

**DEGALAN®**

**DEGALAN®**  
FOR UV-CURING COATINGS



**RÖHM**

TRADITIONALLY **INNOVATIVE**



## ENHANCING THE PROPERTIES OF UV-CURING COATINGS WITH DEGALAN® RESINS

High-quality acrylic resins from Röhm GmbH offer a versatile and high-performance solution for modifying UV-curing coatings, enabling formulators to tailor properties such as adhesion, flexibility, hardness, and chemical resistance. Röhm polymers are particularly well-suited for UV-curing systems used in the coating of paper, wood, metal substrates and plastic films.

UV-curing coatings are valued for their rapid processing and environmental benefits. The formulation process begins with dissolving the acrylic polymer in reactive monomers. This solution is then homogenized with oligomers, photoinitiators, additives, and optionally pigments to create a stable, ready-to-use coating system.

Upon application, the liquid film cures within fractions of a second when exposed to short-wave ultraviolet

light. This photopolymerization process occurs without the release of volatile organic compounds (VOCs), making it a solvent-free and eco-friendly technology. The resulting film is typically more uniform and exhibits superior adhesion compared to conventional physical drying systems.

Acrylic resins play a critical role in optimizing the balance between reactivity and mechanical performance. Their rapid solubility and compatibility with a wide range of monomers and oligomers make them ideal for fine-tuning viscosity, flow behavior, and final film properties. Whether the goal is to improve scratch resistance, enhance gloss, or increase substrate versatility, acrylic resins from Röhm provide a robust platform for innovation in UV-curing technologies.

## ADVANTAGES OF INCORPORATING DEGALAN® RESINS INTO UV-CURING FORMULATIONS

- **Improved adhesion**, particularly on challenging substrates (plastics and metals), ensuring long-lasting durability and reducing the risk of delamination.
- **Improved chemical and mechanical resistance**, making coatings more resilient to moisture, abrasion and environmental exposure.
- **Gloss control**, allowing formulators to tailor aesthetic effects (matte, semi-matte finish).
- **Excellent compatibility** with a wide range of oligomers, monomers, and additives, supporting flexible formulation strategies.
- **Cost efficiency** through optimized formulation design.



## COMBINING DEGALAN® RESINS WITH MONOMERS

The following tables present the viscosity of suitable DEGALAN® grades combined with the most commonly used reactive monomers in UV-curing systems.

COMBINING DEGALAN® RESINS WITH MONOMERS				
DEGALAN® Types	Isobornyl acrylate (IBOA)	Trimethylolpropane triacrylate (TMPTA)	Tripropylene glycol diacrylate (TPGDA)	Hexanediol diacrylate (HDDA)
64/12 N	4500	not soluble	8200	1600
P 24 N	8600	not soluble	37500	4400
P 28 N	4600	not soluble	8800	1700
PM 381 N	3800	not soluble	6000	1400
PM 602	5700	not soluble	9500	2000
PQ 611 N	2100	not soluble	4600	950
LP 63/11	700	not soluble	950	300
LP 64/11	1500	24500	1900	500
LP 64/12	3600	75400	5500	1300
LP 65/11	1200	19200	1600	450
LP 67/11	not soluble	not soluble	7800	1700
MB 319	20600	105000	17200	750

\* Viscosity (mPas) of DEGALAN® types in monomers (30 wt.%).

## GUIDELINE FORMULATIONS EXAMPLES

To improve the adhesion of UV-curing inks on plastic substrates, add 10% to 40% of the following solution:

- 40 parts DEGALAN® LP 64/12
- 60 parts Tripropylene glycol diacrylate

Primer for BOPP foils:

- 20 to 40 parts DEGALAN® PQ 611 N
- 80 to 60 parts Hexanediol diacrylate
- 2 to 8 parts photoinitiator
- 0.6 parts defoamer

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