



HYSOL®FP4650

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PRODUCT DESCRIPTION

Hysol® FP4650 is a high purity, liquid epoxy encapsulant. FP4650 features very low thermal expansion properties while retaining syringe dispense capabilities. It is based on FP4450 chemistry, which features improved moisture absorption and corrosion resistance properties.

TYPICAL APPLICATIONS

Liquid encapsulant

PROPERTIES OF UNCURED MATERIAL

Color	Black
Filler content, (%), (ITM3A)	83
Specific gravity, (ITM9A)	1.91
Shelf Life @-40°C, (-40°F), months	6
	Typical Value
Viscosity (ITM2A)	
Brookfield RVT	
@ 25°C (77°F)	
Spindle 7, Speed 4, Cp	325,000
@60°C (140°F)	
Spindle 7, Speed 20, Cp	17,000

PHYSICAL PROPERTIES, CURED MATERIAL

Color	Black
Glass Transition (Tg), °C, (ITM65B)	140
Coefficient of Linear Thermal Expansion, (ITM65B)	
in/in/°C, (40°C-120°C)	15 x 10 ⁻⁶
Filler content, %	83
Extractable Ionic Content, @ 121°C (ITM107B)	
Chloride (Cl-), ppm	13
Sodium (Na+), ppm	5
Potassium (K+), ppm	5

Handling

Gel Time @ 121°C, (250°F), minutes, (ITM10N)	13
Pot Life @ 25°C, (77°F), days (ITM10T), (time required to double viscosity)	8

Frozen storage at approximately -40°C or lower is required for maximum shelf life. Frozen packages must be completely thawed before use. Warm at room temperature until no longer cool to the touch (normally 20-60 minutes). Do not thaw in an oven. For best results, FP4650 should be dispensed onto a substrate warmed to approximately 80°C. This will help minimize air entrapment. Warm FP4650 to 40°C for faster dispensing. Elevated temperature reduce working life. Do not store above -40°C.

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 Cure	1 hour @ 120°C plus
	2 hours @ 160°C

Designed to be used with packaged which are affected by higher levels of stress. This cure recommended for optimum properties.

Alternate Cure	3 hours @ 170°C
Designed for robust packages which are not sensitive to stress.	

Use suggested cure conditions as general guidelines. Other cure conditions may yield satisfactory results.

Note

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Loctite Electronics

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