



# Tru-Bond™ PB Gel

## UV/Visible Light Cure Adhesive

Technical Data Sheet

Rev04, Oct 2014

## Plastic Bonder (PB)

### PRODUCT DESCRIPTION

The Tru-Bond™ Plastic Bonding (PB) Series of products provide UV/Visible light cured bonds to a wide range of plastics including ABS, polycarbonate, PET, PETG, flexible vinyl, urethanes and acrylics. The adhesive creates a flexible resilient polymer with outstanding impact resistance and flex. These products can also cure through most translucent substrates and UV blocked plastics.

### PRODUCT CHARACTERISTICS

Chemical Class	Urethane Acrylate
Appearance(uncured)	Amber Liquid
Components	Single-Requires no Mixing
Viscosity	High

### TYPICAL PROPERTIES OF UNCURED MATERIALS

Specific gravity@25 °C	1.03
Viscosity@25 °C	Gel
Non-Volatile Materials, %	>99
VOC, %	<1
Flashpoint, °F(°C)	>171(77)
Shelf life, months	24
Solubility	ketones, oxygenated solvents

### TYPICAL PROPERTIES OF CURED MATERIALS

Color	Clear
Refractive Index, ASTM D542	1.50
Optical Clarity, %	>98
Tensile strength, ASTM D882, psi(MPa)	577(4.0)
Elongation, ASTM D882, %	359
Modulus of Elasticity, ASTM D882, psi(MPa)	154(1.0)
Volume Shrinkage, %	8.74
Lineal Shrinkage, %	2.1
Water absorption, ASTM D570 (24 hrs.), %	5.1
Boiling Water, ASTM D570 (2 hrs.), %	3.6
Shore hardness	37D
Temperature range, °F(°C)	-65(-54) to 300(149)

### ADHESIVE LAP SHEAR

	<u>ps i</u>	<u>M Pa</u>
Acrylic	940	6.5
PETG	572	3.9
Polycarbonate	1893	13.0

### FIXTURE TIME AND TACK-FREE TIME

Light Source	Irradiance (mW/cm <sup>2</sup> )	Fixture Time (Sec.)	Tack free Time (Sec.)
CT100	20	< 5	N/A
Fusion ® D bulb	1,000	< 1	< 4
Uvitron PortaRay 400R	250	< 2	N/A

### DEPTH OF CURE:

Light Source	Irradiance (mW/cm <sup>2</sup> )	Exposure Time 30 Sec. Inch(mm)
400 W Metal Halide Bulb	20	0.118 in(3mm)

### PROCESSING

ITW products are easily applied by syringe dispense or specialty valve spray units. The materials cure extremely fast in bondlines, e.g. where the surfaces are not exposed to air, with UV or Visible radiation. Exposure doses range from .5 - 2 J/cm<sup>2</sup> depending on the intensity of the lamps and configuration of the assembly.

### PRECAUTIONS

Please refer to the appropriate material safety data sheet (MSDS) prior to using this product.





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### STORAGE

Store the unopened product in a cool, dry, well ventilated location away from sources of heat. Optimal storage temperatures should range between **10 °C (50 °F) and 32 °C (90 °F)**. **Do not expose the product to light.** It may polymerize upon prolonged exposure to ambient or artificial light. Product removed from the containers during use should not be returned to original containers in order to avoid potential contamination.

### CONVERSIONS

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$   
 $\text{kV/mm} \times 25.4 = \text{V/mil}$   
 $\text{mm} / 25.4 = \text{inches}$   
 $\mu\text{m} / 25.4 = \text{mil}$   
 $\text{N} \times 0.225 = \text{lb}$   
 $\text{N/mm} \times 5.71 = \text{lb/in}$   
 $\text{N/mm}^2 \times 145 = \text{psi}$   
 $\text{MPa} \times 145 = \text{psi}$   
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$   
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$   
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$   
 $\text{mPa}\cdot\text{s} = \text{cP}$

### WARRANTY

ITW will replace any material found to be defective. Because the storage, handling and application of this material are beyond our control, we can accept no liability for the results obtained.

### NOTE

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