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HIGHEST TEMPERATURE-RESISTANT EPOXY SYSTEMS

TDS 850212

TECHNICAL DATA

SUGGESTED USES:

CASTING, BONDING, POTTING, ENCAPSULATION of electric, structural, and industrial components to be used at **temperatures up to 300°C.** Casting and assembly of tools, patterns, models and structural components that must operate in extremely hot and corrosive environments.

ABOCAST 50-7/ABOCURE 8501-4:	Clear, high viscosity.	Structural/dielectric.
ABOCAST 50-24/ABOCURE 8501-4:	Clear, low viscosity.	Structural/dielectric.
ABOCAST 8501-4/ABOCURE 8501-4:	Gray high viscosity.	Structural/machinable.
ABOCAST 8501-5/ABOCURE 8501-4:	Gray, high viscosity.	Structural/dielectric.
ABOCAST 8501-6:	1-component System. Clear, low visc.	Structural/dielectric.

SPECIFICATIONS (pbw = parts by weight):

	pbw	pbw	pbw	pbw	pbw
ABOCAST 50-7	100				
ABOCAST 50-24		100			
ABOCAST 8501-4			100		
ABOCAST 8501-5				100	
ABOCAST 8501-6					100
ABOCURE 8501-4	89	115	41	41	
COLOR	Clear Amber	Clear Amber	Gray	Gray	Clear Amber
VISCOSITY:					
Poises/Temp.°C	1.5/80°	80/25°	300/25°	300/25°	170/25°
POT LIFE:					
Time/Temp.°C	2 hrs/80°	14 hrs/25°	20 hrs/25°	20 hrs/25°	5-9 months
HIGHEST OPERATING TEMPERATURE	298°C	295°C	300°C	300°C	259°C

The exceptional high temperature performance offered by these systems was obtained with the following curing cycles:

2 hours @ 95°C + 24 hours post-cure @ 260°C for the 2-component systems.
(alternate cure for lower requirements: 2 hrs @ 90°C + 4 hrs @ 200°C).

2 hours @ 95°C + 15 hours post-cure @ 230°C for ABOCAST 8501-6.
(alternate cure for lower requirements 2 hrs @ 110°C + 3 hrs @ 160°C).

(continued)

CHARACTERISTICS:

ABOCAST 50-7/ABOCURE 8501-4 is the **most versatile** of the clear unfilled systems. It is equally outstanding as a casting compound, as an adhesive and as a coating. Its flexural, compressive and tensile strengths respectively: 14,600 psi, 37,100 psi and 7,100 psi - are the highest in the series. These values are already reached with the lower curing cycles, which, however, lower the heat resistance to 185-200°C. The higher crosslinking achieved in the higher curing cycle increases the modulus and the overall chemical resistance. As a coating, it is thinned with **ABOSOLV 8411-1B** for brushing, or with **ABOSOLV 8411-1S** for spraying.

ABOCAST 50-24/ABOCURE 8501-4 is a **low-viscosity** version with a slightly higher modulus and slightly lower physical strength. The dielectric properties are the same or better. The lower viscosity renders this product especially useful in dielectric applications where maximum wetting and penetration are paramount. It is also excellent for high–performance laminates.

ABOCAST 8501-4/ABOCURE 8501-4 is the **highest-temperature tooling compound and structural epoxy adhesive** known. In spite of its high hardness, it offers the best machining properties in its class. Good heat transfer and exceptionally low shrinkage complete the set of properties that render this a superb resin for casting, tooling and bonding.

ABOCAST 8501–5/ABOCURE 8501-4 is a **dielectric version of the 8501-4** system. It offers the highest hardness and abrasion resistance in this series, but it requires carbide tools for machining. It is very successful where high heat transfer, structural/dielectric strength and low coefficient of thermal expansion are needed, in addition to the highest heat and chemical resistance .

ABOCAST 8501-6 is the **one-component epoxy system** that provides the highest heat and chemical resistance in its class.

Due lo chemical similarity, the above products share the following typical values on chemical resistance (% weight change after 120 days immersion):

30% Sulfuric Acid: 0.7
35% Hydrochloric Acid: 1.1
40% Nitric Acid: 1.1
Distilled Water: 1.2
30% Ammonium Hydroxide: 2.0
25% Acetic Acid: 1.2
95% Ethyl Alcohol: 0.5
40% Chromic Acid: 0.8
Acetone: 3.8
Ethylene Dichloride:10.7
Toluene: 0.25
50% Sodium Hydroxide: -0.16
JP 4 Fuel: 0.1
10% Citric Acid: 1.1.

ABOCAST 50-24, ABOCAST 8501-4, ABOCAST 8501-5, ABOCAST 8501-6 can also be supplied in **red, green, black, or special custom blends.**

Each of the above systems is independent of the others; yet their complete compatibility and interchangeability allows many variations and combinations. Their use is easy. Thorough mixing, application on clean and dry surfaces, use of ovens for curing, optional use of dispensing equipment, safety and house-cleaning rules are the same as with most epoxy compounds.

The above information is the result of accurate laboratory and field tests. However, no guarantee is offered, as uses and applications are beyond our control. Specifications are subject to state-of-the-art changes. [Rev. 911104].