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ABOCAST 7802-1

TDS 850121

ABOCAST 7802-1 Epoxy System

Clear, Low-Viscosity, Dielectric/Structural, Radiation-Resistant Resin for Casting, Coating and Adhesive Applications. Minimum toxicity. Available as 2-Component System with Several Converters, of which 4 are here described.

SUGGESTED USES:

Multi-purpose casting, coating and bonding for applications requiring high dielectric resistance, structural strength and radiation resistance, as well as resistance to weather, water, alkalis, diluted acids, fuels and most common solvents. Originally developed for FERMILAB.

TYPICAL TESTS:

- ABOCAST 7802-1:** Clear Resin. Low viscosity: 600-800 cps. 9.1 Lbs/Gallon
- ABOCURE 50-12:** Converter for high rigidity, chem. and temp resistance (HDT: 101°C)
Low viscosity: 22-30 cps. Clear. 8.1 Lbs/Gallon.
- ABOCURE 50-3:** Slow converter for lower rigidity. HDT: 60°C. Variable ratio. 300 cps. Clear. 7.8 Lbs/Gallon.
- ABOCURE 7804-3:** Same as ABOCURE 50-3, slightly accelerated.
- ABOCURE 7804-4:** " " " " , more " .

(*): parts by weight

ABOCAST 7802-1 (*)	100	100	100	100	100	100	100
ABOCURE 50-12 (*)	13						
ABOCURE 50-3 (*)		40	80				
ABOCURE 7804-3 (*)				40	80		
ABOCURE 7804-4 (*)						40	80

VISCOSITY (blended)	300	500	400	450	350	400	350
min.-max. cps	500	700	600	650	500	600	500
POT LIFE (100 gms)	45 min.	5 hrs.	4 hrs.	4 hrs.	2 hrs.	1 hr.	1 hr.

SHORE-D HARDNESS:

after 1 hour	80						
" 24 hours	80	20	30	50	50	40	50
" 72 hours	80	65	65	70	60	75	65
" 3 hours @ 100°C	85	75	70	80	60	80	65

SHORE-D HARDNESS of

1/8 inch thick casting							
after 24 hours	75	<10	10	30	25	20	25
" 72 "	75	20	45	40	40	60	40
" 3 hours @ 100°C	85	75	65	80	60	80	60

TENSILE STRENGTH: psi	12-14M	5-7M	2-3M	6-8M	2-4M	6-9M	2-3M
" ELONGATION: %	5-7	10-15	>20	10-18	>20	12-18	>20
FLEXURAL STRENGTH	15-18M	9-12M	2-3M	9-13M	2-3M	9-13M	2-3M
COMPRESSIVE "	11-12M	7-8M	2-3M	7-9M	3-4M	7-9M	2-3M
DIEL. STRENGTH: V/MIL	400-475	400-500	300-400	400-475	300-400	400-475	300-400
WATER ABSORPTION: %	.1-2	.1-3	.2-4	.1-2	.2-4	.1-2	.2-4

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CHARACTERISTICS:

Versatility is probably the most obvious attribute of the above combinations, especially if one considers that all the described combinations are infinitely compatible and miscible for intermediate results.

The **variable-ratio** possibilities of the ABOCURE 50-3, 7804-3 and 7804-4 allow any proportion from 40 to 100 parts by weight of ABOCURE for 100 parts ABOCAST. The more ABOCURE is used (relative to ABOCAST) the more flexibility and shock resistance is obtained, as well as decreased heat and chemical resistance.

Tenacious adhesion to metals, ceramics, glass, wood and most rigid materials permits permanent structural and dielectric bonds.

Absence of volatiles and minimum shrinkage, typical of solventless epoxy systems, allow castings and masses of virtually any desired thickness.

As to **toxicity**, the ABOCAST 7802-1/ABOCURE 50-3 blends are probably the least toxic epoxy systems known.

INSTRUCTIONS FOR USE:

Surfaces must be thoroughly clean and dry for good adhesion. Sandblasting, sanding or roughening after washing and degreasing is recommended.

ABOCAST/ABOCURE mixing must be thorough, or "soft spots" result. A rod, spatula, paddle or power mixer are all adequate for most purposes.

Pot life is the time the blend remains workable before hardening.

An **INDUCTION PERIOD** (initial reaction in the mixing container, after mixing) of at least 5 minutes may be necessary to avoid "tacky hardening" of thin layers exposed to atmospheric moisture during application.

Hardening, Cure, Temperature. All the above systems harden by chemical reaction, not by "drying". The slow-curing ones (e.g. with ABOCURE 50-3) can be cast in virtually any thickness because of their low exotherm (reaction heat). The reaction develops heat and is accelerated by heat. **Large masses harden much faster** (for their bulk retains the heat of reaction) than small masses. The same quantity that hardens in 2 hours in a full pint can may need more than 10 hours if spread in a thin layer.

Heating greatly accelerates the process. For instance, the 10-hour hardening at 25°C may be reduced to 5-10 minutes at 80°C. **CURE** (completion of the reaction) continues for 1-3 weeks at room temperature, or just hours (or even minutes) with heating. Cold retards the hardening process.

VISCOSITY is greatly decreased by heat and increased by cold. Thus, better flow, wetting and adhesion, as well as faster hardening, are obtained on a warm surface, or with warm resin.

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