

# STAR Technology

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## 603-04

### Epoxy Surface Coat System

#### DESCRIPTION

STAR Technology 603-04 is a gray, heat resistant, aluminum filled surface coat. Its excellent thixotropy allows for non-sag on a vertical surface. 603-04 provides excellent reproductions of surface detail. It requires a heat cure for applications above 150°F. When cured according to the cure schedule, 603-04 can be used continuously at 275°F. and intermittently up to 325°F. It is ideal for use with STAR high temperature laminating systems, such as 610-01. When choosing any surface coat, consideration should be given to tool size, configuration, build method, and final use. Generally, high temperature tools dictate the thinnest surface coat practical for the application. Typical applications for 603-04 include high temperature tooling aids, bonding fixtures, RIM molds, foundry patterns, core boxes, and vacuum form molds.

#### BENEFITS

Excellent intermediate high temperature properties  
Excellent dimensional stability

No sag on a vertical surface  
Accurate reproduction of detail

#### TYPICAL PROPERTIES

		<u>TEST METHOD</u>	<u>VALUE</u>
Mix Ratio, Resin to Hardener	Parts by Weight		100:13
	Parts by Volume		100:16
Mixed Viscosity (centipoise)		ASTM 2393	52,000
Density (lbs./cu.in.)		ASTM 1475	.0528
(lbs./gal.)			12.19
Pot Life at 75°F (minutes)		ASTM 2471	30 to 40 minutes
Color			Grey
Cure Schedule:	24 hours @ 75 °F + 2 hours @ 150°F + 1 hour @ 200 °F + 1 hour @ 250°F + 1 hour @ 300 °F + 2 hours @ 350 °F		
Shore Hardness (D)		ASTM 2240	86
Tensile Strength (psi)		ASTM D638	4,089
Flexural Strength (psi)		ASTM D790	12,000
Flexural Modulus (psi)		ASTM D790	1355,000
Compressive Ultimate Strength (psi)		ASTM D695	12,000
Glass Transition Temperature (°F)		By DSC	250
Maximum Service Temperature (°F)			325
Shrinkage (%)			Nil
Coeff of exp. (in/in/°c)			2.5E-5

#### APPLICATION PROCEDURES

Carefully weigh out appropriate amounts of resin and hardener into a clean mixing container and thoroughly mix until all streaks and striations are gone. Scrape the sides and bottom frequently to insure complete mixing. Do not use a paint shaker.

**NOTE:** To obtain optimum service temperature follow the suggested curing schedule with thermocouple monitoring.

Thermocouple monitoring is recommended on all post cured tools. High temperature tools must be post cured prior to

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use. High temperature tools should be cured 50°F beyond anticipated use temperature.

**603-04**

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**CAUTION:** Unmixed compound from the sides or bottom of the container can cause soft spots or uncured areas in the complete casting. To prevent this, transfer the entire mixed contents to a second clean container and remix 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*

### PRECAUTIONS

For industrial use only. Keep away from children.

Refer to the Material Safety Data Sheets (MSDS 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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