

## Data Sheet

## TOOLFUSION® 1A/ 1B

High temperature tooling infusion resin with room temperature initial cure

### DESCRIPTION

Toolfusion® 1A/ 1B is a two part, low viscosity epoxy infusion resin designed to produce prepreg quality, high temperature molds at a fraction of the cost. Standard infusion vacuum bagging is all that is required to produce autoclave quality laminates. Toolfusion® 1A/ 1B requires room temperature master models and patterns further reducing the cost of composite tooling.

### TECHNICAL DATA

Material type	Epoxy
Color	Black : Amber (A : B)
Mix ratio by weight	100 : 20 (A : B)
Pot life	75 minutes (100 g at 72°F or 22°C)
Viscosity (mixed)	600 cps at 72°F (22°C)
Density	0.042 lb/in <sup>3</sup> (1.15 g/cm <sup>3</sup> )
Service temperature	375°F (191°C)
Hardness	88 Shore D
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 gallon	1 gallon	40 lbs (18 kg)	8 lbs (3.6 kg)
1 drum	3 x 5 gallons	500 lbs (225 kg)	3 x 35 lbs (15.9 kg)

- Part A and Part B are sold separately. Volume per container is dependent on weight.

### APPLICATION

#### Suggested initial cure:

- Cure the laminate/ tool on the pattern under full vacuum at room temperature until resin has gelled. If the pattern is temperature capable, place in oven overnight at 140-150°F (60-65°C). Remove from oven and attach backup structure if required.
- Demold from pattern and proceed with suggested post cure.

#### Room temperature cure for shop temperatures over 72°F (22°C):

- Cure the laminate/ tool to a pattern under full vacuum for a minimum of 24 hours. Attach proper backup structure (if required).
- Carefully demold and place tool in cold oven and raise temperature to 100-120°F (38-48°C). Use a maximum of 3°F (1.5°C)/ minute for all heat up rates.
- Dwell at this temperature for 4 hours then raise to 140-150°F (60-65°C).
- Dwell at this temperature for 4 hours before continuing with suggested post cure.

#### Room temperature cure for shop temperatures under 72°F (22°C):

- Place pattern with laminate/ tool under full vacuum in an oven, or tent the pattern and use space heaters to raise the temperature to 80-100°F (27-38°C) and dwell overnight or 10 to 12 hours. Attach proper backup structure (if required).
- Carefully demold laminate/ tool from pattern and place tool in cold oven and raise temperature to 100-120°F (38-48°C). Use a maximum of 3°F (1.5°C)/ minute for all heat up rates.
- Dwell at this temperature for 4 hours then raise to 140-150°F (60-65°C).
- Dwell at this temperature for 4 hours before continuing with suggested post cure.
- Laminate/ mold achieves a complete room temperature cure in 5-7 days at a minimum temperature of 72°F (22°C).

#### Free standing post cure instructions (for use after initial cure):

- 2 hours at 200°F (93°C), 2 hours at 250°F (121°C), 2 hours at 300°F (149°C), 2 hours at 350°F (177°C), 2 hours at 375°F (191°C).

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Catalog position : [Resin infusion products](#)