



## SR 1690 / SD 7160

### Water clear casting epoxy system

Epoxy system formulated with highly translucent components, designed for decorative parts, prototype of jewellery where high finish is required.

#### Description

The very slow reactivity of SR 1690/7160 permits to cast thick sections in one operation, without a change of colour. You obtain a totally water clear polymer.

This epoxy system hardens at room temperature, in order to get the full mechanical properties, a post-cure from 40 to 80°C is advised.

Almost no odour during application.

Excellent resistance to thermal and physical shocks.

#### Resin SR 1690

Aspect :	Liquid	
Colour	Water clear Gardner < 1	
Chemical nature	Bisphenol / Epichlorhydrine	
Viscosity (mPa.s)	@ 20 °C	5 500
	@ 25 °C	2 200
Density (Kg/l)	@ 20 °C	1.176
Storage	Can crystallise at low temperature	

#### Hardener SD 7160

Liquid
Water clear
Polyamines
120
70
0.983
Excellent

#### System SR 1690 / SD 7160

Viscosity of mix (mPa.s)	at 20 °C	950
	at 30 °C	500
Colour	Water clear	
Time to achieve the exothermic peak on 1 kg mix / Temperature taken in the middle of casting	at 20 °C	24 h / 30 °C
	at 30 °C	7 h 30' / 150 °C
Dry to touch on 500 microns film	at 20 °C	24 hours
	at 30 °C	12 hours
Mixing ratio by Weight	<b>100 g</b>	<b>49 g</b>
Mixing ratio by Volume	<b>100 ml</b>	<b>57 ml</b>

#### Curing time

It depends on quantity of mix cast, geometry of the part, thermal conductivity of moulds and ambient temperature

**SR 1690 / SD 7160** is very slow on small casting. In order to reduce the release time, we advise to try several level of temperature during the cure, while controlling the exothermic temperature in the part.




#### Advised post cure cycle

Let cure at ambient temperature then increase the thermal properties of the system by a post-cure of:  
24 hours 40 °C or 8 hours at 40 °C + 12 hours at 60 °C

## Packaging (in Kg)

Kits	Resin <b>SR 1690</b>	Hardener <b>SD 7160</b>
298	200	4 x 24.5
80	2 x 27	26
14.9	10	4.9
7.45	5	2.45
1.49	1	0.49

## Toxicity / labelling

References	Symbols	Dangers	Risk Phrases
<b>SR 1690</b>	 	Xi Irritant  N Dangerous for environment	36/38 - 43
<b>SD 7160</b>		C Corrosive	21/22 - 34

Classification CEE according to Annexe I of the Directive 67 / 548 / CEE

## Mechanical properties on cast resin

Cure cycles	SR 1690 / SD 7160			
	14 days at 23 °C	48 h amb temp + 24 h 40 °C	48 h amb temp + 8 h 40° + 12 h 60 °C	
<b>Tensile</b>				
Modulus of elasticity	N/mm <sup>2</sup>	3300	3200	2900
Maximum resistance	N/mm <sup>2</sup>	66	63	64
Resistance at break	N/mm <sup>2</sup>	66	59	56
Elongation at max. resistance	%	2.8	2.9	3.5
Elongation at break	%	2.8	2.9	4.8
<b>Flexion</b>				
Modulus of elasticity	N/mm <sup>2</sup>	3300	3200	2900
Maximum resistance	N/mm <sup>2</sup>	103	105	106
Elongation at max. load	%	3.9	4.2	4.8
Elongation at break	%	7.3	9.6	10.2
<b>Charpy impact strength</b>	KJ/m <sup>2</sup>	22	46	51
<b>Glass Transition / DSC</b>				
Tg1	°C	52	62	77
Tg1 max.	°C			83

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

Choc Charpy: NF T 51-035

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

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