



**RELTEK** LLC

adhesives, sealants & coatings for harsh environments

# **BONDIT™ B-481**

## **Adhesive, Coating and Encapsulant**

### **Bonds dissimilar materials**

A coating & potting for high performance applications and harsh environments. An adhesive for bonding dissimilar materials such as plastics including UHMW, HDPE, PP, PET, PEEK, PPS, PBT, Acetal, ETFE, PVC, PVCF, PVDF, ABS, ECTFE, polyamide, polyimide rubber and urethane compounds on metal, glass, composites, cement, wood and cellulose.

### **High chemical resistance**

Superior chemical resistance for moisture and oil, acids and bases, fuels and solvents in continuous full submersion. High stability to 350°F continuous as a rugged system. Suitable for autoclave applications.

### **Easy use**

Two part, primerless, semi-rigid epoxy, high tensile strength, ambient and thermal cure. Available in hand-held and pneumatic gun actuated cartridges, quarts, gallons and drums.

### **Harsh environments**

Marine,  
Civil Engineering,  
Downhole oil,  
Underwater,  
Electronic,  
Mining,  
Industrial,  
Automotive.





**BONDIT™ B-481**

## **Description**

**BONDIT™ B-481** is a two-part, state-of-the-art 100% solids, room-temperature curing semi-rigid epoxy resin system. Especially designed for potting, coating, and adhesive applications for electronics and electrical assemblies, environmental sealing, hard coating for corrosion resistance, structural bonding metals, plastics and elastomers to various substrates with high tensile, shear and peel strength.

B-481 handles harsh environments easily and is particularly effective against moisture, salt water, acids, alkalies, oils, fuels and detergents, and is suitable for autoclave applications. B-481 has high thermal stability, readily handling 350°F continuous. B-481 offers good corrosion resistance. The intrinsic flexible resin properties of B-481 permit assembly of materials with dissimilar thermal expansion and survive thermal cycling down to -65°F. Yet it offers high tensile strength with the flexibility. Likewise, mechanical vibration, shock and impact are absorbed while protecting surfaces, bonded assemblies and encapsulated sensitive electronics. The B-481 system is often superior in performance to urethane adhesives, sealants and coatings. B-481 may be pigment or dyed for color, or be made conductive.

B-481 is unfilled and low viscosity, while B-481TH is silicate filled and thixotropic, meaning a thick coating on vertical surfaces will not sag, but is easily poured from a can. Apply B-481 by roller, brush or spray. B-481 is very easy to use with low HAZMAT impact as a 100% solids epoxy system--no plasticizers that bloom to the surface and no solvents causing VOC problems. B-481 as the unfilled version is most useful for potting and clear coating applications to replace urethanes while the filled version B-481TH is most useful as an adhesive.

## **Mixing, Curing, and Storage**

A wide range of curing regimes may be employed: ambient set in 6 hours, tack free in 12 hours, and 95% cure in 24 hours; cure at 150°F tack free in 2 hours 98% in 6 hours; or 3 hours full cure at 200°F with no ambient incubation time.

Mix part A with part B, 2:1 ratio by volume or weight. Degassing is optional. Pot life is typically 40 minutes, at ambient temperature. Surface prep by abrading or grit blasting substrates with #100 AlOx followed by degrease and/or alcohol wipe. Often no abrasion is necessary with tolerance to dirty substrates.

The usable shelf life of unopened containers of **BONDIT™ B-481** resin is one year, and should be stored in cool, dry place. When not in use, containers should be kept tightly closed.

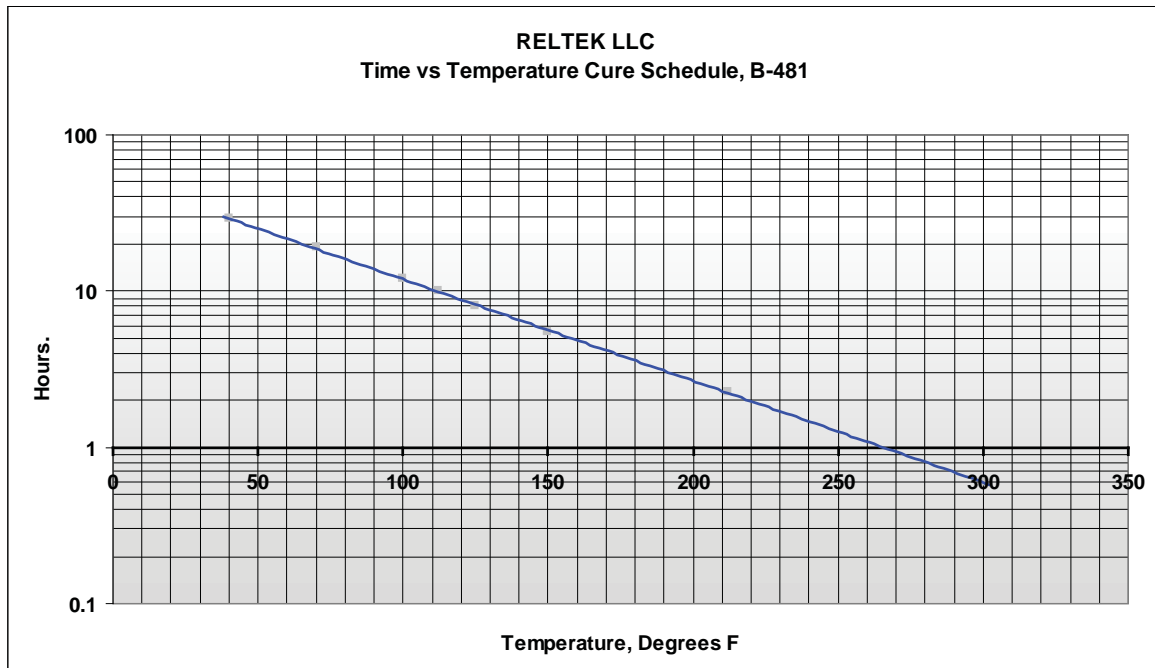
**BONDIT™ B-481** is available in side-by-side handheld and pneumatic actuated gun cartridges, quarts, gallons, pails and drums, as well as custom packaging, such as premixed and degassed frozen cartridges. B-481 is offered as paste for caulking, and electrically and thermally conductive with or without metal filler. A very high wear ceramic version is also available.



BONDIT™ B-481

## Mechanical Test Data

Tensile Test: ASTM D638; all values mean													
Test Round #1	Mix Ratio	Cure Method	Peak Stress	Strain @ Peak Load	Energy to Peak Load	Break Stress	Elong @ Break	Energy to Break	TEA	Energy / Vol @ Break	Yield Stress	Yield Elong	Tangent Modulus
	2:1 A/B	°F	PSI	%	PSI	PSI	%	In-Lb	Ft-Lb / Sq.In	Ft-Lb / Cu.In	PSI	%	PSI
Weight		3 hours @ 200°F + 1 hour @ 300°F	5975	1.95	9.19	5945	2.0	9.74	3.38	6.70	5975	2.0	579389
		4 days @ ambient	2258	10.01	24.09	2321	34.0	101.00	34.58	65.60	758	10.1	54446
		3 hours @ 200°F	4794	9.59	35.78	4566	12.9	54.03	18.99	37.89	4794	9.6	90425
		4 days @ ambient + 3 hours @ 200°F	4464	7.88	25.55	4462	7.9	25.68	9.23	17.95	4464	7.9	93636
		15 hours @ 200°F + 30 days ambient	5115	8.87	36.99	4907	11.3	52.37	4.30	34.46	5115	8.9	100001





## BONDIT™ B-481

### Typical Properties

#### Material Property

Color	Clear with slight amber
Denisty	1.01 gr/cm <sup>3</sup> [Cured 3 hrs @ 200°F + 30 days ambient]
Durometer ASTM D2240	69 - 79 Shore D [Cured 3 hrs @ 200°F + 30 days ambient]

#### Eletrical

Voltage withstand	> 500 VDC/.001"with .004" minimum
Leakage current	< 33microamp @ 290VDC /.004"
Insulation Resistance	> 3 x 10 <sup>12</sup> ohm/.004" @ 1000VDC, 25°C 62% RH
	> 2 x 10 <sup>12</sup> ohm/.125" @ 5000VDC, 25°C 62% RH

#### Chemical Absorption

Moisture, ambient	<1% weight gain
Oil, Isopar M	<1% weight gain
Gasohol 85/15	<20% weight gain
Methanol	<20% weight gain
HCL, 85%	No effect

