



# ABATRON, INC.

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## ABOCAST 10-5

TDS 850110

### STRUCTURAL ADHESIVE & CASTING COMPOUND FOR OPTIC & ELECTRIC INDUSTRY

Filled, High-Viscosity Epoxy Resin for several 2-component systems obtained with variable and interchangeable blends with any of the following converters:

- ABOCURE 3-4: Tan room-temperature-cure converter in paste form. Variable ratios.
- ABOCURE 50-3: Clear room-temperature-cure, low-viscosity converter. Variable ratios.
- ABOCURE 50-12: Clear room-temperature-cure, low viscosity converter. High modulus.
- ABOCURE 50-17: High-temperature and chemical resistance, high-modulus liquid converter.

#### SUGGESTED USES:

Bonding metal, ceramics, glass and other rigid materials. Casting small or large masses for precision and dimensional stability. Mounting diamond pellets to metal lap bodies for optical grinding. Assembling optical and electrical instruments. Casting abrasive wheels. Dielectric potting and encapsulating for heat, water and chemical protection. Casting tooling fixtures for wet drilling and machining. Embedding magnets. General-purpose casting and bonding for structural and dielectric uses.

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

	pbw	pbw	pbw	pbw
ABOCAST 10-5	100	100	100	100
ABOCURE 3-4	25-70			
ABOCURE 50-3		20-65		
ABOCURE 50-12			6.5	
ABOCURE 50-17				13.0
Color	green	green	green	green
Viscosity	paste	fluid	fluid	fluid
Pot Life: (100 gms @ 25°C)	1 hour	2 hours	40 minutes	6-8 hours
Time to harden (hours/temp.° C)	2-6h/25° C	3-8h/25° C	1-6h/25° C	0.6-1h/100° C
Highest operating Temperature	85° C	85° C	130° C	160° C
Main advantages:	Very thick Slow Var. ratios Room temp. cure Adhesive Thermocycling	Low viscosity Slow Var. Ratios Room temp. cure Low exotherm Thermocycling	Low viscosity Faster Very hard Room temp. cure Small castings Chem. resistant	Low viscosity Very slow Very hard High heat res. Large castings Chem. resistant

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The first 3 harden at room temperature and are fully cured within 1-4 days at room temperature (thick layers cure much faster than thin films), or in 1-3 hrs @ 80-120°C. High temp. curing or post curing optimizes properties, but it is not necessary. ABOCURE 50-17 requires heat curing: 1-2 hrs @ 80-100° C + 1-2 hrs @ 110-120° C + 1-2 hrs @ 130-150° C. Small castings and thin layers can be cured faster. Very large castings require the slowest curing cycles (starting with overnight hardening @ room temp.) to avoid excessive exotherm.

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#### CHARACTERISTICS:

All 4 offer superb adhesion, virtually no shrinkage, high resistance to alkalis, diluted acids, water, many solvents and outdoors. They are all dielectric. Typical test averages: 14,300 psi compressive strength, 4,100 psi tensile, 9,000 psi flexural All offer higher strength than other rigid materials like phenolics or ceramics. Individual characteristics are as follows:

ABOCAST 10-5/ABOCURE 3-4 is used as a thick adhesive for metal, ceramic, glass and other rigid materials, or also for troweling rustproof wear resistant surfaces. It offers good thermo conductivity. As ABOCURE 3-4 can be used from 25 to 70 pbw with 100pbw ABOCAST 10-5, the properties of the cured product can vary from higher rigidity, chemical and heat resistance of the lower ABOCURE ratios (25-30pbw) to higher flexibility, thermoshock resistance and better adhesion to critical substrates of the higher ABOCURE ratios (up to 60-70pbw).

ABOCAST 10-5/ABOCURE 50-3: as good adhesive, chemical and physical properties as the above system, but slower and easily pourable for casting. Excellent for potting and encapsulation of delicate electronic components and general casting of small and large objects. Versatile variable-ratio possibilities.

ABOCAST 10-5/ABOCURE 50-12: preferred when the highest hardness, rigidity, chemical and heat resistance obtainable with any room-temperature cure are desired. Excellent for castings with high requirements.

ABOCAST 10-5/ABOCURE 50-17: the highest modulus, hardness, heat resistance and chemical resistance in this series. It always seems to provide the answer where other epoxies have failed. It also allows the largest castings, such as over 5 gallons per pouring. This system has far higher resistance to strong solvents and other chemical agents than the other compounds.

Each of the above systems is independent of the others, yet their complete compatibility and interchangeability allows any blending among them.

Their use is very simple. Thorough mixing, application on clean surfaces, use of heat to accelerate hardening, induction period for thin layers, use of dispensing equipment, safety and housecleaning rules are the same as with any low-toxicity epoxy. Further user instructions will be sent upon request.

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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.