

UC16

PRODUCT DESCRIPTION

Chemence UC-16 is a single component, low viscosity adhesive that cures to give a clear, flexible bond when exposed to UV-light (365nm or above).

TYPICAL APPLICATIONS

Chemence UC-16 has been formulated to give a very fast cure for tacking applications. It is designed to give low strength bonds to provide temporary bonding, e.g. to hold components in place during an assembly process. UC-16 will bond glass, metals, ceramics, etc. The low viscosity of UC-16 means it can wick into some pre-assembled parts. Parts bonded with UC-16 can be de-bonded using high humidity or water immersion.

PROPERTIES OF MATERIAL

	Value
Chemical type	Acrylate ester
Appearance	Clear/pale yellow
Specific Gravity	1.19
Viscosity ¹ , cPs	50-100
Typical Value	75
Fixture Time (secs) ²	<2
Depth of cure ³	2
Tensile shear Strength ⁴ N/mm ²	4 -7
Refractive index	1.4605
Hardness, Shore D	91
Flash Point (°C)	> 100
Shelf Life @ 20°C (Months)	12
Temp Range °C	
	Continuous -50 to +120
	Intermittent -50 to +150

- ¹ Brookfield LVF, Spindle 2, 30rpm
- ² Glass slide fixture 10mW/cm² @365nm
- ³ Cured for 30secs @ 10mW/cm² @365nm
- ⁴ ASTM 2095(modified), glass to steel, 180 secs cure @20mW/cm²

CURING PERFORMANCE

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

10mW/cm ²	<2
30mW/cm ²	<1

Surface cure time (UC-16 does not cure dry to touch):

10mW/cm ²	Not recommended
30mW/cm ²	15

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.

Depths of cure up to 4mm can be achieved 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.

TYPICAL ENVIRONMENTAL RESISTANCE

Hot strength

Chemence UC-16 is not suitable for use at very high temperatures. At 100°C the bond strength will be ~25% of the strength at 21°C.

Heat ageing

Chemence UC-16 exhibits reasonable 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 UC-16 adhesive exhibits poor chemical resistance to most solvents including water and alcohols. 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 to UV-light. Alternatively, parts can be assembled and the adhesive applied and allowed to wick around and into the joint before curing.

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-16 is formulated to cure when exposed to UV radiation of 365nm and above.

TECHNICAL

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.