Technical Data Sheet

HYSOL®OS4000

February 2003

PRODUCT DESCRIPTION

Hysol® OS4000 is a fast curing, water-white epoxy casting compound designed for the encapsulation of L.E.D. lamps and displays. The mixed compound will gel rapidly at temperatures above 120°C; following a short post cure of 2 hours @ 125°C it will develop high strength, moisture resistant castings with excellent thermal shock properties. OS4000 can be colored and diffused by the addition of specific dye concentrates, AC7113 red, AC7044 green and AC7088 diffusant concentrate.

TYPICAL APPLICATIONS

Optoelectronic Liquid Encapsulant

PROPERTIES OF UNCURED MATERIAL

	OS4000 Part A	OS4000 Part B
Color	Lt. Blue	Lt. Yellow
Specific Gravity @ 25°C, (77°F) Gm/cc ASTM D1475	1.15	1.22
Shelf Life @ 25°C, (77°F), months	12	12

	Typical Value
Viscosity @ 25°C, (77°F) ASTM D2393	
Brookfield, cP	6,500 / 200

PHYSICAL PROPERTIES, CURED MATERIAL

	OS4000
Color	Water-white
Coefficient of Thermal Expansion, in/in/°C ASTM D3386	65 x 10^{-6}
Glass transition T(g), °C, minimum ASTM D3386	120
Moisture Absorption, % (ASTM D570)	
24 hours @ 25°C	0.10%
Hardness, Shore D, (ASTM D2240)	90
Flexural Strength, psi (ASTM D790)	30,000

Cured Electrical Properties

	25°C	
	K	D
100 Hz	3.08	0.006
1 kHz	3.04	0.011
10 kHz	2.97	0.014
100 kHz	2.89	0.012

K = Dielectric constant by ASTM D150
D = Dissipation Factor by ASTM D150

Handling

(Recommended mix ratio and typical mixed properties)

Mix Ratio, parts by weight*	100/100
Pot Life, Hours	4
Gel time, minutes	
@121°C (250°F)	6
@100°C (212°F)	22
Initial mixed viscosity, cPs	
@ 25°C, (77°F)	1,000

*Mix ratio of these materials is fixed by their chemistry. Any attempt to increase or decrease the cure rate by adding more or less hardener will result in degraded materials.

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or their strong oxidizing materials

Cure Schedule

(Recommended for optimum properties)

Demold time (lamps)	(Cold mold) 20-30 minutes @ 150°C (Warm mold) 10-15 minutes @ 150°C
Post cure	2 hours @ 125°C for lamps
Alternate Cure	4 hours @ 100°C
For displays	

Typical cured properties were determined using the recommended cure schedule. Some differences in properties may occur with the alternate or other cure schedules.

Note

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