

TECHNICAL

## UC50

### PRODUCT DESCRIPTION

Chemence UC-50 is a single component, high viscosity 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

Chemence UC-50 is suited to applications requiring a tough cured polymer and rapid bonding. Chemence UC-50 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

	Value
Chemical Type	Urethane acrylate ester
Appearance	Clear
Specific Gravity	1.09
Viscosity <sup>1</sup> , cPs	5500-7500
Typical Value	6500
Fixture Time (secs) <sup>2</sup>	<3
Depth of Cure <sup>3</sup>	3
Tensile Strength <sup>4</sup> , N/mm <sup>2</sup>	Range 6-15 Typical 10
Refractive Index	1.4620-1.4720
Hardness, Shore D	71-77
Flash Point (°C)	> 100
Shelf Life @ 20°C (Months)	12
Temp Range °C	Continuous -50 to +130 Intermittent

- <sup>1</sup> Brookfield RVT, Spindle 3, 2.5rpm
- <sup>2</sup> Glass slide fixture 20mW/cm<sup>2</sup> @365nm
- <sup>3</sup> Cured for 30secs @ 10mW/cm<sup>2</sup> @365nm
- <sup>4</sup> Grit blasted mild steel to glass, ASTM D2095-69

### CURING PERFORMANCE

Glass Slide Fixture Time in seconds, using Hg vapour lamp:

10mW/cm <sup>2</sup> .....	<10
20mW/cm <sup>2</sup> .....	<3

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

10mW/cm <sup>2</sup> .....	No Data
30mW/cm <sup>2</sup> .....	<30

### Cure Speed vs. Bond Gap

Chemence UC-50 is designed for bonding closely fitting glass and metal parts. UC-50 can be used to a maximum depth of ~3mm.

### Cure Speed vs. Intensity

Chemence UC-50 can be cured using sunlight. However, for a controlled, repeatable cure, UV lamps should be used.

### TYPICAL ENVIRONMENTAL RESISTANCE

#### Hot strength

Chemence UC-50 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

Chemence UC-50 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.

#### Chemical / Solvent Resistance

Chemence UV-curing adhesives exhibit excellent chemical resistance to most oils and solvents including alcohols, methylated spirit water. Chemence UV-curing adhesives are not recommended for use in pure oxygen or chlorine lines.

### DIRECTIONS FOR USE

Chemence 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 the bond area to UV-light. Ensure that all of the bond is exposed.

Excess adhesive can be wiped away with Chemence LA-70 Safety Clean 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 Chemence representative for further advice on dispensing solutions.

### CURING MECHANISM

Chemence UC-50 is formulated to cure when exposed to UV radiation of 365nm. To obtain a dry to touch finish, the adhesive should be cured in the absence of oxygen or with UV radiation of 250nm.

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### GENERAL INFORMATION

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

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.

### STORAGE

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

### PRESENTATION

Bottles (black): .....50g, 250g and 1kg.  
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

### NOTES

The information contained herein is produced in good faith and is believed to be reliable but is for guidance only. Chemence Ltd. and its agents cannot assume liability or responsibility for results obtained in the use of its product by persons whose methods are outside or beyond our control. It is the user's responsibility to determine the suitability of any of the products and methods of use or preparation prior to use mentioned in our literature and furthermore the user's responsibility to observe and adapt such precautions as may be advisable for the protection of personnel and property in the handling and use of any of our products.