SR 8100 / SD 7840
Epoxy Infusion system Tg 120 °C

This two component epoxy system has been specially formulated for resin transfer processes, such as injection or infusion.
This system has a very low viscosity at ambient temperature.
The cured system gives a temperature resistance up to 120°C.

Epoxy resin SR 8100

Aspect		Liquid fluid
Color		clear
Gardner color		2 maximum
Viscosity (mPa.s)	@ 15 °C	2190 ± 440
	@ 20 °C	1220 ± 250
	@ 25 °C	720 ± 145
	@ 30 °C	450 ± 90
	@ 40 °C	200 ± 40
	@ 50 °C	104 ± 30
	@ 60 °C	60 ± 12
	@ 70 °C	37 ± 7.
Refractive index	25 °C	1.5540 ± 0.02
Density :	20 °C	1.158 □ 0.05
Storage		24 mois, cristalisation free

Hardener SD 7840

Reactivity		Slow
Aspect		Liquid
Color		Yellow to red
Color Gardner		4 à 17 maximum
Viscosity (mPas)	@ 15 °C	30 ± 5
	@ 20 °C	22 ± 4
	@ 25 °C	17 ± 3
	@ 30 °C	14 ± 3
	@ 40 °C	10 ± 2
Refractive index	@ 25 °C	1.5130
Density	@ 20 °C	0.970

Blend SR 8100 / SD 7840

Mix by weight Mix by volume		**100 / 23** **100 / 28**
Blends viscosities	@ 20 °C @ 30 °C @ 40 °C @ 50 °C @ 60 °C @ 70 °C	550 ± 110 300 ± 60 135 ± 30 53 ± 10.5 45 ± 9 25 ± 5
Cure density		1.18

Tests according to standards :

Color Gardner :	NF EN ISO 630	Visual
Refractive Index:	NF ISO 280	
Viscosity :	NF EN ISO 3219	Rheometre 50 mm, cisaillement $10s^{-1}$
Density :	NF EN ISO 2811-1	Pycnometer

Exotherm on 500 g mix:

Core maximum temperature (°C)

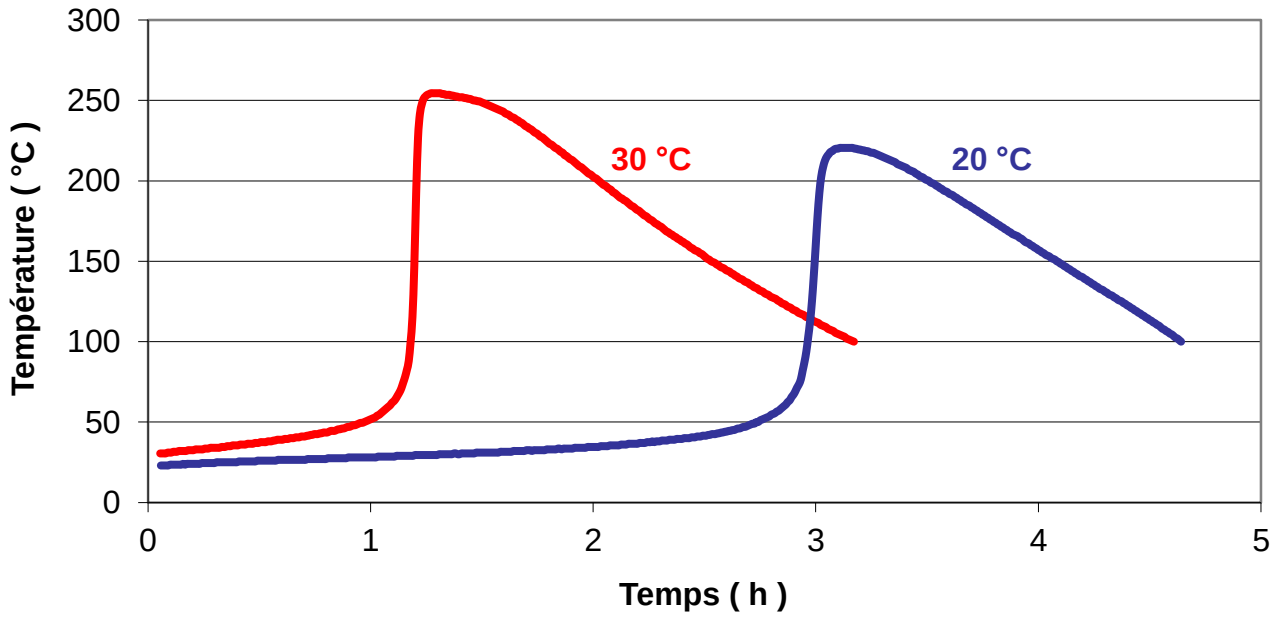
@ 20 °C	220 °C
@ 30 °C	255 °C

Time to reach the exotherm

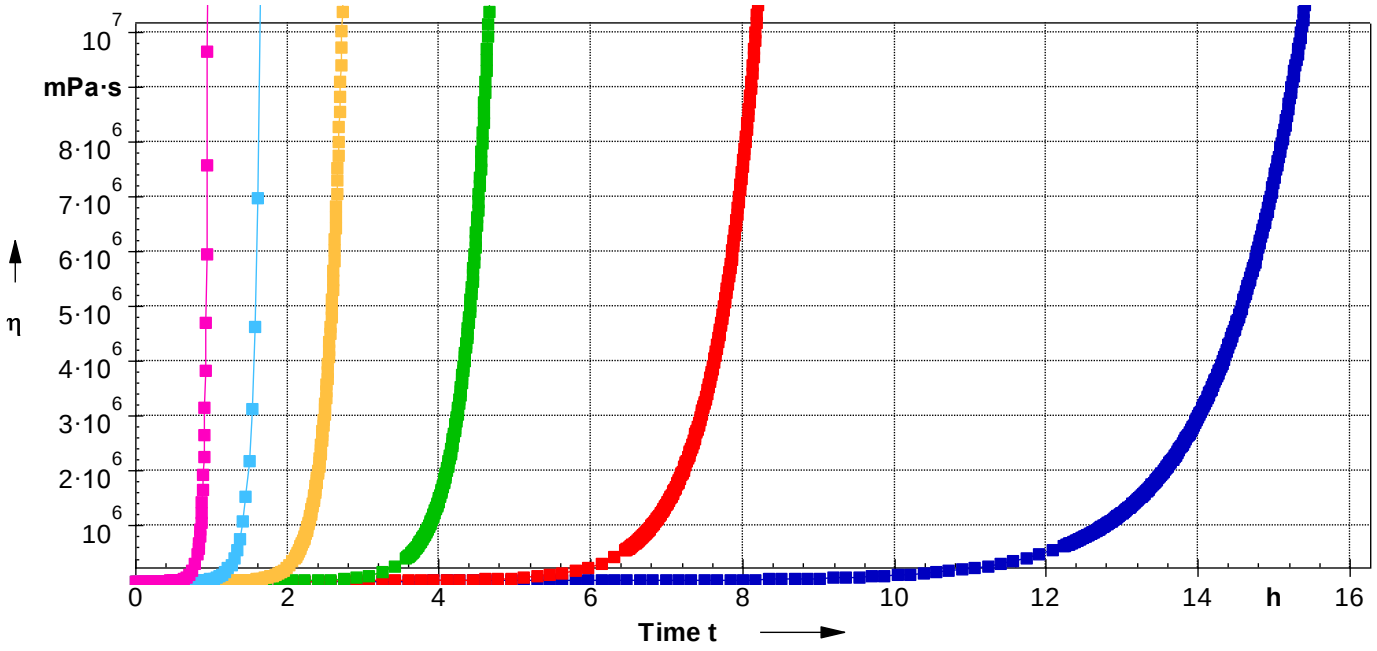
@ 20 °C	3 hrs 05
@ 30 °C	1 hrs 10’

Time to reach 50 °C

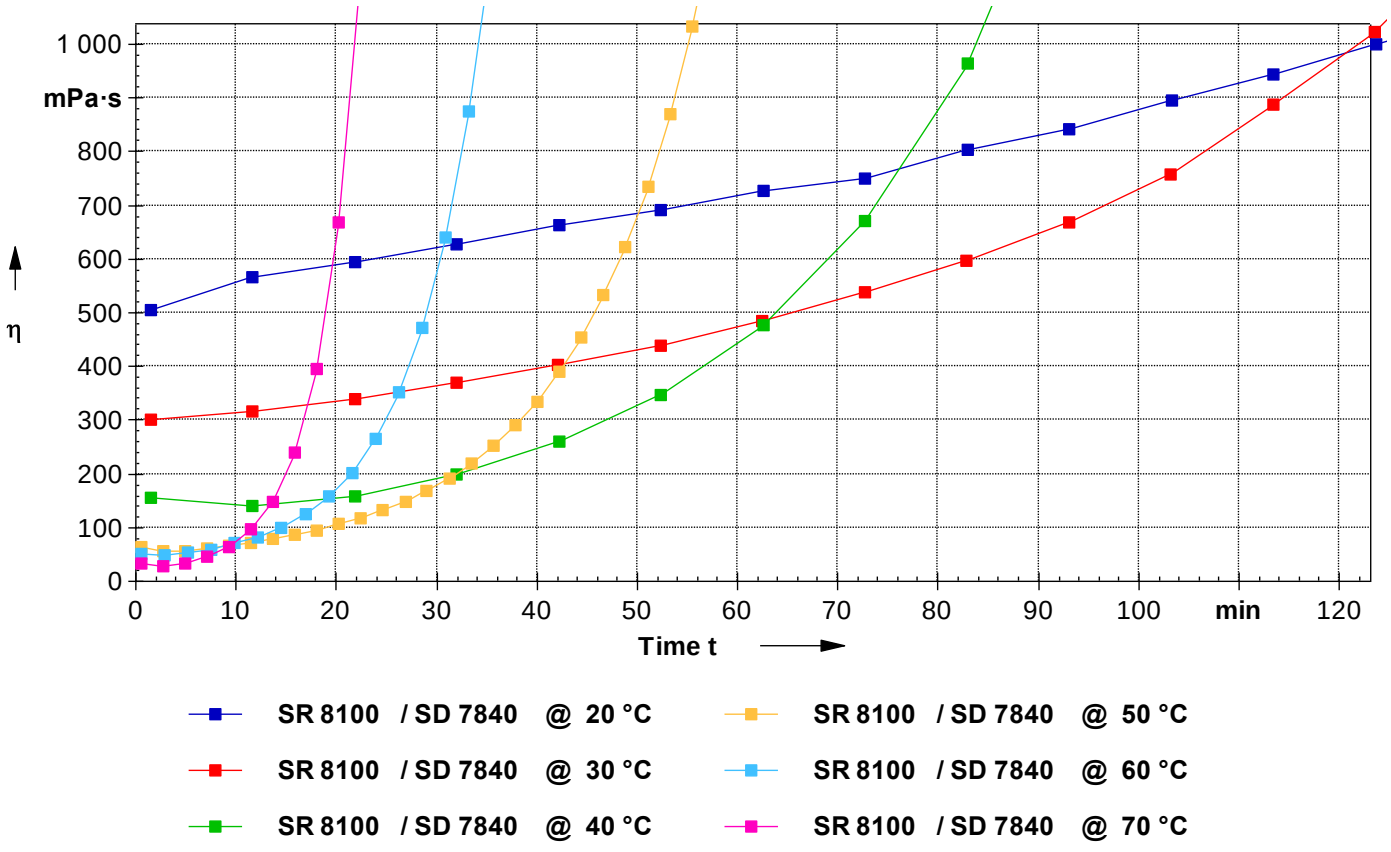
@ 20 °C	2 hrs 45’
@ 30 °C	1 hr



Evolution of the viscosity at various temperatures on 1 mm thick



Initial viscosities / zoom



Mecanical Properties

		SR 8100 / SD 7840		
Curing cyles →		12 hrs @ 30 °C +16 hrs @ 60 °C	12 hrs @ 30 °C +16 hrs @ 60 °C + 8 hrs @ 80 °C	12 hrs @ 30 °C +16 hrs @ 60 °C + 4 hrs @ 100°C
Traction				
Modulus of elasticity	N/mm²	3 510	3 230	2 930
Maximum resistance	N/mm²	57	82	79
Resistance at break	N/mm²	57	80	77
Elongation at maximum load	%	1.9	4.6	5.8
Elongation at break	%	1.9	5.1	6.4
Flexion				
Modulus of elasticity	N/mm²	3 490	3 290	2 900
Maximum resistance	N/mm²	127	123	114
Elongation at maximum load	%	4.6	5.4	6.6
Elongation at break	%	4.2	7.2	8.2
Choc Charpy	kJ/m²	15	23	23
Glass transition / DSC				
Tg1 / Onset	°C	88	102	118
Tg1 max.	°C			120

AT : Ambient Temperature
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
Charpy impact strength:	NF T 51-035
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 :	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