

# SC 180 NA

## Preliminary Technical Data Sheet

### EPOXY MODELING PASTE

Master Models – Plugs – Direct to Mold

Density 49.7 lbs/ft<sup>3</sup>, (0.79 g/cc, 6.6 lbs/gal)



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## DESCRIPTION

Extrudable epoxy paste for models, tools, and plug production by extrusion process.

## PROPERTIES

- Very good surface aspect.
- Good behavior on vertical support up to 1.18 in. (30 mm)
- Separate resin and hardener colors aid in good mix indication
- Lower exotherm than other traditional systems
- Application of 1.148 in. (30 mm) in one pass
- Maximum of 1.57 (40 mm) applied per pass under optimum conditions

### PHYSICAL PROPERTIES

	Test Method	Test Result	Test Result	Test Result
Composition		<b>RESIN</b>	<b>HARDENER</b>	<b>MIXED</b>
Mix ratio by weight		100	100	100/100
Mix ratio by volume at 77° (25°C)(nominal)		1	1	1/1
Aspect		Viscous paste	Viscous paste	Viscous paste
Color		Grey	Yellow	Greyish
Viscosity at 77°F (25°C) (Pa·s) (.09 Hz) (9.0 Hz)	IN-7.5-057	800 - 1200 170 - 230	700 - 1100 150 - 220	
Density at 77°F (25°C) (Lbs/gal)	ASTM D792	6.17 - 6.59	6.25 - 6.67	6.5 – 6.6
Specific gravity at 77°F (25°C) (g/cm <sup>3</sup> )	ASTM D792	.74 - .79	.75 - .80	.78 - .79

### MECHANICAL AND THERMAL PROPERTIES at 74°F (23°C)

	Test Method	Units	Test Result	Test Result
			7 days at 74°F (23°C)	24 hr at 74°F + 16 hr at 140°F
Hardness	ASTM D2240	Shore D	59	62
Glass transition temperature (Tg) TMA	ASTM E1545	°F/(°C)	149/(65)	180/(82)
Coefficient of thermal expansion TMA	ASTM E1545	10 <sup>-6</sup> .F <sup>-1</sup> /(10 <sup>-6</sup> .C <sup>-1</sup> )	41/(74)	43/(78)
Tensile strength	ASTM D638	Psi/(MPa)		1,449/(10)
Tensile modulus		Psi/(MPa)		188,370/(1,300)
Elongation		%		1.3
Flexural strength	ASTM D790	Psi/(MPa)	2,100/(15)	2,000/(14)
Flexural modulus		Psi/(MPa)	136,000/(939)	130,000/(897)
Compressive strength		Psi/(MPa)	3,600/(25)	3,500/(24)
Compressive modulus	ASTM D695	Psi/(MPa)	45,000/(310)	61,500(424)

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**During extrusion, the dispensing nozzle must be maintained perpendicular to the surface on which the product is applied. Ensure overlap of ribbon.**

**CAUTION: Exotherm mostly depends on the type of machine and on the working parameters such as:**

- Room temperature.
- Insulating property of frame.
- The mixture temperature (depending on the type of mixer: static or dynamic) and the speed of mixing and output.
- Applied thickness.

EXOTHERMIC PEAK AND HARDENING TIME *				
Thickness In. (mm)	Product temperature °F (°C)	Exothermic peak (hours)	Exothermic peak °F (°C)	Workability (hours)
1.57 (40)	72 (22)	2.9	145 (63)	16-18

\*Room temperature: 72 – 77°F (22 – 25°C); polystyrene support.

## PROCESSING CONDITIONS

On vertical support, it is recommended to apply a thin coat of product with a spatula; this will help to reinforce the bonding on the support.

For ceiling application, we recommend a maximum thickness of 1.18 in. (30 mm).

An elevated temperature cure of 16 hours at 140°F (60°C) after initial room temperature cure is highly recommended to allow the paste to develop its full properties for demanding applications.

(See page 3 for further pumping processing conditions)

## HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products:

- ensure good ventilation,
- wear gloves, safety glasses and protective clothes.

For additional information, please consult the Safety Data Sheet (SDS).

## STORAGE CONDITIONS

Use within 12 months of the manufacturing date. Expiration date indicated on the packaging.

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