

SR 1720 / SD 7840

High performance infusion systems

The **SR 1720 / SD 7840** epoxy system is specially formulated for high temperature resistance. It exhibits low viscosity which makes it suitable for RTM applications, such as injection, vacuum assisted injection or infusion. It also develops good mechanical properties after an initial postcuring at low temperature, for example 50 °C, allowing parts to be demolded. This makes the system possible to be used with non heat resistant moulds and prototypes. Higher temperature resistance, up to 200 °C is possible to be achieved later, with subsequent postcuring cycles.

Epoxy resin SR 1720

		SR 1720
Aspect / colour		Yellow liquid
Viscosity (cps)	20 °C	8 500 ± 1 500
Rheometer CP 50 mm	25 °C	4 400 ± 800
Shear rate 10 s ⁻¹	30 °C	2 300 ± 500
	40 °C	800 ± 150
Density	20 °C	1.180 ± 0.01
Picnometer		
ISO 2811-1		

Hardener SD 7840

		SD 7840
Aspect / colour		Reddish yellow liquid
Viscosity (cps)	15 °C	30 ± 5
Rheometer CP 50 mm	20 °C	22 ± 4
Shear rate 10 s ⁻¹	25 °C	17 ± 3
	30 °C	14 ± 3
	40 °C	10 ± 2
Density		0.970 ± 0.01
Picnometer		
ISO 2811-1		

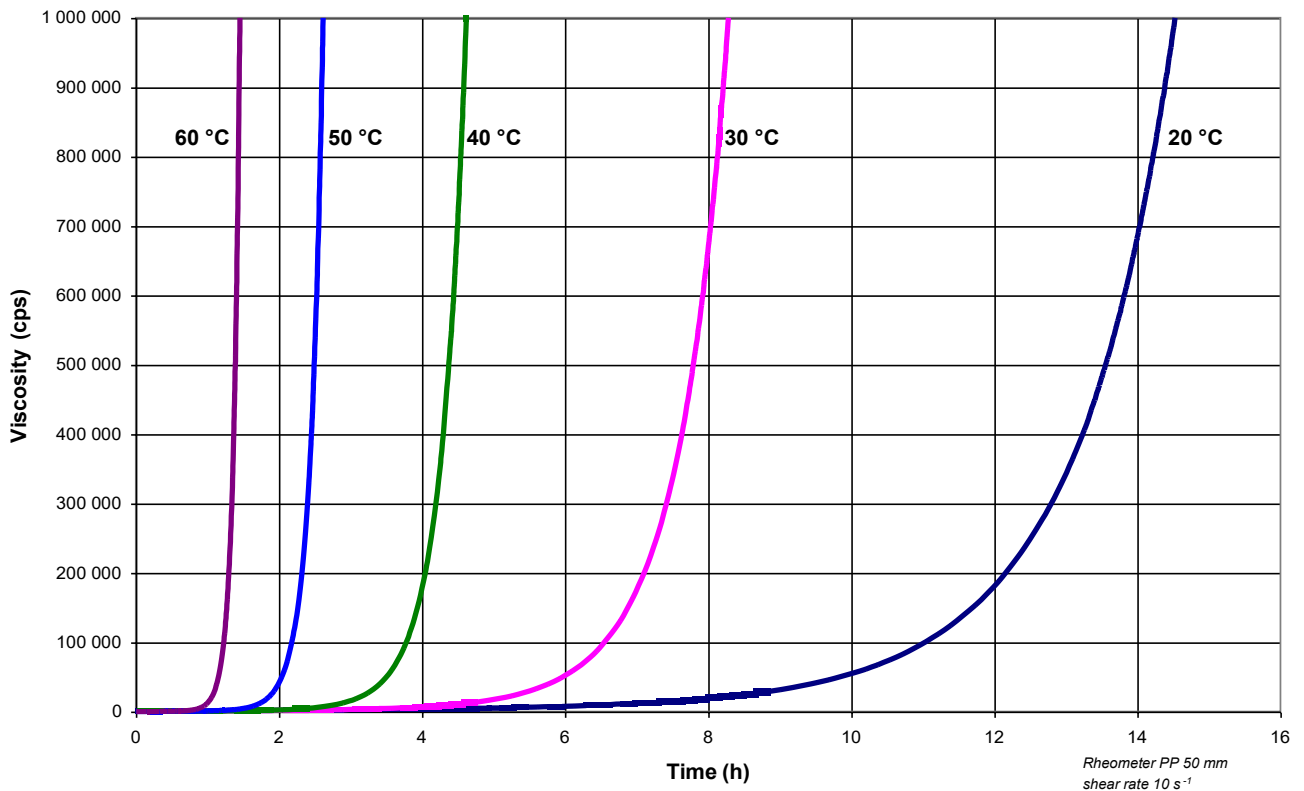
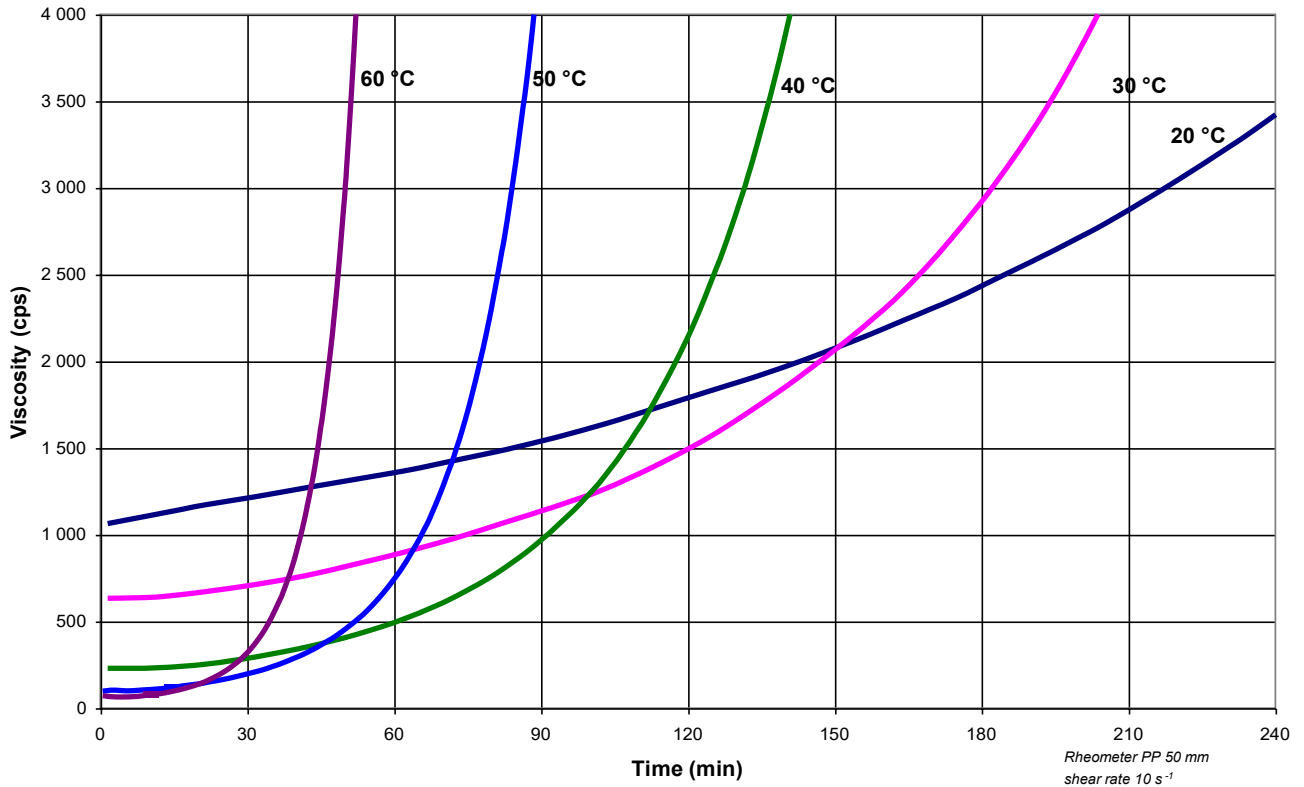
SR 1720 / SD 7840 mix properties

		SR 1720 / SD 7840
Weight ratio		100 / 26 g
Volume ratio		100 / 32 ml
Mix viscosity (cps)		
Rheometer PP 50 mm	30 °C	450 ± 100
Shear rate 10 s ⁻¹	40 °C	230 ± 40
	50 °C	80 ± 20
	60 °C	60 ± 15

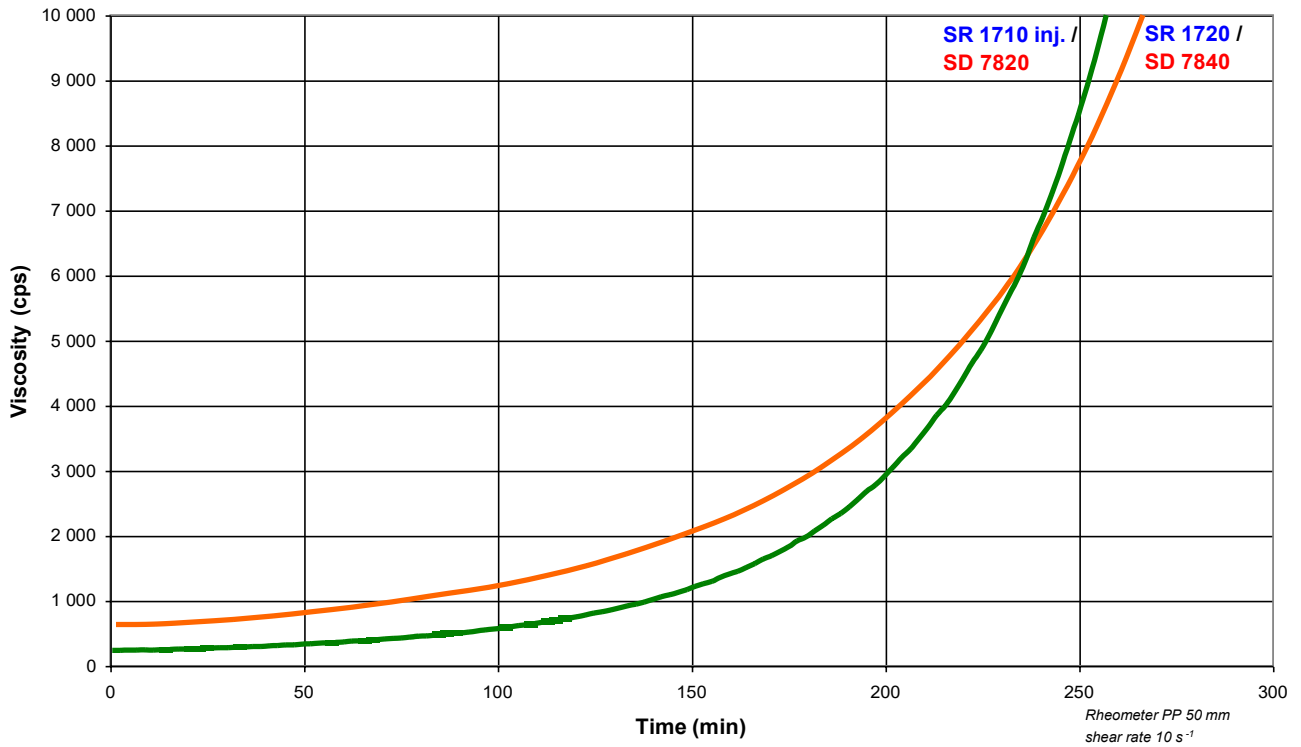
Reactivity – mass exotherm

		SR 1720 / SD 7840
Exothermic peak (°C) on 500 g mix :		
	20 °C	
	30 °C	
	40 °C	> 250 °C
Time to reach exothermic peak on 500 g mix :		
	20 °C	
	30 °C	
	40 °C	1 h 08'
Time to reach 50 °C on 500 g mix :		
	20 °C	
	30 °C	
	40 °C	42'

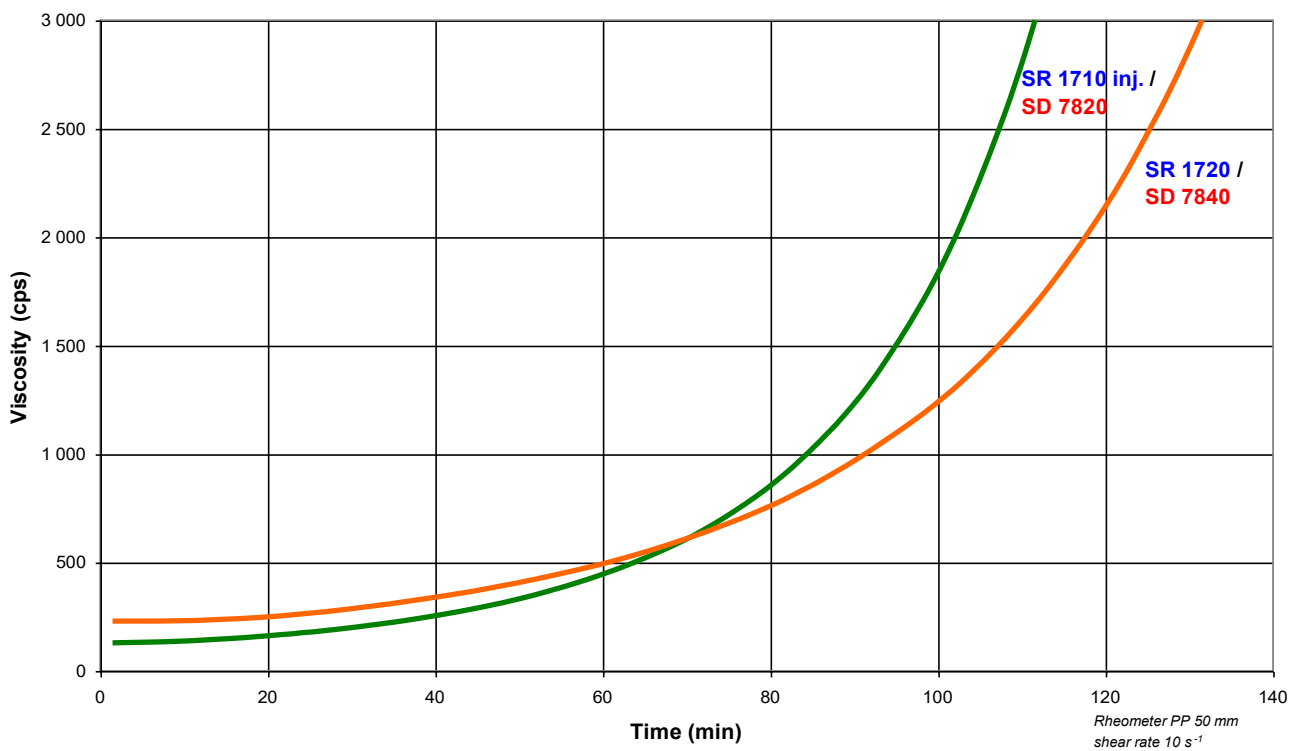
Reactivity – 1 mm film viscosity evolution



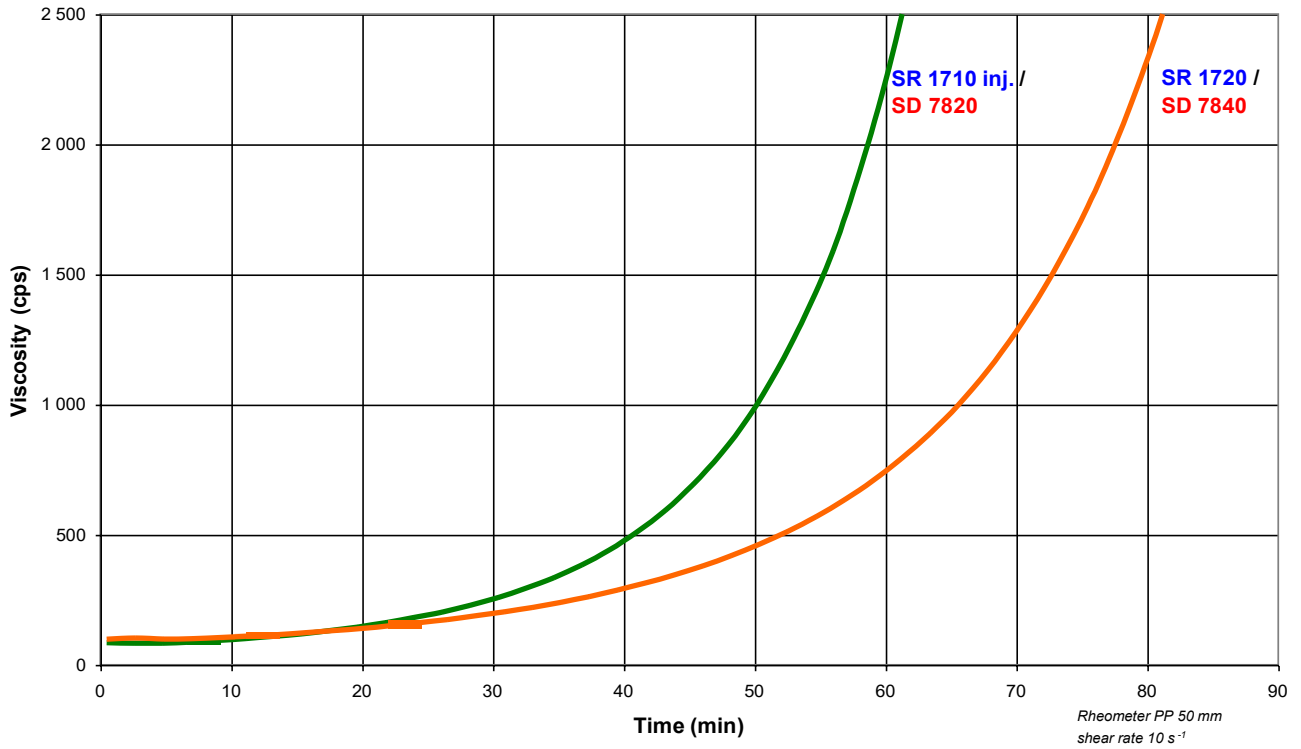
Comparative reactivity with SR 1710 inj. / SD 7820
- 30 °C



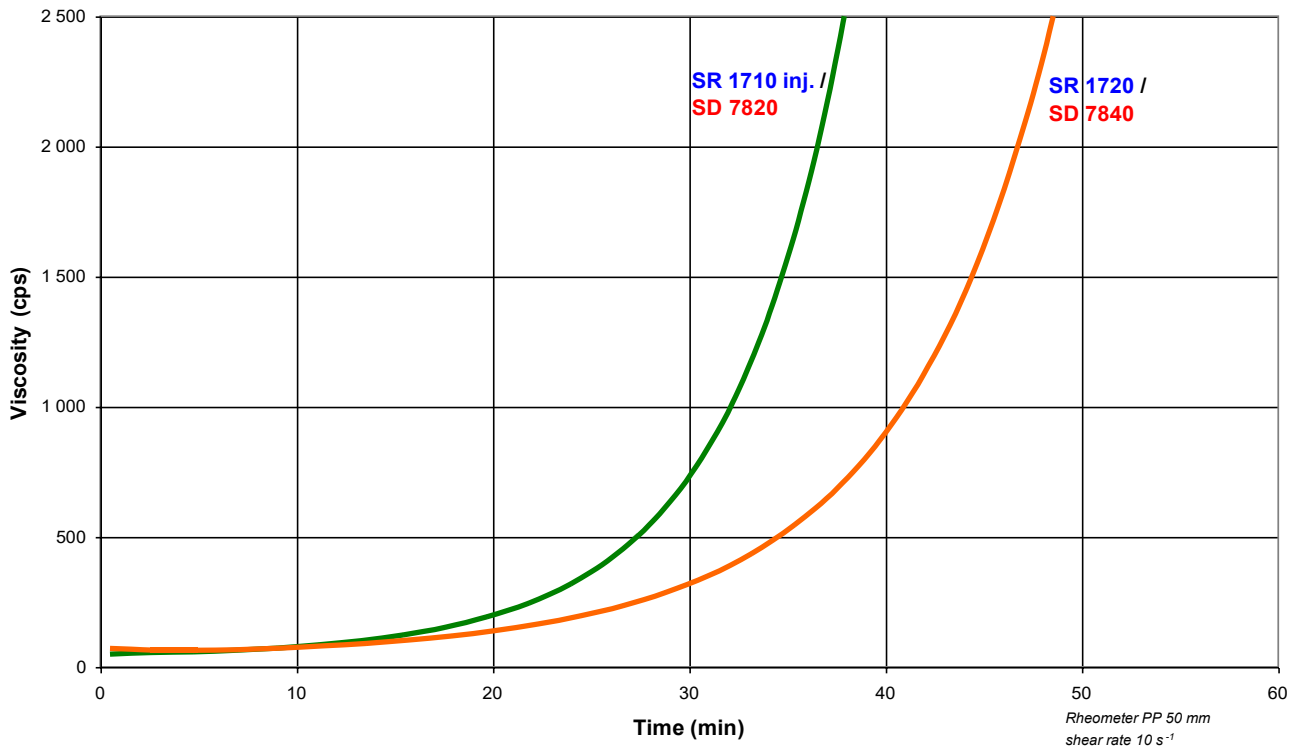
- 40 °C



- 50 °C



- 60 °C



Mechanical properties on pure cast resin

		SR 1720 / SD 7840	SR 1720 / SD 7840
Curing cycle		24 h 23 °C + 24 h 60°C	24 h à 23 °C + 8 h à 60 °C + 2 h à 80 °C + 2 h à 100 °C + 2 h à 120 °C + 2 h à 140 °C + 2 h à 160 °C + 2 h à 180 °C + 2 h à 200 °C
Tension			
Modulus of elasticity	N/mm ²	4 000	3 800
Maximum resistance	N/mm ²	44	45
Resistance at break	N/mm ²	44	45
Elongation at max. load	%	1.1	1.2
Elongation at break	%	1.1	1.2
Flexion			
Modulus of elasticity	N/mm ²	4 060	3 730
Maximum resistance	N/mm ²	95	58
Elongation at max. load	%	2.2	1.4
Elongation at break	%	2.2	1.4
Charpy impact strength			
Resilience	kJ/m ²	9	6
Glass Transition / DSC			
Tg1	°C	100	198
Tg1 max.	°C		200

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

Glass transition DSC : ISO 11357-2 : 1999 -5°C to 250°C under nitrogen gaz

Tg1 or Onset : 1st point at 20 °C/mn

Tg1 maximum or Onset : second passage