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**TDS 850214**

## COLORLESS, LOW-EXOTHERM EPOXY CASTING COMPOUNDS

**2-Component Structural and Dielectric Liquid Systems with Extremely Low Shrinkage.**

**ABOCAST 8502-5/ABOCURE 8502-5:** For Spherical Masses up to 500 grams. Rigid
**ABOCAST 8502-6/ABOCURE 8502-6:** For Spherical Masses up to 2000 grams. Flexible.
**ABOCAST 8502-7/ABOCURE 8502-7:** For Larger Masses. Rigid. Heat cured.

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**SUGGESTED USES:**

**TRANSPARENT CASTING, EMBEDDING, ENCAPSULATION, POTTING AND BONDING.** Casting display or experimental models. Precise reproduction of anatomical or scientific models. Embedding organic, geologic or metallurgic specimens for commercial or scientific uses. Encapsulation of electric, radioactive or delicate components. Preservation or repair of artistic and historical objects. High-performance transparent table tops.

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**CHARACTERISTICS** of the 3 blends (pbw = parts by weight) are:

| | pbw | pbw | pbw |
|---|---|---|---|
| **ABOCAST 8502-5** | 100 | | |
| **ABOCURE 8502-5** | 30 | | |
| **ABOCAST 8502-6** | | 100 | |
| **ABOCURE 8502-6** | | 30 | |
| **ABOCAST 8502-7** | | | 100 |
| **ABOCURE 8502-7** | | | 73 |
| **APPERANCE** | Clear | Clear | Clear |
| **VISCOSITY poises** | 4 | 3 | 20 |
| **POT LIFE @ 25°C** | 5-6 hours | >8-12 hours | 3 days |
| **CURE, 1st step** | 24 hours @ 25°C | 24 hours @ 25°C | 16-20 hrs @ 70 °C |
| **CURE, 2nd step** | 1-2 hrs @ 65°C | 2 hrs @ 50 °C | 2-4 hrs @ 100 °C |
| **CURE optional 3rd step** | 1-6 hrs @ 80-110°C | 1-6 hrs @ 80° | 2-4 hrs @ 125 °C |
| **HARDNESS, shore D** | 85 | 75 | 85 |
| **DEFLECTION TEMPERATURE** | 60-80°C | 32-40 °C | 105-118 °C |
| **COMPRESSIVE STRENGTH** | 14438 psi | 4846 psi | 16800 psi |
| **FLEXURAL STRENGTH** | 14946 psi | n.a | 15200 psi |
| **FLEXURAL MODULUS** | $5.1 \times 10^5$ | $0.02 \times 10^5$ | $3.3 \times 10^5$ |
| **ULT. TENSILE STRENGTH** | 9831 psi | 2602 psi | 9910 psi |
| **ULT. ELONGATION** | 2.6 psi | >100 % | 5.6 % |
| **8 hr boil WATER ABSORPTION** | 1.1 % | 3.9 % | 0.4 % |
| **3 hr boil ACETONE ABSORTION** | 8.8 % | 26.3 % | 1.2 % |

<continued>

**CHARACTERISTICS** continued

**ABOCAST 8502-5/ABOCURE 8502-5** is probably the highest-grade casting system with the best balance of colorlessness and other properties obtainable with room-temperature curing. The size of its castings is limited by its exotherm (heat of reaction) in bulky castings. In such cases, casting is done in successive thinner layers (to avoid excessive exotherm) until the desired thickness is reached. It gives superior decorative and laboratory embedments, table- and counter-top castings for restaurants and bars. Lower cost versions are known as "**decoupage" resins.** Many **faster-curing versions are also available.**

**ABOCAST 8502-6/ABOCURE 8502--6** is unmatched for **embedding very delicate specimens and components** that are very sensitive to heat, pressure and chemical attack. Its hardening is so slow that small castings may remain fluid for over 30 hours at room temperature. Slicing for microscopy is very easy with it, especially in the first cure stage, when the Shore D hardness is still below 60-70. It is also used with 8502-5, either blended with it for intermediate properties, or as the base layer in larger and thicker castings where some flexibility and thermocycling resistance is desirable under a harder surface.

**ABOCAST 8502-7/ABOCURE 8502-7** represents the highest level of thermal, chemical and physical properties available together with colorlessness, lowest shrinkage and low viscosity for easy casting. Very large, massive 8502-7 castings can harden in several days at room temperature, or very slightly above it, for best colorlessness. This system also offers the best dielectric properties.

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**INSTRUCTIONS FOR USE**

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

**Hardening, temperature, color.** Hardening starts when ABOCAST and ABOCURE are mixed.

**POT LIFE** is the time the mix remains workable (before hardening) in the mixing container. The reaction is exothermic (heat generating (and is accelerated by heat. **Thick masses harden much faster** than thin layers.

**Excessive heat or exotherm causes yellowing.** Therefore, longer cures at lower, or room temperature and smaller castings are the first choice, especially with 8502-5. On the other hand, casting large surfaces in thin layers and/or on heat absorbing underlayers generates little exotherm or yellowing. Casting in successive layers is preferred where one-shot large castings may cause excessive exotherm. The proper choice is determined by simple test-casting in each case.

**Bubble-free castings** are easily obtained with a little practice. Vacuuming the blend or slightly warming the resin and hardener prior to mixing gives excellent results, but they are not always necessary.

**Heating greatly accelerates the reaction. E.g.:** a casting of 8502-6 that would harden in 24 hours @ 25 °C would harden in 45-50 minutes id 60 °C or 30-33 min. @ 80 °C.

**Curing** Is the complete reaction that continues beyond hardening. It may need 1-:3 weeks at room temp., or Just hours (or even minutes) with heating. Heat cure or post cure is used to optimize the rigidity, chemical and heat resistance. Further instructions will he sent: with the materials.

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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.