

**LOXEAL UV30-42**

**Description**

Loxéal UV30-42 is a thixotropic and extremely fast UV curing adhesive developed for bonding glass and metal. It is also suitable for bonding rigid plastic including PC, PMMA, PETG and ABS. Thanks to its speeds, it provides fast and tack-free bonding even on colored substrates that filter UV radiation. It provides an excellent resistance to heat and moisture. Loxéal UV30-42 only cures when exposed to UV and visible light (470nm).

**Typical physical properties**

Composition	Urethane acrylate
Color (liquid):	Pale yellow
Viscosity (+25°C - mPa s):	
2 rpm:	45000
20 rpm:	17000
Specific weight (g/ml):	1
Shelf life:	12 months at +5°C/+25°C in original unopened packaging

**Typical Polymerization features**

To obtain the best features, clean and dry parts to bond. The polymerization depends on the UV lamp radiation, the distance from the lamp, the thickness of the adhesive applied, the light permeability of the pieces to bond, and the geometry of the joint.

For best results, we recommend using UV lights able to produce UV radiation with wavelengths between 365 nm and 420 nm and minimum intensity of 50mW/cm<sup>2</sup>.

This product is light sensitive; exposure to daylight, UV light and artificial lighting should be kept to a minimum during handling.

Fixture time** (seconds)	
UV-LED 400 nm 150 mW/cm <sup>2</sup>	≤1s
UV-LED 400 nm 1 mW/cm <sup>2</sup>	≤6s
UV-LED 365 nm 150 mW/cm <sup>2</sup>	≤1s
UV-LED 365 nm 1 mW/cm <sup>2</sup>	≤4s
SOLAR LAMP 300W 470nm	≤1s
Sunlight 470nm	≤1s

\*\*measured for an adhesive layer thickness of 0.1 mm.

**Typical Properties of the cured adhesive**

Aspect	Transparent
Tensile strength, ASTM D638 (MPa):	10
Elongation at break, ASTM D638 (%):	200
Hardness (Shore D):	60
Water absorption, 24h @25°C, ASTM D570 (%):	2
Glass transition temperature [DMA, Tan delta, °C]:	62
Temperature range:	-55°C/+120°C

Shear strength	
Single-lap shear, ISO 4587 (N/mm <sup>2</sup> ):	
PC/PC:	11 SF
PMMA/PMMA:	6 SF
PET/PET:	4 CF
PETG/PETG:	10 SF

Block Shear, ASTM D 4501 (MPa):

PMMA/GLASS	5 AF
PC/GLASS	8 SF
ABS/GLASS	9 SF
Mild Steel/GLASS	11 AF
Aluminum/GLASS	10 AF

CF=Cohesive Failure  
SF=Substrate Failure  
AF=Adhesive Failure

**Directions for use**

- Surface preparation

For best results the parts to be bonded should be degreased and cleaned with a suitable solvent (i.e. Loxeal Cleaner 10 or Acetone or Isopropyl Alcohol). Specific surface treatments suitable for the substrate ensure higher performances and durability of the bonding.

- Set up of the UV-curing process

Assess the transparency of the material through which the ultraviolet radiation has to pass by using a suitable radiometer.

It is recommended to use UV light sources that ensure the adhesive receives a minimum radiation intensity of 5mW/cm<sup>2</sup>, emitted at wavelengths between 365nm and/or 420nm.

In the case of LED lamps, the peak of radiation should be near 365nm or 400nm.

Record the radiation intensity that will reach the adhesive and set the distance between the lamp and the components to be assembled to ensure repeatability and control of the bonding process.

The UV curing may lead to some heating: cool the bonding area to reduce the heating of the components, especially if thermoplastic materials are involved.

- Assembly

This product is light sensitive; exposure to daylight, UV light and artificial lighting should be kept to a minimum during handling.

Apply the adhesive on one surface and couple the parts without applying additional pressure to avoid the onset of internal stresses after the pressure release.

Proceed with irradiation for the time required to fix the components at the identified radiation intensity.

Continue with light exposure for a time at least 5-6 times longer than the fixture time to identify the time required for the complete polymerization of the adhesive (it is recommended to consider an additional safety coefficient).

The full cure of the adhesive is reached when further exposure to the radiation does not improve the adhesive performances.

Allow the components to cool before subjecting the bonding to any loads and before testing.

- Cleaning

The cleaning of the excess adhesive around the gluing area can be carried out with mechanical means after the fixture of the parts or by suitable organic solvents.

The cured adhesive can only be removed mechanically.

**Storage**

We recommend to store product in a cool and dry place at temperature non-exceeding +25°C. To avoid contaminations do not refill containers with used product. For more information on applications, storage and handling contact Loxeal Technical Service

**Safety handling and disposal**

Consult the Safety Data Sheet before use

**Note**

The data contained herein, obtained in Loxeal laboratories, are given for information only; if specifics are required, please contact the Loxeal Technical Department. Loxeal ensures the abiding quality of supplied products according to its specifics. Loxeal cannot assume responsibility for the results obtained by others whose methods are not under Loxeal control. It is the user's responsibility to determine the suitability for the user's purpose of any product mentioned herein. Loxeal disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from the sale or use of Loxeal products. Loxeal specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.

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STUV3042e\_pre/2 03/25 Pag. 2/2