

# Resin infusion products

## Toolfusion® 3A/ 3B

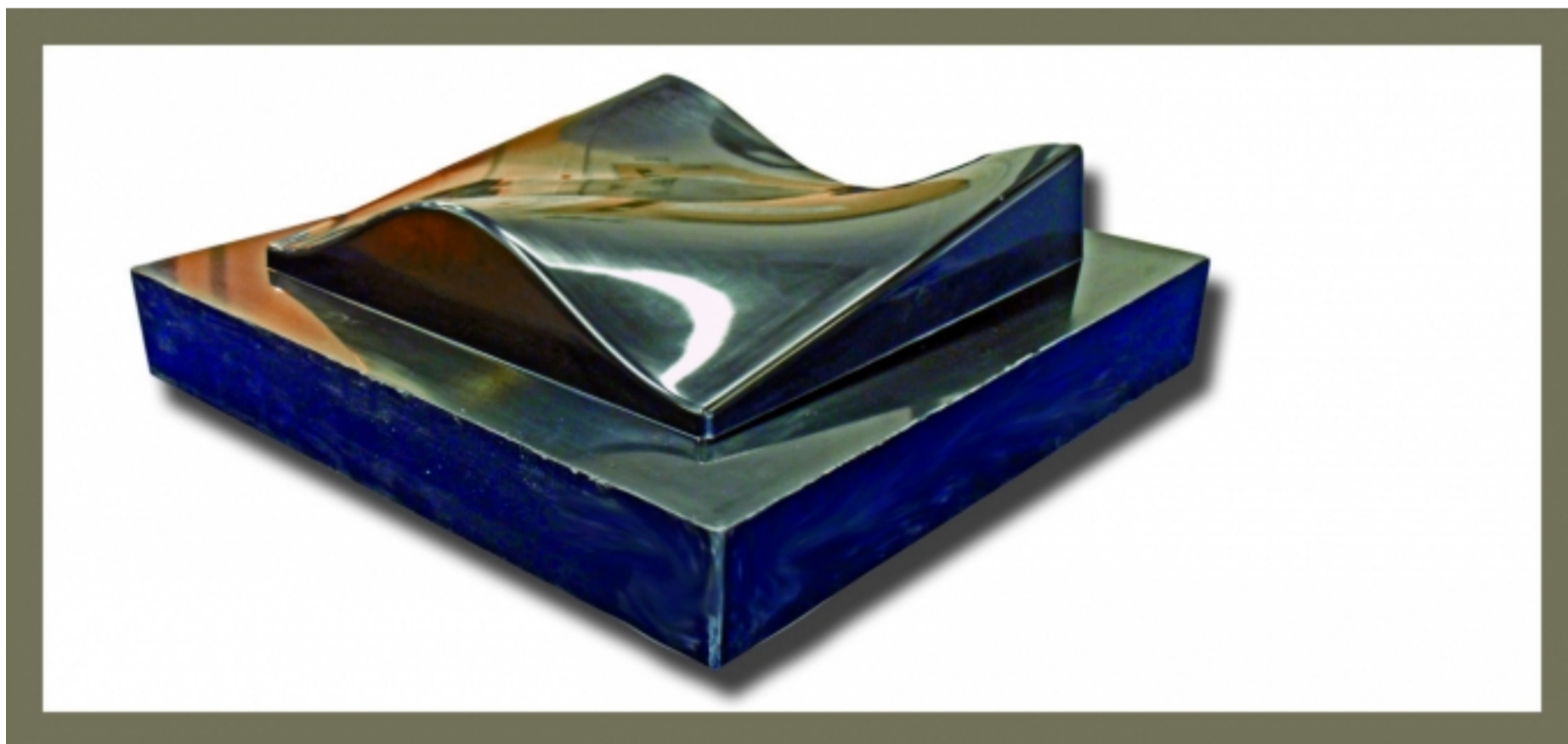
High temperature infusion resin with low initial cure temperature

### ■ DESCRIPTION

Toolfusion® 3A/ 3B is a two part low viscosity epoxy infusion resin formulated to produce pre-preg quality, composite molds. Toolfusion® 3A/ 3B has a low initial cure temperature of 120°F (49°C) and can be post cured to achieve a high glass transition temperature of 425°F (218°C). Void contents of less than 1% are achievable. Toolfusion® 3A/ 3B will work in various RTM and VARTM processes including single and double bag arrangements to produce autoclave quality laminates.

### ■ BENEFITS

- Resin infusion process delivers very high quality laminates with low manufacturing costs, no refrigeration costs, no autoclave running costs.
- Low initial cure temperature for low thermal expansion effect during curing and ability to use low cost master model materials.
- Nano technology delivers outstanding toughness & high Tg. (425°F or 218°C) for long tool life and reduced life cycle cost.
- Low viscosity allows infusion of thicker and more complex laminates with fewer resin feed lines.
- In comparison to metallic tools, Toolfusion® 3A /3B composite tools are lighter weight for easier manual handling.
- In comparison to metallic tooling, Toolfusion® 3A/ 3B composite tools have faster heat up and cool down rates for reduced production costs.
- Toolfusion® 3A/ 3B composite tooling laminates have vacuum integrity for vacuum bag processing of parts in oven and autoclave.



### ■ TECHNICAL DATA

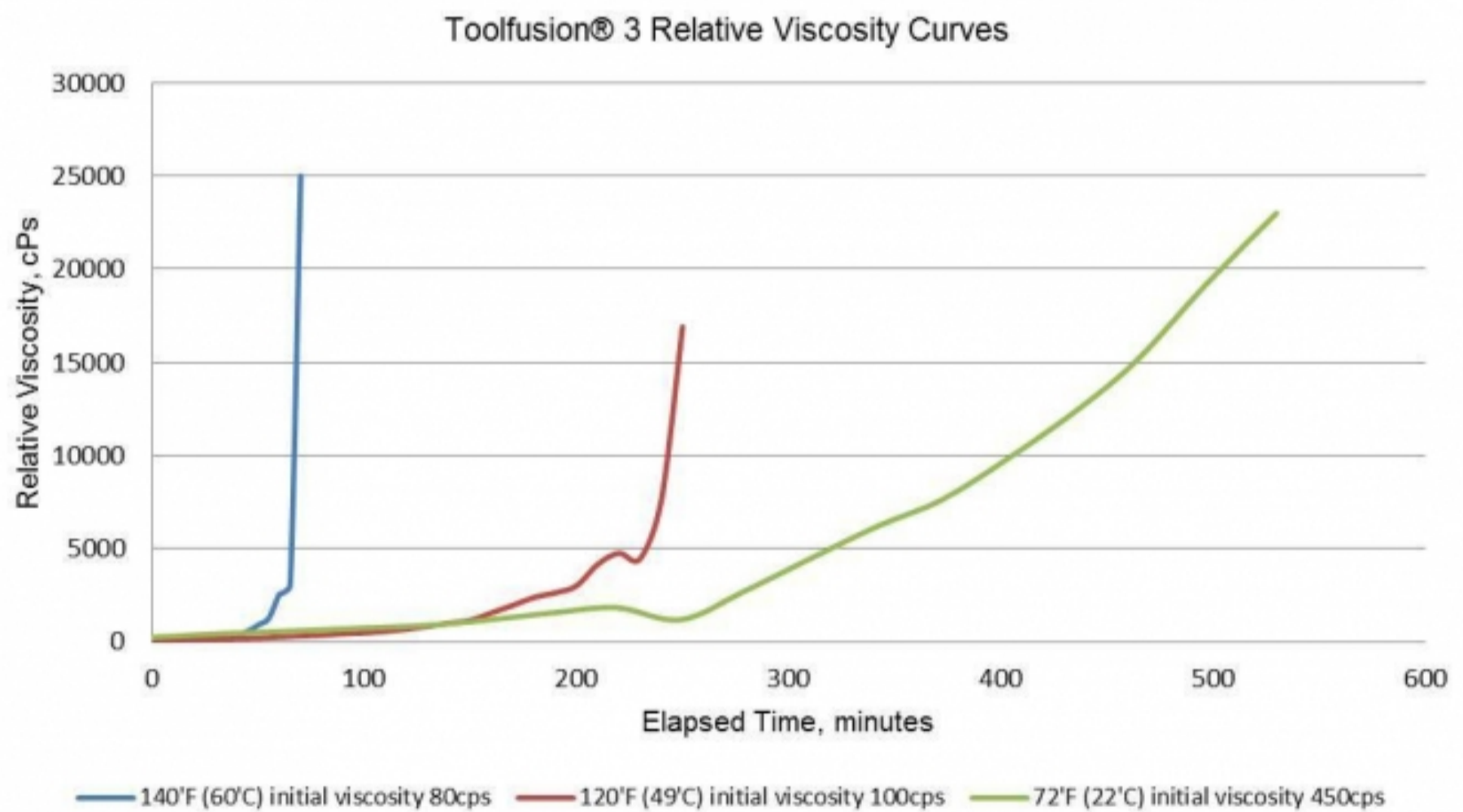
		Test method
Material type	Epoxy	
Color	Black : Clear (A : B)	
Mix ratio by weight	100 : 85 (A : B)	
Pot life	300 minutes (100 g at 72°F or 22°C)	

Viscosity (initial at 72°F or 22°C)	450 cps	
Density (mixed)	1.13 g/cm <sup>3</sup>	
Glass transition temperature	425°F (218°C)	
Hardness	89 Barcol	ASTM D2583
Shrinkage	0.9%	
Shelf life	12 months from date of shipment when stored in original packaging at 72°F (22°C)	

## ■ SIZES

Packaging Part A	Packaging Part B	Weight Part A	Weight Part B
5 gallons	5 gallons	45 lbs (20.4 kg)	40 lbs (18.1 kg)

## ■ CURING DATA



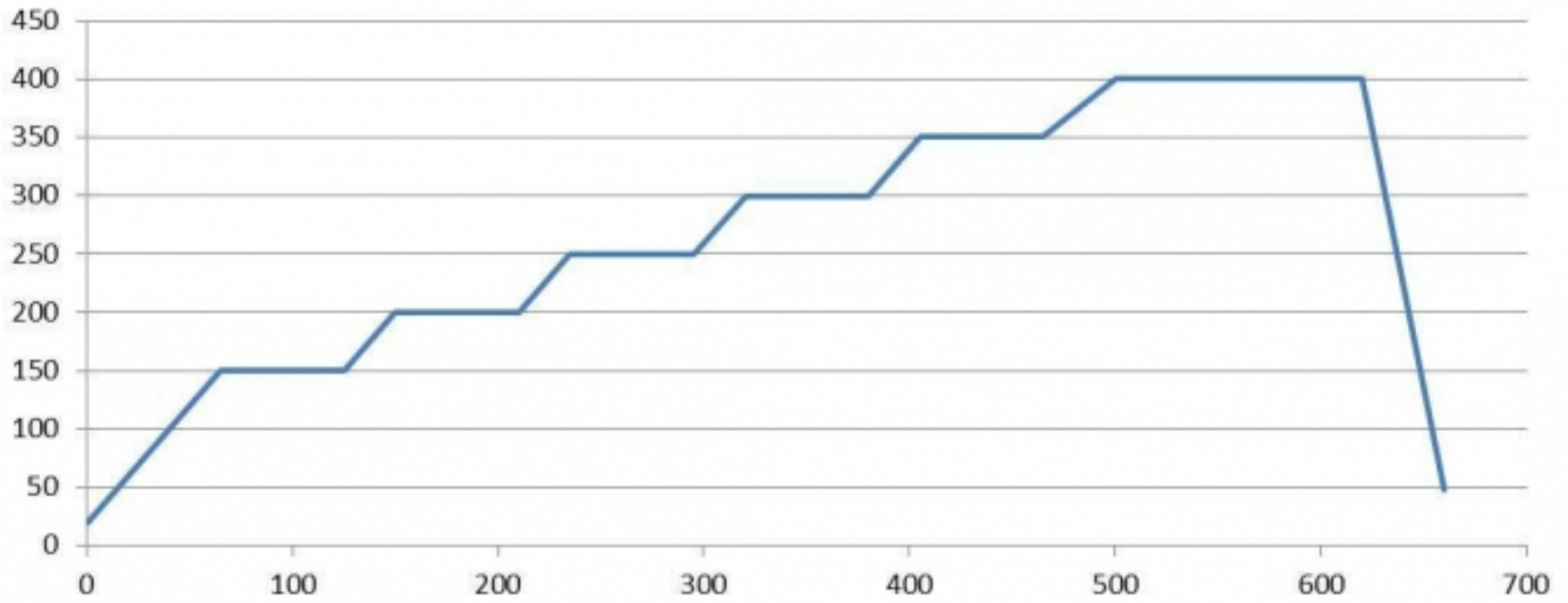
### Initial cure:

- Cure laminate on master model with full vacuum applied.
- Raise temperature to 120°F (49°C) and hold for 12 hours.
- Remove vacuum bagging materials and attach back-up structure if required.
- Carefully remove the laminate continue with post cure.

### Post cure schedule:

- Ramp to 150°F (65°C) and hold for 60 minutes.
- Ramp to 200°F (93°C) and hold for 60 minutes.
- Ramp to 250°F (121°C) and hold for 60 minutes.
- Ramp to 300°F (149°C) and hold for 60 minutes.
- Ramp to 350°F (177°C) and hold for 60 minutes.
- Ramp to 400°F (204°C) and hold for 120 minutes.

### Toolfusion® 3 Post Cure Schedule



#### ■ NOTES

- Part A and Part B are sold separately.

**Last updated** : 2020-08-26

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