



TDS

MXCUR[®] 321

PRODUCT SPECIFICATION

MXCUR[®]321

Description:

MXCUR[®] 321 is a medium viscosity, fast curing, single component acrylated urethane adhesive.

MXCUR[®] 321 is specifically formulated for bonding rigid or flexible PVC to polycarbonate, while not inducing stress cracking. **MXCUR[®] 321** also provides excellent adhesion to a wide variety of other substrates including glass, many plastics and most metals. **MXCUR[®] 321** cures rapidly when exposed to ultra violet radiation specifically in the UVA/visible light region.

Typical Properties of Cured/Uncured Material:

Uncured State Physical Properties		Properties of Cured Materials	
Base	Acrylic	Physical Properties	
Colour	Transparent to slightly hazy liquid	Shore Hardness, ISO 868, Durometer D	55
Chemical Form	Acrylated Urethane	Refraction Index	1.5
Cure	Ultraviolet (UV) / Visible light	Water absorption, ISO 62, %: 2 hours boiling in water	2.61
Cure Benefit	Production – High Speed Curing	Elongation, at break, ISO 527, %	265
Components	Single requires no mixing	Tensile Modulus, ISO 527	N/mm ² (psi) 297 (43,000)
Viscosity	Medium Thixotropic	Tensile Strength, at break, ISO 527	N/mm ² (psi) 18 (2,600)
Application	Bonding	Electrical Properties	
Flexibility	Enhanced Shock Resistance	Surface Resistivity, IEC 60093, Ω	9.0 x 10 ¹⁴
Specific Gravity @ 25°C	1.13	Volume Resistivity, IEC 60093, Ω·cm	8.7 x 10 ¹⁴
Viscosity @ 20°C	2500 – 5000 mPas	Dielectric Breakdown Strength, IEC 60250, KV/mm	25
Flash Point	See MSDS	Dielectric Constant / Dissipation Factor, IEC 60250	
Refractive Index	1.48	100-Hz	5.39 / 0.05
		1-kHz	5.23 / 0.02
		1-MHz	4.86 / 0.04

UV Intensity

MXCUR[®] 321 Can be cured by exposure to visible light of sufficient intensity and/or UV. To obtain full cure on surfaces Exposed to air, radiation @ 220 to 260nm is also required.

Fixture Time

Fixture Time is defined as the time to develop shear strength of 0.1 N/mm² UV fixture time, ISO 4587, Glass Microscope slides seconds:

- 6 mW/cm² @ 365nm ≤20
UV fixture time ISO 4587, Polycarbonate seconds:
- 30 mW/cm² @ 365nm 10 to 15

Stress Cracking

Liquid adhesive is applied to a medical grade polycarbonate bar 64mm x 13mm x 3mm which had been flexed to induce a known stress level. Stress Cracking, ASTM D 3929, Minutes:

- 7 N/mm² stress on bar >15

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Performance of Cured Material

Cured @ 30 mW/cm² @ 365nm for 80 seconds using a metal halide light source Lap Shear Strength, ISO 4587
Polycarbonate: 0.5mm gap – **N/mm² 11.7 (psi) (1,700)** *substrate failure

Heat Aging

Aged at temperature indicated and tested @ 22°C Lap shear strength, ISO 4587, % of initial strength:
Polycarbonate:

Environment	Typical Value
Aged @ 71°C for 170 hours	*100
Aged @ 71°C for 340 hours	*100
Aged @ 93°C for 170 hours	*100
Aged @ 93°C for 340 hours	*100
*Substrate Failure	

Environmental Resistance

Cured @ 100 mW/cm² @ 365 nm for 10 seconds plus 1 week @ 22°C Tensile Strength, ISO 6899:

Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22°C

Environment	°C	% of initial strength		
		2 hrs	24 hrs	170 hrs
Boiling Water	100	75	-	-
Water immersion	49	-	-	60
IPA immersion	21	-	95	0
Heat/humidity	38	-	-	80

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CartellUK

adhesive experts

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General Information:

This product is not recommended for use in pure oxygen and/or oxygen rich systems and not be used with chlorine or Other strong oxidising materials. For information on the safe handling of this product, consult the **Material Safety Data Sheet, (MSDS)**. Where washing systems are used to clean the surfaces before bonding, it is important to check the Compatibility of the washing solutions can affect the cure and performance of the adhesive.

Handling & Storage

Storage: Keep products in the unopened container in a cool dry location. The product is best when stored at 8 to 21°C. temperatures less than 2°C can adversely affect product properties. Do not freeze. Keep container tightly closed until ready for use. For long term storage keep in refrigeration at 5°C unless otherwise labelled.

Handling: Material removed from containers may be contaminated during use. Do not pour back any product to the original Container. Misuse of product will void all warranties.

Precaution

1. Use with proper ventilation. Avoid contact with skin and eyes.
2. If contact with skin occurs, rinse with warm water or dissolve with appropriate debonder. Do not try to remove forcibly.
3. If adhesive gets into your eye, keep eye open and rinse thoroughly. Seek medical attention immediately.
4. Keep well out of reach of children.
5. Keep adhesive in a cool dry place 8°C to 21°C.

Disclaimer:

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