	> 90
Elongation at break	%	-	-	> 90
Transition vitreuse / DSC				
Tg onset / Tg maximum	°C	33 / 33 °C	34 / 33 °C	37 / 36 °C

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 11357-2 : 1999 -5°C to 180°C under nitrogen gaz
 Tg1 or Onset : 1st point at 20 °C/mn
 Tg1 maximum or Onset : second passage