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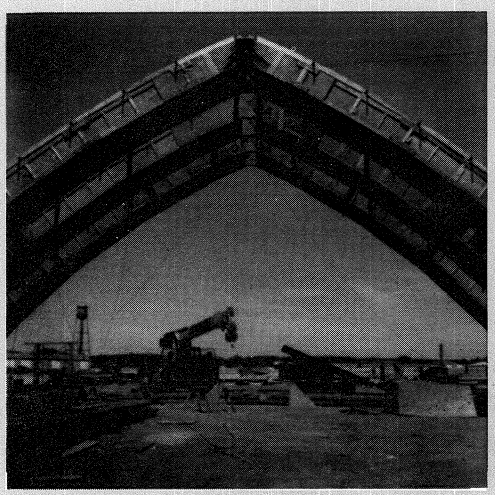
ABOCAST 50-3

TDS 850130

TECHNICAL DATA



CLEAR EPOXY ADHESIVE AND CASTING COMPOUNDS FOR STRUCTURAL AND DIELECTRIC USES.

SUGGESTED USES: High-strength, permanent **bonding of metal, ceramic, glass, laminates and most rigid materials** in dielectric, structural, marine and industrial applications, circuit boards, laminates, fittings, glass blocks, magnetic or electric assemblies. **Manufacturing components** with high chemical, thermal and shock properties. As it is virtually shrinkfree, it is an excellent **casting, potting and encapsulation compound** in electronic, scientific and general applications.

ABOCAST 50-3 is a medium viscosity, clear Epoxy Resin that can be hardened by mixing with any of the following **ABOCURE** converters:

- **ABOCURE 50-1:** Clear-amber. Room temp. cure. Variable ratios. Slow. High viscosity.
- **ABOCURE 50-3:** Clear-amber. Room temp. cure. Variable ratios. Slow. Low viscosity.
- **ABOCURE 50-12:** Colorless. Room temp. cure. High modulus. Fast. Very low viscosity.
- **ABOCURE 50-17:** Dark liquid. High temp. cure. Slow. High heat and chemical resistance.

CHARACTERISTICS of 4 basic combinations (pbw = parts by weight):

	pbw	pbw	pbw	pbw
ABOCAST 50-3	100	100	100	100
ABOCURE 50-1	40			
ABOCURE 50-3		40		
ABOCURE 50-12			13	
ABOCURE 50-17				27
VISCOSITY, POISES	180	25	23	110
POT LIFE	2 hrs	3 hrs	0.5 hrs	6-8 hrs
HARD WITHIN	8 hrs	12 hrs	4 hrs	1 hr/100°C
DEFLECTION TEMP	105°C	72°C	115°C	160°C
TENSILE STRENGTH PSI	8300	8600	11400	10200
COMPRESSV STRENGTH PSI	12400	11300	16300	16800
ELONGATION %	4.5	6	4	3.5
V.RESISTIVITY CA	1.22×10^{16}	1.0×10^{16}	6.1×10^{15}	1.22×10^{16}
WATER ABS. 7 DAYS	0.38%	0.49%	0.39%	0.43%
NaOH 50% ABS. 7 DAYS	0.01%	0.03%	0.0%	0.01%
JP4 FUEL ABS. 7 DAYS	0.03%	2.1%	0.02%	0.03%
H_2SO_4 30% ABS. 7 DAYS	0.67%	1.6%	0.69%	0.55%
MAIN ADVANTAGES:				
	slow, thick var. ratios r.t. cure versatile impact res low exotherm thick adhesive	slow, thin var. ratios r.t. cure versatile impact res low exotherm easy to cast	fast, thin hi. modulus r.t. cure hard tough chem res hi exotherm r.t. hardest	hi-temp, thin chem/temp res oven cure hard hi-temp chem/temp res low exotherm hi.te. best

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ABOCAST 50-3/ABOCURE 50-1: the most versatile room-temperature clear epoxy adhesive, for its combination of chemical, physical, thermal and electrical properties. The thick-honey viscosity is desirable for many surfaces and conditions. A still thicker, thixotropic, variation with the same properties is also available in **ABOWELD 55-22/ ABOCURE 55-22**. Conversely, **ABOCAST 8412-5** is a low viscosity version (like thin motor oil) that can be used in place of **ABOCAST 50-3.**

ABOCAST 50-3/ABOCURE 50-3: is preferred when the **ABOCAST 50-3/ABOCURE 50-1** is too viscous, especially for casting, potting and encapsulating applications where bubble-free flow, high resistivity and low exotherm are needed simultaneously.

ABOCURE 50-4, is another version of **ABOCURE 50-1** and **50-3,** but with intermediate viscosity, and same ratios, pot life, curing and properties.

ABOCAST 50-3/ABOCURE 50-12: offers the lowest viscosity and the fastest hardening in the series. It is also the room temperature curing system with the highest rigidity, hardness, heat and chemical resistance.

ABOCAST 50-3/ABOCURE 50-17: is the obvious choice for high-temperature requirements. This system is also excellent for very large castings that would be charred by a too high exotherm from faster-reacting resins.

All but the last harden at room temperature and are fully cured in 1-4 days at room temperature, or 1-3 hours at 80-120°C. High temperature cure optimizes properties but it is not necessary.

ABOCURE 50-17 requires heat curing: 1-2 hours @ 70-100°C + 1-2 hours @ 100-130°C + 1-2 hours @ 130-150°C. Small castings and thin layers can be cured faster. Very large castings require the slowest curing cycles (starting with overnight hardening at room temperature) to avoid excessive exotherm. They can be used alone or in combination with glass fibers and other fillers.

ABOCURE 50-1, 50-3 and 50-4 are **"variable-ratio converters."** That is: 35 to 100 pbw **ABOCURE** can be blended with 100 pbw **ABOCAST 50-3.** The lower **ABOCURE** ratios (35-50 pbw) offer the highest rigidity, chemical and heat resistance. Higher **ABOCURE** ratios yield increasing flexibility and shock resistance.

INSTRUCTIONS FOR USE:

Surfaces must be clean and dry. Sandblasting, sanding or roughening after cleaning is recommended.

ABOCAST/ABOCURE mixing must be thorough, or "soft spots" result.

Application is simple. Brushes, rollers, spray guns or squeeze bottles can be used.

Hardening, temperature. Hardening starts when **ABOCAST** and **ABOCURE** are mixed. **POT LIFE** is the time after mixing, before the blend hardens in the mixing container. The reaction is exothermic (heat generating) and is accelerated by heating. **Thick, bulky quantities harden much faster** than thin layers.

Heating greatly accelerates the reaction. An adhesive layer that would need 10 hours to harden at 25°C could harden in 5-8 minutes at 80°C.

Curing is the complete reaction that continues beyond hardening. It may need 1-3 weeks at room temperature or just hours (or even minutes) with heating.

More detailed information is available to our customers.

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. The user is urged to test and adapt the above data in his own conditions and environment. Specifications may be subject to state-of-the-art changes. [910329]