

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 ³ (1.15 g/cm ³)
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)

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).

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

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Catalog position : [Resin infusion products](#)