Tru-Bond™ PSA 4500

Pressure Sensitive Adhesive, UV/Visible Light Cure Adhesive

PRODUCT DESCRIPTION

Tru-Bond™ PSA 4500 is a one-part, solventless PSA (pressure sensitive adhesives) that cures to a tacky adhesive when exposed to UV/Visible light. This adhesive can be cured directly through clear or translucent surfaces or cured first prior to assembly. The curing first method allows for the joining of parts at some future point. This product can bond a wide range of substrates including PE, PP, PET, and most plastics, metals, glass, and ceramics. It can be sprayed, roll coated, bead or brush applied, screen printed or used in a flexographic printing process.

PRODUCT CHARACTERISTICS

Chemical Class	Acrylic
Appearance(uncured)	Clear liquid
Components	Single-requires no mixing
Viscosity	Low

TYPICAL PROPERTIES OF UNCURED MATERIALS

Specific gravity@23 °C	1.07
Viscosity@23 °C, Brookfield RV	
Spindle 3, 6 rpm, cP	4,500
Flashpoint, °F(°C)	>212(100)
Non-Volatile Materials, %	>99
VOC, %	<1
Shelf life, mos	24
Solubility	ketones, oxygenated solvents

TYPICAL PROPERTIES OF CURED MATERIALS

Color.	Optically Clear
Refractive Index, ASTM D542	1.50
Optical Clarity, %	>98
Water absorption, ASTM D570 (24 hrs.), %	0.4
Boiling Water, ASTM D570 (2 hrs.), %	3.4
Shore hardness	20 A
SAFT(Shear Adhesive Failure Temperature), °F(°C)	260(127)

ADHESION PERFORMANCE

Peel Force to Various Substrates. PSTM1 Test., 3-mil (75µm) adhesive on PET film, Cured at 1.2 J/cm^2 with Fusion System D bulb. Assembled and then tested at 24 hours. 90° peel test.

	pli	N/mm
PVC	9	1.576
Acrylic	7	1.226
Polycarbonate	11.5	2.014
Glass	10	1.751
ABS	11	1.926
Copper	11	1.926
Polypropylene	1.5	0.263

UV CURE AND TIMELINE LATITUDE

Fusion Systems 300WPI lamp- "D"(doped) bulb at 4 inches. 3-mil (75µm) PET to untreated steel

Age of uncured adhesive	Age of cured Film	Nominal Thickness (mil)	(mm)	UV Dose (J/cm^2)	30 second peel (pli)	(N/mm)	12+ hour peel (pli)	(N/mm)
2 years	2 months	0.5	0.013	0.5	3	0.525	8	1.401
2 months	2 years	0.5	0.013	1.0	1.5	0.262	8	1.401
2 years	2 months	0.5	0.013	1.5	2	0.350	8	1.401
2 years	2 months	3.0	0.076	0.5	4	0.701	8	1.401
8 months	2 days	3.0	0.076	0.8	3	0.525	11	1.926
2 months	2 days	3.0	0.076	1.5	2	0.350	11	1.926

NOTE: All of these test pieces passed >10 days of creep resistance at ambient and 50 °C.

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^2 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.

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
(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = 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.

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