

KRYLEX®

Adhesives and sealants

KU 503

UV CURING ADHESIVE

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Issue:	2
Amendment:	a
Date:	15.10.2017
Page	1 of 2

PRODUCT DESCRIPTION

KRYLEX® KU503 is a single component, high viscosity UV curing adhesive formulated for bonding glass to glass and glass to metal. It cures rapidly to give a clear bond when exposed to UV-light (@365nm - see curing mechanism)

TYPICAL APPLICATIONS

KRYLEX® KU 503 is suited to applications requiring a tough cured polymer and rapid bonding. KU 503 gives medium-high strength bonding of glass and glass to metal. Typical uses include glass ornaments, jewellery assembly and bonding glass furniture and displays.

PROPERTIES OF MATERIAL

	UNIT	VALUE
Chemical type		Urethane acrylate ester
Appearance		Clear
Specific Gravity		1.09
Viscosity ¹	(Range) cPs	5,500 - 7,500
	Typical Value cPs	6,500
Tensile Strength ²	(Range) N/mm ²	6 - 15
	Typical Value N/mm ²	10
Fixture Time ³	Secs.	<3
Depth of cure ⁴	mm	3
Refractive index		1.4620 - 1.4720
Hardness	Shore D	71 - 77
Flash Point	°C	>100
Shelf Life @ 20°C	Months	12
Temperature Range		
	Continuous °C	-50 to +120
	Intermittent °C	-50 to +135

¹ Brookfield RVT, Spindle 3, 2.5rpm

² Grit blasted mild steel to glass, ASTM D2095-69

³ Glass slide fixture 20mW/cm² @365nm

⁴ Cured for 30secs @ 10mW/cm² @365nm

TYPICAL CURING PERFORMANCE

Glass Slide Fixture Time in seconds, using Hg vapour lamp

10mW/cm² <10

30mW/cm² <3

Surface cure time (to achieve dry to touch @ 250nm):

10mW/cm² No Data

30mW/cm² <30

CURE SPEED VS. BOND GAP

KRYLEX® KU503 is designed for bonding closely fitting glass and metal parts. KU503 can be used to a maximum depth of ~3mm.

KRYLEX® KU 503 can be cured using sunlight. However, for a controlled, repeatable cure, UV lamps should be used.

The rate of cure, depth of cure and surface tack of the cured adhesive will depend on the intensity of the UV light, exposure time, spectral output of the UV light source and light transmittance of the substrates to be bonded.

KRYLEX® UV adhesives can achieve depths of cure up to 6mm with high intensity lamps and long cure times.

To achieve a fast, controlled, reproducible cure performance, the use of high quality UV lamps @ 365nm or above is recommended.

CHEMICAL / SOLVENT RESISTANCE

KRYLEX® UV-curing adhesives exhibit excellent chemical resistance to most oils and solvents including alcohols, ethanol, methylated spirit and water.

KRYLEX® UV-curing adhesives are not recommended for use in pure oxygen or chlorine lines.

TYPICAL ENVIRONMENTAL RESISTANCE

HOT STRENGTH

KRYLEX® KU 503 is suitable for use at temperatures up to 130°C. At 130°C the bond strength will be ~20% of the strength at 21°C.

HEAT AGEING

KRYLEX® KU 503 exhibits excellent resistance to heat ageing. Typically, exposure to heat for a prolonged period, results in fully curing any uncured resin that may remain. This has the effect of increasing the bond strength when subsequently tested at 21°C.

DIRECTIONS FOR USE

KRYLEX® UV-curing adhesives are very sensitive to UV-light. As such, measures must be taken to protect the adhesive from exposure to UV-light from the lamp, sunlight and artificial lighting to prevent unwanted curing. The adhesives should be applied to clean, dry parts.

Once the adhesive is applied, the parts can be positioned correctly and then exposed to UV-light to initiate curing.

Ensure parts are clean, dry and free from oil and grease.

Apply adhesive to one surface, bring parts together and expose to UV-light. Ensure the whole bond area is exposed.

Excess adhesive can be wiped away with **KRYLEX®** KP 0637 Cleanser/Degreaser or alcohol.

Product can be hand applied from the bottle.

Dispensing systems are also available for high volume assembly applications. Feed lines for the dispensing system must have black, UV-opaque tubing to avoid adhesive curing in the lines.

Please contact your **KRYLEX®** representative for further advice on dispensing solutions.

STORAGE

Store in a cool area out of direct sunlight. Refrigeration to 5°C gives optimum storage stability.



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Page	2 of 2

CURING MECHANISM

KRYLEX® KU 503 is formulated to cure when exposed to UV radiation of 365nm and above.

To obtain a dry to touch finish, the adhesive should be cured in the absence of oxygen or with UV radiation of 250nm.

UV-curing adhesives only cure when exposed to UV-light of the correct wavelength and sufficient intensity.

Cure speed may vary as the UV-lamp bulb ages.

GENERAL INFORMATION

For safe handling of this product consult the Material Safety Data Sheet.

PRESENTATION

Bottles (UV opaque):..... 50ml and 250ml.
Available in bulk for use with dispensing systems.

DATA RANGES

The data contained in this data sheet may be reported as typical value and/or range. Values are based on actual test data and are verified on a regular basis.

DISCLAIMER

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TECHNICAL DATA