

SR 8100 / SD 3304

Infusion System

SR 8100 is a two component epoxy system. It has been specially formulated for resin transfer processes, such as injection or infusion.

This system has a very low viscosity at ambient temperature.

High mechanical properties can be achieved.

The cured system gives a temperature resistance up to 100°C (Tg 1)

A post cure is needed before demolding

Epoxy resin SR 8100

Appearance		liquid
Color		yellow
Gardner color		2 ± 0
Platine Cobalt Color Index		
Viscosity (mPa.s)	@ 15 °C	2350 ± 450
	@ 20 °C	1250 ± 250
	@ 25 °C	765 ± 155
	@ 30 °C	475 ± 95
	@ 40 °C	0 ± 0
Density	@ 20 °C	1,1580
Refractive index	@ 25 °C	1,554 ± ,002
Storage (months)	@ Ta	24

Hardener(s)

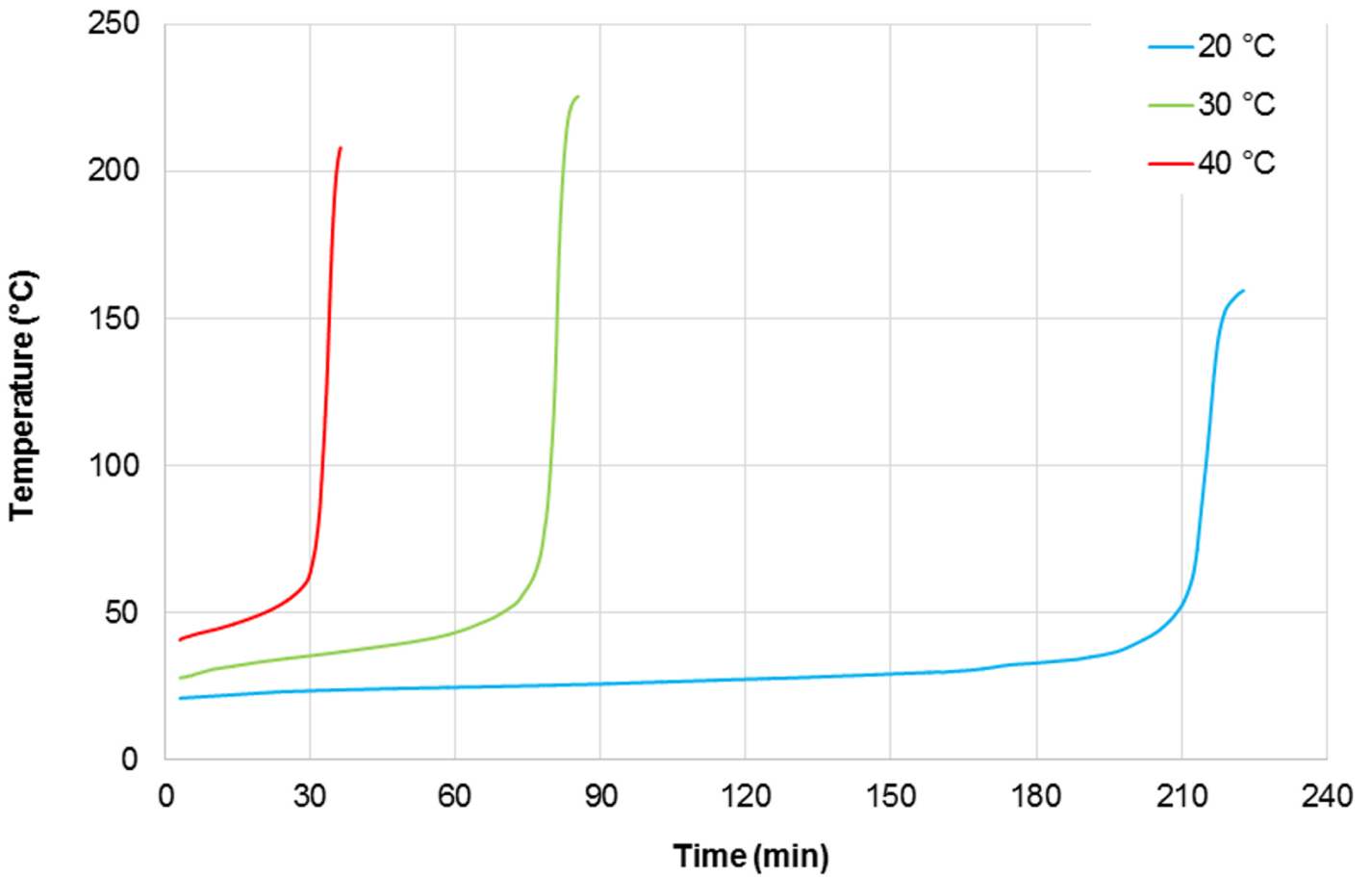
		SD 3304
Appearance		liquid
Color		colourless
Gardner color		0 ± 0
Platine Cobalt Color Index		40 ± 0
Reactivity level		Medium
Viscosity (mPa.s)	@ 15 °C	28 ± 5
	@ 20 °C	21 ± 4
	@ 25 °C	16 ± 3
	@ 30 °C	13 ± 3
	@ 40 °C	9 ± 2
Density	@ 20 °C	0,9230
Refractive index	@ 25 °C	1,4867 ± ,002
Storage (months)	@ Ta	24

Mixe(s) SR 8100 / SD 3304

		SD 3304
Appearance		liquid
Color		colourless
Mixing ratio		
	By weight	100 / 26
	By volume	100 / 33
Initial viscosity	@ 20 °C	380
PP 50 mm - 10 s-1 (mPa.s)	@ 30 °C	192

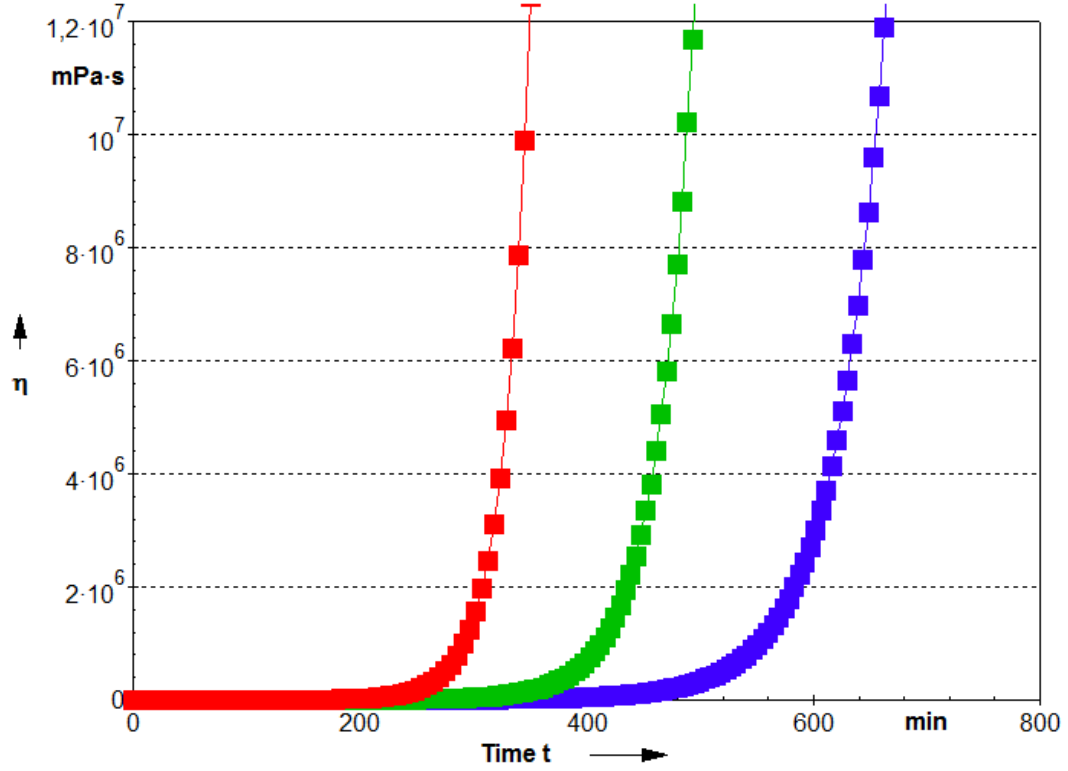
Reactivity on 500 g

	20 °C	30 °C	40 °C
Exothermic temperature (°C)	160	226	208
Time to reach exothermic peak (min)	223	85	36
Time to reach 50 °C (min)	209	69	20



Reactivity on 1 mm thick layer

@ 20, 25, 30 °C



Mechanical properties on cast resin :

		SR 8100 / SD 3304		
Curing cycles		24h @ TA + 16h @ 60°C	24h @ TA + 16h @ 60°C + 4h @ 80°C	+ 16h @ 60°C + 4h @ 80°C + 4h @ 120°C
Tensile				
Modulus	N/mm ²	3 500	3 400	3 300
Maximum strength	N/mm ²	74	79	76
Breaking Strength	N/mm ²	74	71	72
Elongation at max strength	%	3,1	4,6	5,7
Elongation at break	%	3,1	6,7	8,8
Flexion				
Modulus	N/mm ²	3 100	2 900	2 700
Maximum strength	N/mm ²	136	130	122
Breaking Strength	N/mm ²	88	82	95
Elongation at max strength	%	5,7	6,1	6,8
Elongation at break	%	9,9	11,7	11,6
Shear				
Breaking Strength	N/mm ²	51	50	50
Compression				
Modulus	N/mm ²			
Yield strength	N/mm ²	113	108	104
Offset compression yield	%	12,8	13,8	16,5
Charpy impact strength				
Resilience	kJ/m ²	36	61	32
DSC glass transition				
TG1 onset	°C	91	107	123
TG1 max onset	°C			125
DTMA glass transition				
TG tan delta	°C			
TeiG onset G'	°C			
TmG midpoint G'	°C			
TefG endpoint	°C			
TG peak G''	°C			

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

Measures undertaken according to the following norms:

Mechanical tests:

Tension:	NF EN ISO 527-2:2012
Flexion:	NF EN ISO 178:2011
Compression:	NF EN ISO 604:2004 or NF EN ISO 844:2014 (foam product)
Charpy impact strength:	NF EN ISO 179-1:2010
Shear Strength:	ASTM D732-17 (Punch Tool)
Interlaminar shrinkage strength:	ASTM D5528-13
Toughness (GIC et KIC) :	ISO 13586:2000

Water absorption: Internal. Polymerization according to cycle, machining, weighing, time spent in distilled water at 70 °C / 48 hours, weighing 1 hour after emerging,

Thermal tests:

Glass transition DSC:	NF EN ISO 11357-2:2014	-5°C to 180 °C under nitrogen gas
	T_{G1} or Onset:	1 st scan at 20 °C/min
	T_{G1} maximum or Onset:	2nd scan at 20 °C/min

Glass transition DTMA:	Temperature ramp 0 °C to 180 °C @ 2°C/min under normal atmosphere	
	NF EN ISO 11357-1:2016	T_G onset G'
	ASTM D4065-12	T_G peak G''

Physical tests:

Gardner color:	NF EN ISO 4630:2016	Visual method
Refractive index:	NF ISO 280:1999	
Viscosity:	NF EN ISO 3219:1994	Rheometer 50 mm, shear 10 s ⁻¹
Density on liquids:	ISO 2811-1:2016	Pycnometer
Density on solid:	NF EN ISO 1183-3:1999	Helium Pycnometer
Density on foam:	NF EN ISO 845:2009	
Gel time:	Cross G' G''	Rheometer CP50 - Shear rate 10 s ⁻¹
Green Carbone content:	ASTM D6866-16 or XP CEN/TS 16640 Avril 2014	

TA: Ambient temperature (20 to 25 °C)

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