

# EBECRYL® LED 02

Mercapto Modified Resin

August 2018



## INTRODUCTION

EBECRYL LED 02, a mercapto modified polyester acrylate resin, can be added as a co-resin to UV curable formulations. EBECRYL LED 02 transforms formulations into UV LED, UVA, or low energy curable systems by providing better surface cure. In addition, this co-resin can also be used to obtain better surface cure in high energy cure formulations. EBECRYL LED 02 provides better surface cure by mitigating oxygen inhibition of the free radical process.

## SUGGESTED APPLICATIONS

EBECRYL LED 02 has been developed for UV LED applications, but is equally suitable for UVA and other low energy curing applications. It can also provide better surface cure in typical, high energy curing applications that use standard medium pressure mercury lamps.

## COMPATIBILITY

EBECRYL LED 02 is compatible with a broad range of selected resins of different chemical families, such as urethane acrylates, polyester acrylates, and epoxy acrylates. EBECRYL LED 02 is also compatible with acidic additives such as adhesion promoters.

However, EBECRYL LED 02 is not compatible with all resins, and this should be checked prior to use. Resins containing amines have a limited compatibility with EBECRYL LED 02.

Phosphine oxides such as TPO, and mono and bis acyl phosphine oxides, such as MAPO and BAPO are recommended photoinitiator types for UV LED and UVA curing.

## SPECIFICATIONS

	VALUE
Appearance	Clear liquid
Viscosity, 25°C, cP/mPa·s	90-150

## TYPICAL PROPERTIES

Color, Pt-Co scale <sup>(1)</sup>	<50
Density, g/ml at 25°C	1.14

## PERFORMANCE DATA

EBECRYL LED 02 is used as co-resin to increase the surface cure of formulations that are cured with UV LED, UVA or low energy lamps. A typical starting point formulation (C) is given below. Formulation A, which contains no materials to mitigate oxygen inhibition, remains tacky under all of the cure conditions. Formulation B contains EBECRYL 8807, which can provide better surface cure via its polyether structure. This is evident only when cured 120 seconds with UVA lamps. Formulation C contains EBECRYL LED 02 and EBECRYL 8807, and cures completely under all of the low energy cure conditions shown in the table.

	A	B	C
EBECRYL 1291 <sup>(2)</sup> (6f urethane acrylate)	10	10	10
EBECRYL 8807 <sup>(2)</sup> (2f urethane acrylate)		40	40
EBECRYL 271 <sup>(2)</sup> (2f urethane acrylate)	40		
EBECRYL 853 <sup>(2)</sup> (3f diluting acrylate)	50	50	25
EBECRYL LED 02			25
Esacure® TPO <sup>(3)</sup> (photoinitiator)	5	5	5
<b>CURE CONDITIONS</b>			
LED (395nm) @ 5m/min	>5 passes	>5 passes	1 pass
UVA 30"	NOK	NOK	OK
UVA 60"	NOK	NOK	OK
UVA 120"	NOK	OK	OK

Details of cure conditions:

	UVA	UVB	UVC	UVV
LED 5m/min	126 mJ/cm <sup>2</sup>	0	1 mJ/cm <sup>2</sup>	988 mJ/cm <sup>2</sup>
UVA 30"	394 mJ/cm <sup>2</sup>	0	0	0
UVA 60"	775 mJ/cm <sup>2</sup>	0	0	0
UVA 120"	1604 mJ/cm <sup>2</sup>	0	0	0

The reactivity can further be influenced by:

- ✓ Level of EBECRYL LED 02
- ✓ Type and functionality of the oligomer(s)
- ✓ Monomer dilution
- ✓ Coating thickness and viscosity
- ✓ UV LED or UVA dose and distance to substrate

(1) Also referred to as APHA color.

(2) Product of allnex

(3) Product of Lamberti

## PRECAUTIONS

Before using EBECRYL LED 02, see the Safety Data Sheet (SDS) for information on the identified hazards of the material and the recommended personal protective equipment and procedures.

## STORAGE AND HANDLING

Care should be taken not to expose the product to high temperature conditions, direct sunlight, ignition sources, oxidizing agents, alkalis or acids. This might cause uncontrollable polymerization of the product with the generation of heat. Storage and handling should be in stainless steel, amber glass, amber polyethylene or baked phenolic lined containers. Procedures that remove or displace oxygen from the material should be avoided. Do not store this material under an oxygen free atmosphere. Dry air is recommended to displace material removed from the container. Wash thoroughly after handling. Keep container tightly closed. Use with adequate ventilation.

See the SDS for the recommended storage temperature range for EBECRYL LED 02.

Please refer to the allnex Guide to Safety and Handling of Acrylate Oligomers and Monomers for additional information on the safe handling of acrylates.

[www.allnex.com](http://www.allnex.com)

Disclaimer: allnex Group companies ('allnex') decline any liability with respect to the use made by anyone of the information contained herein. The information contained herein represents allnex's best knowledge thereon without constituting any express or implied guarantee or warranty of any kind (including, but not limited to, regarding the accuracy, the completeness or relevance of the data set out herein). Nothing contained herein shall be construed as conferring any license or right under any patent or other intellectual property rights of allnex or of any third party. The information relating to the products is given for information purposes only. No guarantee or warranty is provided that the product and/or information is adapted for any specific use, performance or result and that product and/or information do not infringe any allnex and/or third party intellectual property rights. The user should perform his/her own tests to determine the suitability for a particular purpose. The final choice of use of a product and/or information as well as the investigation of any possible violation of intellectual property rights of allnex and/or third parties remains the sole responsibility of the user.

Notice: Trademarks indicated with ®, ™ or \* as well as the allnex name and logo are registered, unregistered or pending trademarks of Allnex IP s.à.r.l. or its directly or indirectly affiliated allnex Group companies.