



BETAMATE™ 73100/73002, 73005, 73010, 73015 Structural Adhesive

Description

BETAMATE* 73100/73002, 73005, 73010, 73015 are systems used to make polyurethane structural adhesives. These systems were specifically designed to produce adhesives for bonding prepainted metal for elimination of mechanical fasteners.

BETAMATE 73100/73002, 73005, 73010, 73015 are also used to produce materials which provide adhesion to several thermoplastic materials. These components react quickly at room temperature to form crosslinked polymers that are stronger than many of the bonded substrates.

Typical Applications

BETAMATE 73100/73002, 73005, 73010, 73015 are used to produce adhesive for replacing welds, rivots, or mechanical fasteners on primed/prepainted metals, primed glass, and thermoplastic materials.

Application Technique

BETAMATE 73100/73002, 73005, 73010, 73015 can be gravity dispensed from bulk containers into standard meter mix equipment. The proper mix ratio is in turn dispensed manually or robotically through a static mixer equipped gun.

Safety Precautions

Keep away from heat, sparks and open flame. Use only with adequate ventilation. Avoid breathing vapors. If swallowed, call physician immediately. For eye contact, flush with water for 15 minutes and get medical attention. For skin contact, wash with soap and water. Refer to Material Safety Data Sheet for details.

Packaging

BETAMATE 73100/73002, 73005, 73010, 73015 is available in 5 gallon metal pails and 55 gallon metal drums. Two-component cartridges (150 ml tubes) are also available under product numbers 76102, 76105, 76110, 76115. An air operated dispensing gun is required and is available from CMCC Cox North America, Lansing, MI (517) 332-6830, model number PPA 300A.

Storage

BETAMATE 73100/73002, 73005, 73010, 73015 must be stored in air-tight dry containers at temperatures below 77°F (25°C) should be warmed to room temperature before using.

Storage Stability

Shelf life is dependent upon storage temperature of the material. Shelf stability is assured for 180 days from date of manufacturing when stored according to the above storage requirements.

Uncured Physical Properties

	73100	73002,73005, 73010, 73015
Composition	PMDI isocyanate Pre polymer	polyol curative
Appearance	dark grey	light tan
Solids Content, %	100	100
Flash Point, °F (°C)	>300 (150)	>300 (150)
Weight per Volume, lbs/gal (g/cc)	10.98 (1.32)	10.55 (1.27)
Viscosity; cps @ 77°F (25°C) Brookfield; HAT Spindle #5 @ 20 RPM	10 - 30 Kcps	10 - 30 Kcps

Mix Ratio 1:1 by volume and weight

	Mixed Bead			
Curative	73002	73005	73010	73015
Gel Time, minutes	2	5	10	15
Open Time, minutes	1.5 - 3	4 - 6	8 - 12	13 - 17
Trixtropy	non-sag	non-sag	non-sag	non-sag
Room Temp Cure	24 hours	24 hours	36 hours	36 hours

Cured Physical Properties

Accelerate Cure	10 minutes @ 200°F (93°C)
Hardness, Shore D	62
Young's Modulus, psi (MPa)	14,000 (96.5)
Elongation, %	80
Tear Resistance, lbs/in (N/m)	335 (58,625)

Nominal Performance Properties

Prepainted Steel (Room Temperature Cure)	
Test Coupon Thickness	0.019" (0.48mm)
Bondline Thickness	10 mil (0.254mm)
Overlap	½" (12.7mm)
Ultimate Lap Shear	
Strength @ RT	1900 psi (13.1 Mpa)
Lap Shear @ 160°F (71°C)	700 psi (4.8 Mpa)
Peel Strength @ RT	50 pli (8750 N/m)
Thermoplastic (Room Temperature Cure)	
Test Coupon Thickness	0.125" (3.175mm)
Bondline Thickness	0.030" (0.762mm)
Overlap	1"(25.4mm)

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Substrate	Lap Shear @ 74°F (23°C)	Side Impact @ -22°F (-30°C)	Lap Shear @160°F(71°C)
Dow Isoplast 202-TPU	1500 psi (10.34 MPa) SB	20 in•lbs (2.26 N•m) SB	400 psi (2.76) MPa
GE Lexan LS2-111-PC	1400 psi (9.65 MPa)	23 in•lbs (2.60 N•m) SB	300 psi (2.07 MPa)
GE Xenoy 1102 PBT/PC	1300 psi (8.96 MPa)	31 in•lbs (3.50 N•m)	300 psi (2.07 MPa)

SB = SUBSTRATE BREAK
TPU = THERMOPLASTIC POLYURETHANE
PC = POLYCARBONATE
PBT/PC = POLYBUTYLENE TEREPHTHALATE/
POLYCARBONATE BLEND

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