

### DESCRIPTION

AC 2320-1 is a versatile aluminum filled epoxy casting system for use in high-temperature resistant tooling applications. It was specifically formulated to be low settling, with room temperature set properties, allowing demolding without post cure. Three hardeners are available, allowing castings to 6" thick in thermally conductive molds without the addition of bulk fillers. When cured according to the cure schedule, it can be used continuously at 250°F (121°C), and intermittently up to 275°F (135°C) to meet a wide range of tooling application. The geometry of the cast and the insulating quality of the master must always be considered in determining the maximum volume that may be poured.

### APPLICATIONS

- High temperature laminating molds
- High temperature autoclave tools
- Bonding fixtures
- Foundry patterns and core boxes
- Vacuum form tools
- Prototype injection molds

### PROPERTIES

- Excellent high temperature properties
- Excellent dimensional stability
- Outstanding reproduction of detail
- Excellent machinability
- Room temperature cure
- No MDA or VCHD

PHYSICAL PROPERTIES					
		AC 2320-1 Resin	AC 2320-1 Fast Hardener	AC 2320-1 Medium Hardener	AC 2320-1 Slow Hardener
Composition		Epoxy	Amine	Amine	Amine
Mix ratio by weight		100	7	5	8
Aspect		Thixotropic paste	Liquid	Liquid	Liquid
Color		Gray	Clear amber	Clear amber	Dark Amber
Viscosity at 77°F (25°C)	ASTM D2393	Paste	25,000	27,000	22,000
Specific Gravity at 77°F (25°C)	ASTM D792	1.57	1.65	1.68	1.67
Pot life at 77°F (25°C) (minutes)	ASTM D2471		60 - 75	120 - 150	180 - 210
Demold time* (hours)			24	24 - 36	48 - 72
Maximum Casting Thickness (Inches)			1.5	1.5	6

Depending on part thickness

### PROCESSING

- Thoroughly mix resin and hardener according to the indicated ratio. Release agent must be applied to the pattern. For maximum heat resistance, an elevated temperature postcure is required. Allow completed tool to set overnight at room temperature before starting postcure.
- If thermocouple monitoring equipment is not available to monitor tool temperature during postcure, then a longer step cure is recommended.
- High temperature tools should be cured 50°F (28°C) beyond anticipated use temperature.

- Example postcure schedule for tool intended for 300°F (149°C) use temperature: demold time at room temperature; 2 hours at 150°F (66°C); 2 hours at 200°F (93°C); 2 hours at 250°F (121°C); 4 hours at 300°F (149°C); temperature ramp for both heating and cooling is 60°F (33°C)/hour.

MECHANICAL and THERMAL PROPERTIES <sup>(1)</sup>					
			Fast	Medium	Slow
Volumetric weight		lbs/in <sup>3</sup> (g/cc)	0.060 (1.65)	0.061 (1.68)	0.060 (1.67)
Hardness	ASTM D2240	Shore D1	84	84	95
Tensile Strength	ASTM D638	psi (MPa)	7,950 (55)	7,000 (78)	5,100 (35)
Flexural Strength	ASTM D790	psi (MPa)	15,300 (105)	14,600 (101)	14,800 (102)
Flexural Modulus	ASTM D790	psi (MPa)	1 X 10 <sup>6</sup> (6,900)	1 X 10 <sup>6</sup> (6,900)	1 X 10 <sup>6</sup> (6,900)
Compressive Strength	ASTM D695	psi (MPa)	32,100 (221)	39,600 (273)	24,800 (171)
Coefficient of Thermal Expansion	TMA	ppm/°F (°C)	24 (44)	24 (43)	26 (47)
Shrinkage	ASTM D256	%	0.1%	0.1%	0.1%
Tg	DMA	°F (°C)	264 (129)	306 (152)	253 (123)

<sup>(1)</sup> The above properties were obtained under laboratory conditions using standardized specimens. Postcured per schedule given in "Processing"

## STORAGE CONDITIONS

Product is guaranteed for 12 months in a dry place and in original unopened containers at a temperature between 59 – 77°F (15 – 25°C). Any opened can must be tightly closed.

## HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products:

- Ensure good ventilation
- Wear gloves, safety glasses and impervious clothes.

For further information, please consult the material safety data sheet.

## GUARANTEE

The information contained in this technical data sheet result from research and tests conducted in our Laboratories under precise conditions. It is the responsibility of the user to determine the suitability of AXSON products, under their own conditions before commencing with the proposed application. AXSON guarantee the conformity of their products with their specifications but cannot guarantee the compatibility of a product with any particular application. AXSON disclaim all responsibility for damage from any incident which results from the use of these products. The responsibility of AXSON is strictly limited to reimbursement or replacement of products which do not comply with the published specifications