QUALITY & INNOVATION

LOXEAL®
ENGINEERING ADHESIVES

PUT IT ON & GO TO SLEEP

MEDICAL GRADE UV CURING ADHESIVE

LOXEAL 3355
Technical Data

Overview:

Loxeal® UV 3355 is a high viscosity UV curable adhesive forms in place gasket and seals by irradiation with low-intensity UV lamps. It provides a flexible and soft film. Forms gaskets with high resistance to compression, fixes and seals pre-assembled components on their outside surface, encapsulates small parts. It is well suitable for creating seals and bonding of surfaces made of different materials and on surfaces with critical coefficients of thermal expansion too.

Physical Properties

Composition:	Acrylic ester
Colour :	Clear
Viscosity at + 25°C (mPa s):	80,000 – 120,000 thixotropic
Specific weight (g/ml):	1.1
UV curing time (365 nm) (UV lamp of 3.5 mW/cm^2):	4 - 5 seconds

Shelf Life: 12 months at 25°C in original unopened packaging

Curing Properties

To obtain the best features, clean and dry parts to bond. The polymerisation UV is belonging to the intensity of the UV lamp, to the distance from the UV light source, to the bondline gap and to the light transmittance of the substrate the light shall pass through. We recommend high intensity UV light sources with minimum radiation between 365 nm and 420 nm at 100mW/cm^2. Curing time may vary according to adhesive gap.

Properties of the Cured Adhesive (Typical)

Tensile at break (DIN 53504):	8 -10 N/mm^2
Elongation at break (DIN 53504):	130%
Temperature range:	-55°C/+150°C
Refractive Index :	1.484
Light transmittance:	>98%
Hardness(Shore D):	50 - 70

Directions for use

1. Surface preparation (cleaning and surface humidity stabilization)

For best results, bond surfaces should be clean and grease free. When bonding flat glasses and big-seized objects, clean and degrease the surfaces with Acetone, wiping with clean tissues. Allow bonding parts to dry with hairdryer and hot air (+70°C /+100°C) for few seconds. Use an ultrasonic cleaning machine for small parts cleaning.

2. Lamps recommendations:

Use high pressure, mercury vapor, iron iodide or LED lamps with appropriate UV waves, usually at 365 nm for glass bonding and at 400-420 nm for plastic bonding. Check the emission with a UV Radiometer (mW/cm²) at the same distance as the bonding will occur.

After mercury vapor and iron iodide lamps switching on, wait for the emission power to stabilize before bonding parts.

3. Bonding methods

A. Check glass or crystal's transparency to UVA rays (centred at 365 nm) using an UV Radiometer. Coloured glasses may prevent or stop the adhesive's cure.

B. Float glass bonding: use the lamp to check surface "tin side". Use the opposite surface "atmosphere side" to achieve good bonding results.

C. Adhesive needs to be applied directly from unopened packaging in order to avoid contamination due to different packaging or refilling and never exposed to environment.

D. Minimize joint's stress cracking, avoiding any pressure (parts should be floating).

4. Parts fixture

a. Use an emission power superior than 5 mW/cm² (appositely moving the light source to a closer or farer distance) during fixture

b. Parts fixture (10 – 30 seconds): apply the adhesive from the centre to the edge of the bonding area, not the opposite

c. To remove excess adhesive providing quality aesthetics, use a cutter or other mechanical tools. Notice that even after irradiation the part of the adhesive exposed to air remains oily on the surface (oxygen inhibition). The oily effect should disappear (seconds to days), but it can be eventually removed with Acetone.

d. Expose for about 2-4 minutes to UV light, with a power emission stronger than the one used during fixture for bonding finishing.

5. Bonding stability When internal stresses are assumed and/or in case of irregular thickness of the adhesive film, gentle heating of the parts at a temperature of +50°C/+60°C should be considered to stabilize the bonding.

Warnings

This adhesive is not approved for usage with neither pure nor with gaseous oxygen. The liquid product may damage paints and elastomers. If the product gets in contact, even accidentally, with some thermoplastics, stress cracking of the plastics could happen.

Storage:

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Store the material in a cool and dry place at temperature not 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 and Handling:

Consult the Safety Data Sheet before use

Note:

The data contained herein, obtain in Loxeal laboratories, are given for information only; if specifics are required, please contact Loxeal technical department. Loxeal ensures abiding quality of supplied products according to its own specifics. Loxeal cannot assume responsibility for the results obtained by others which methods are not under Loxeal control. It is user's responsibility to determine suitability for 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.