

# STAR Technology

FORMULATING • INNOVATIVE • SOLUTIONS

## 633-01

### Epoxy casting system

#### DESCRIPTION

STAR Technology 633-01 is an aluminum filled, intermediate high temperature casting systems for applications up to 300°F. It requires a heat cure for applications above 150°F. 633-01 is formulated with special aluminum fillers for maximum heat transfer. When determining the maximum depth of a pour, factors to appraise include the configuration of the cast and the thermal conductance of the master. 633-01 is non-staining and may be cast up to 3 inches deep. Typical applications for 633-01 include high temperature autoclave tools, bonding fixtures, vacuum form molds, core boxes and patterns, and prototype injection molds.

#### BENEFITS

Accurate reproduction of detail	Excellent machinability
Long working life	No MDA or VCHD

#### TYPICAL PROPERTIES

	<u>TEST METHOD</u>	<u>VALUE</u>
Mix Ratio:		
By Weight		100:9.3
By Volume		100:15.79
Mixed Viscosity (cps):	ASTM D2393	19,000
Density (lbs/cu ft):	ASTM D1475	95
(lbs/gal):		12.75
Pot Life (minutes):	ASTM D2471	100
Color		Grey
Cure Schedule:		
<u>24 hours @ 75° + 2 hours @ 150°F +</u>		
<u>1 hour @ 200°F + 1 hours @ 250°F +</u>		
<u>1 hour @ 300°F + 2 hours @ 350°F</u>		
Shore Hardness (D):	ASTM D2240	80
Thermal Conductivity (Cal/hr cm °C):		70.7
Ultimate Coefficient of Thermal Expansion (in/in/°C):		4.0x10 <sup>-3</sup>
Shrinkage (mm/mm):		nil
Compressive Ultimate Strength (psi):	ASTM D695	10000
Glass Transition Temperature (°F):		360
Maximum Service Temperature (°F):		300
Tensile Strength (psi):		324
Flexural Strength (psi):		62800
Flexural Modulus (psi):		926000
CTE (in/in/°C)		3.7E-5

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#### APPLICATION PROCEDURE

Carefully weigh out appropriate amounts of resin and hardener into a clean container and mix until all streaks are gone. Scrape the sides and bottom frequently to ensure complete mixing. Pour the mixed material in the thinnest stream possible onto a single spot of the mold cavity. Allow the mixture to flow over the mold surface to help eliminate air entrapment.

**NOTE:** To obtain optimum service temperature follow the suggested curing schedule with thermocouple monitoring. Thermocouple monitoring equipment is recommended on all post cured tools. High temperature tools should be post cured prior to use. High temperature tools should be cured 50°F beyond anticipated use temperature.

**CAUTION:** Unmixed material from the sides or bottom of the container can cause soft spots or uncured areas in the completed tool. To prevent this, transfer the entire mixed contents to a second clean container and re-mix for a short time before using.

**Additional Cure Schedule** - If thermocouple monitoring equipment is not available then a longer step cure is a better choice, e.g.

*2 hours @ 150°F + 2 hours @ 200°F +*

*2 hours @ 250°F + 2 hours @ 300°F +*

*2 hours @ 350°F*

#### SAFETY PRECAUTIONS

For industrial use only. Keep away from children.

Refer to the Safety Data Sheets (SDS forms) pertaining to this product before using.

Avoid contact with skin or eyes. In the event of an eye splash or contact, immediately flush with cold water for 15 minutes and contact a physician. If skin contact occurs, wash with mild soap and water. The wearing of safety glasses with side shields and impervious gloves is recommended.

#### RESIN WARNING STATEMENT

Warning! Causes irritation. May cause allergic skin reaction. Avoid all contact with skin, eyes, and clothing. Wash thoroughly after handling.

#### HARDENER WARNING STATEMENT

Danger! Corrosive. Causes burns to eye and skin. May cause allergic skin and/or respiratory reaction or sensitization. Do not get in eyes, on skin or clothing. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

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