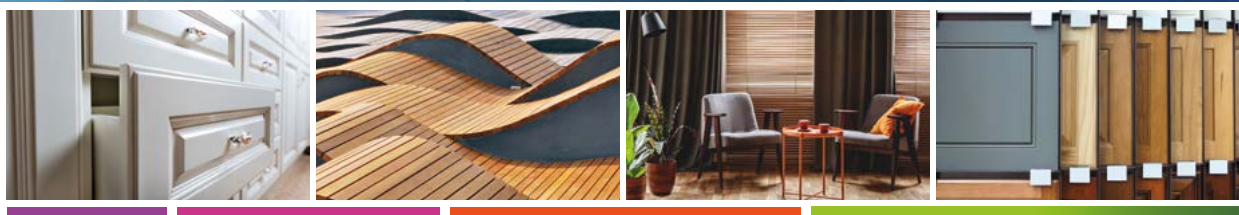


UV/EB CURABLE RESINS
INDUSTRIAL COATINGS



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The operating allnex group is legally owned by Allnex Holdings S.à r.l., a company based in Luxembourg, which also provides long term strategic decisions relating to its investment in allnex.

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Facts & Figures

- Global company with over €2.1 billion in sales
- Broad technology portfolio: liquid coating resins, energy curable resins, powder coating resins, crosslinkers and additives, composites and construction materials
- Approximately 4000 employees
- Customers in more than 100 countries
- 33 manufacturing facilities
- 23 research and technology centers
- 5 ventures
- Extensive range of solutions for key coating segments: automotive, industrial, packaging coating and inks, protective, industrial plastics and specialty architectural

With manufacturing, R&D and technical facilities located throughout Europe, North America, Asia Pacific and Latin America, allnex offers global and reliable supply of resins and additives combined with local, responsive customer support.

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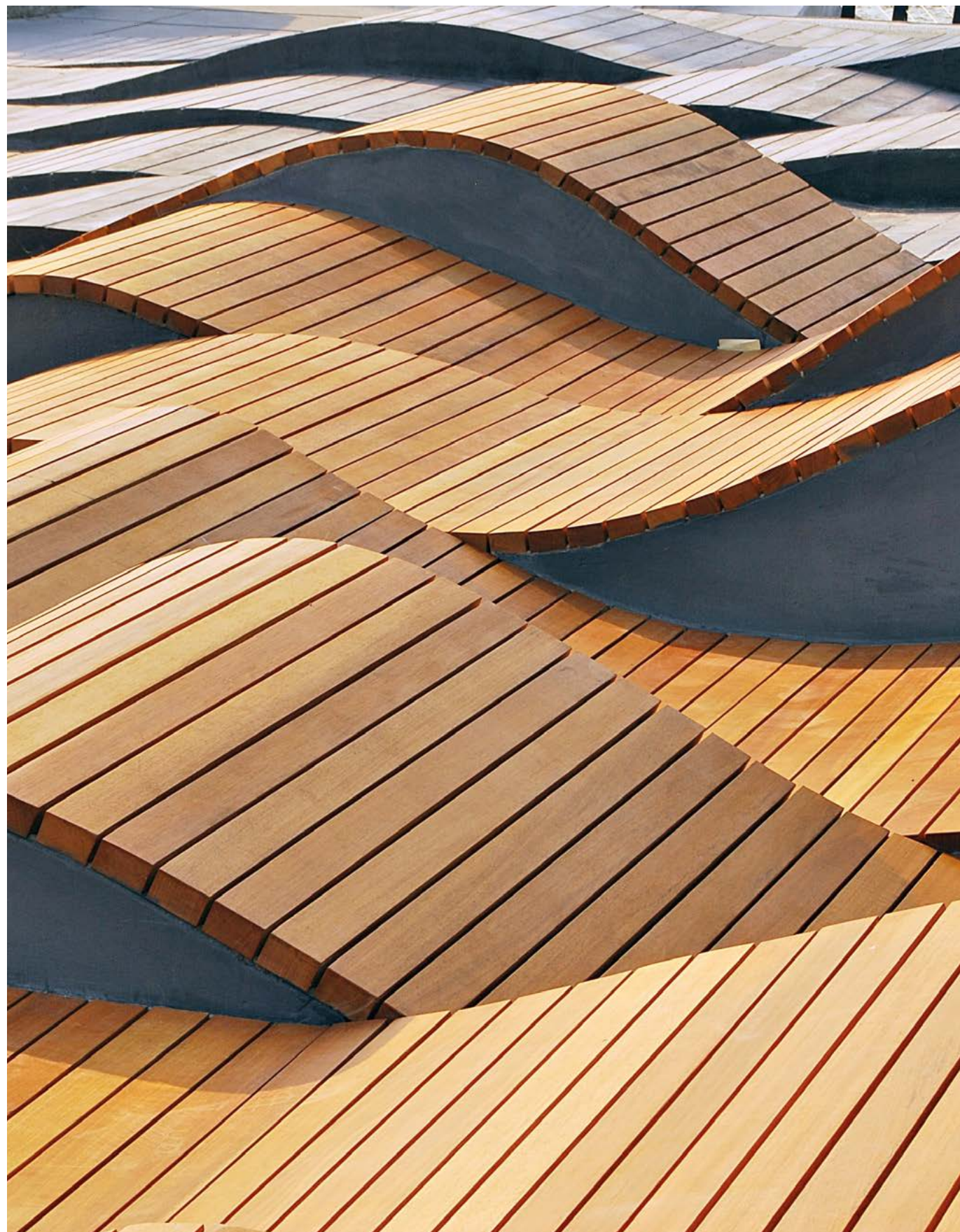
Introduction

UV/EB Curable Resins (Radcure)

Ultraviolet (UV) and electron beam (EB) energy-cured coatings have excellent appearance, durability, and little or no VOC emissions, while enabling increased productivity and lower overall costs per cured part. allnex is the pioneer in UV resin / Radcure technology and applications development. We are the world's leading producer of energy-curable resins for the industrial and plastic coatings as well as the packaging coatings and inks applications, driving market growth and end-user acceptance of this unique technology.

- Our customers have come to rely on our broad range of innovative EBECRYL® and UCECOAT® resins including:
- 100% solids UV curable resins and oligomers
 - Waterborne UV curable resins
 - UV curable resins derived from renewable raw materials
 - Low Extractables and Odor (LEO) resins specifically formulated for use in low odor, low migration inks and coatings applied to food and pharmaceutical packaging
 - A wide range of urethane acrylates, polyester acrylates, amino acrylates and epoxy acrylates
 - Specially-designed photo initiators and additives that enhance the performance of energy-cured coatings.





Product Families

Diluting acrylates

As RADCURE™ formulations are normally solvent-free, diluting acrylates can be added to reduce the viscosity for better processing and to improve crosslinking. Reactivity, mechanical and chemical resistance and shrinkage increase with increasing functionality of the diluting acrylate, while the flexibility and adhesion decrease.

Polyester acrylates

Polyester acrylates cover a wide range of viscosities (low to high) and cure speeds and show a moderate to high shrinkage.

Epoxy acrylates

Epoxy acrylates are typically characterized by very fast cure, good hardness and excellent chemical resistance. In general they tend to be low in flexibility, with little elongation but they provide high gloss to the coating. A few exceptions show a good compromise flexibility/reactivity.

Acrylic acrylates

Acrylic acrylates provide a good adhesion to various substrates with a moderate cure speed and moderate to good flexibility. They are characterized by a low shrinkage and can give coatings excellent weatherability.

RAYLOK® performance products

RAYLOK performance products is an original line of high performance systems specifically designed by allnex to achieve superior results for dedicated applications.

Radiation curable additives

allnex reactive additives were specifically developed for radiation curing applications to improve specific properties (adhesion, wetting, slip) while they become part of the network after curing.

Urethane acrylates

Urethane acrylates from allnex are the most versatile products able to provide a wide range of performance characteristics. Depending on the specific product chemistry, virtually any performance level can be achieved in terms of softness/hardness, flexibility, non-yellowing, cure speeds selecting products in a wide range of viscosities. Aliphatic urethane acrylates are, in comparison to aromatic urethane acrylates, known for their non-yellowing and outdoor performances.

Waterbased and water-compatible resins

Reasons for the success of UV waterborne radiation curing technology include outstanding performance of the coatings, very fast curing, low process costs per square metre of surface, and environmental compliance. The very low viscosity of the UCECOAT® range enables their application by different coating techniques (roller, spray, curtain and vacuum coating) and together with a low-solids content, allows a nice open-pore finish applied by spraying.

Dual Cure Resins

Dual cure resins offer unique properties as adhesion promotion on difficult substrates and curing in non-irradiated areas. allnex provides a full range of dual cure resins, including isocyanate bearing urethane acrylates as well as their hydroxy bearing combination partners.

Amine Modified Polyether Acrylates, Amine Synergists

Amine modified polyether acrylates are known for their low viscosity and good reactivity. Reactive amine synergists promote fast UV cure with less residual odour, particularly when combined with polymeric photoinitiators.

Performance Keys

	●	●●●●
Reactivity	Low	Very good
Hardness	Low	Very good
Flexibility	Low	Very good
Chemical resistance	Low	Very good
Adhesion	Low	Very good

Definitions

Acid value	Expressed in mg per KOH per g
Color	Maximum values in: <ul style="list-style-type: none">• Gardner scale when no units are specified – range from light yellow to red defined by the chromaticities of glass standards numbered from 1 for the lightest to 18 for the darkest• Pt/Co or APHA-Hazen (A) scale – defined by specified dilutions of a platinum-cobalt stock solution, ranging from 1 at the light end of the scale to 500 at the darkest• Iodine scale - defined by specified dilutions of an iodine solution, ranging from 1 for the lightest colour to 500 for the darkest
Density	Expressed in g/cm³
Dilution	Parts of diluent in 100 parts of product
Functionality	Theoretical value, expressed as number of double bonds per molecule
Film form. temp.	Expressed in °C
Molecular Weight (Mn)	Theoretical molecular weight
Solid content	Measured by gravimetry and expressed as the percentage of solid residue remaining after complete drying of the waterborne dispersion for 2 hours at 120°C
Particle size	Expressed in nm
pH	Measured using a conventional glass electrode equipment
Viscosity	Viscosity in milliPascal-seconds (mPa•s) at the specified temperature. Note: mPa•s = centiPoise (cP)








Abbreviations

EtAc	Ethyl acetate
BuAc	Butyl acetate
DPGDA	Dipropylene glycol diacrylate
HDDA	1,6-Hexanediol diacrylate
HEMA	Hydroxyethyl methacrylate
TMPTA	Trimethylolpropane triacrylate
TPGDA	Tripropylene glycol diacrylate
HPMA	Hydroxypropyl methacrylate
IBOA	Isobornyl acrylate
IBOMA	Isobornyl methacrylate
OTA	Acrylated glycerol derivative

Market segments

M	Metal coatings
P	Plastic coatings (different substrates)
R	Resilient Flooring Coatings
W	Wood coatings (furniture, parquet) & paper foils








Urethane acrylates

Products	Description	Dilution	Viscosity mPa·s, 25°C	Viscosity mPa·s, 60°C	Color	Density	Molecular Weight (Mn)	Functionality	Market Segment (W, P, M, R)	Key Features	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
Aromatic urethane acrylates															
EBECRYL®* 204	Aromatic urethane acrylate	25 HDDA	17000		2	1,12	2000	3	W	General purpose, good abrasion and scratch resistance.	●●●	●●●	●●	●●●	●●●
EBECRYL 205	 Aromatic urethane acrylate	25 TPGDA	30000		2	1,22	2000	3	W	General purpose, good abrasion and scratch resistance.	●●●	●●●	●●	●●●	●●
EBECRYL 210	Aromatic urethane acrylate			3900	2	1,11	1500	2	W,M	General purpose.	●	●	●●●●	●●	●●●●
EBECRYL 214	 Aromatic urethane acrylate	15 HDDA	16 000		2	1,10	1500	2	W,M	General purpose.	●	●●	●●●	●●	●●●
EBECRYL 215	 Aromatic urethane acrylate	20 TPGDA	16500		2	1,10	1500	2	W,M	General purpose.	●	●●	●●●	●●	●●●
EBECRYL 221	 Aromatic urethane acrylate	30 DPGDA	28500		2G	1,21	1000	6	W,P,M,R	Tin-free. Fast cure, high hardness and solvent resistance.	●●●●	●●●●	●	●●●●	●
EBECRYL 2221	 Aromatic urethane acrylate		21000		2	1,18	1200	6	W,P,M,R	Sn and PETIA free grade exhibiting higher flexibility.	●●●	●●●	●●●	●●●	●●
EBECRYL 225	 Aliphatic urethane acrylate			2300	100A	1,19	1200	10	P	Physically drying. Adhesion on metal and vacuum metallized surfaces.	●●●●	●●●●	●	●●●●	●
EBECRYL 4501	 Aromatic urethane acrylate	30 DPGDA	6500		<300A	1,15	2000	3.9	W,P	Tough and flexible. High abrasion and scratch resistance, especially for parquet, cork and resilient flooring.	●●●●	●●●	●●●	●●●●	
EBECRYL 6203	Aromatic urethane acrylate	30 DPGDA	6500		2	1,10	1500	2	W	General purpose, good abrasion resistance.	●	●●	●●●	●●	●●●
EBECRYL 8310	Aromatic urethane acrylate	5 TPGDA	5200		2	1,07	1500	2	W	Excellent abrasion resistance.	●●	●●	●●●	●●	●●●

*EBECRYL UV curable resins and diluting oligomers

 Sn-free









Urethane acrylates

Products	Description	Dilution	Viscosity mPa·s, 25°C	Viscosity mPa·s, 60°C	Color	Density	Molecular Weight (Mn)	Functionality	Market Segment (W, P, M, R)	Key Features	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
Aliphatic urethane acrylates															
EBECRYL®* 1271	 Aliphatic Urethane acrylate			4500	<75	1,04	1500	2	N	Used a flexibilizer, good adhesion, exterior durability	●	●	●●●●	●	●●
EBECRYL 230	Aliphatic urethane acrylate		40000		150 A	1,08	5000	2	W,P,M,R	Used to improve flexibility and adhesion.	●	●	●●●●	●	●●●
EBECRYL 242N	 Aliphatic urethane acrylate	30 IBOA		21000	1	1,1	2700	2	N	Flexible coating for metal substrates, good adhesion, excellent flexibility.	●	●	●●●●●	●	●●●●●
EBECRYL 264	Aliphatic urethane acrylate	15 HDDA	45000		2	1,12	2000	3	W,P,R	General purpose, excellent abrasion and scratch resistance.	●●●	●●●	●●	●●●●	●●●
EBECRYL 265	Aliphatic urethane acrylate	25 TPGDA	35000		2 G	1,13	2000	3	W,P,R	Good reactivity, abrasion resistance and non-yellowing.	●●●	●●●	●●	●●●●	●●●
EBECRYL 267	Modified aliphatic urethane acrylate		2500		1	1,14	1200	3	W	High abrasion resistance, with balanced flexibility and hardness.	●●●	●●●	●●	●●●	●●
EBECRYL 284	Aliphatic urethane acrylate	12 HDDA		2100	2	1,18	1200	2	W	Good exterior durability.	●●	●●	●●●	●●	●●●
EBECRYL 286	 Aliphatic urethane acrylate	25 TPGDA	23000		2	1,13	1200	2	W	Good exterior durability.	●●	●●	●●●	●●	●●●
EBECRYL 294/25 HD	Aliphatic urethane acrylate	25 HDDA		7000	2	1,10	1500	3	W,P,R	Best stain and abrasion resistance, excellent exterior durability, good thermal stability.	●●●	●●●	●●	●●●●	●●●
EBECRYL 1258	 Aliphatic urethane acrylate	20 HPMa		7500	75 A	1,08	2000	3	W	Good heat resistance, curing, flexibility and adhesion. Excellent abrasion resistance and stain resistance. Sn-free.	●	●●	●●●	●●	●●●
EBECRYL 1291	 Aliphatic urethane acrylate			2000	75 A	1,16	1000	6	P	Outstanding gloss, hardness, chemical resistance, and scratch and abrasion resistance. Sn-free.	●●●●	●●●●	●	●●●●	●
EBECRYL 4101	 Aliphatic urethane acrylate		7000		< 150 A	1,13	1100	3	W, P	Tough but flexible. High abrasion resistance, especially for parquet and resilient flooring.	●●●	●●	●●●	●●	●●●
EBECRYL 4201	 Aliphatic urethane acrylate		7000		< 150 A	1,13	2000	3,9	W, P	Tough but flexible. Very high abrasion resistance with many test methods, especially for parquet and resilient flooring.	●●●	●●	●●	●●●	●●●
EBECRYL 4220	Aliphatic urethane acrylate	25 TPGDA	23000		150 A	1,12	1300	3	W, P	Tough but flexible. High abrasion resistance, especially for parquet, resilient flooring and plastic.	●●●●	●●●	●●●	●●●	●●●
EBECRYL 4265	Aliphatic urethane acrylate		650		200 A	1,12	650	3,4	W, P	Hard. High scratch resistance, combination product for UA to reduce viscosity and increase resistance.	●	●●●●	●	●●●●	●
EBECRYL 4491	Aliphatic urethane acrylate	20 IBOMA	60000		200 A	1,13	7000	2	W, P	Elastomeric grade. Extremely flexible, elongation at break > 250 %; for temporary protective coatings, improves elasticity in combination with hard resins.	●	●	●●●●	●●	●●●
EBECRYL 4857	Aliphatic urethane acrylate			2000	< 100	1,16	900	2	N	Low viscosity, monomer-free, aliphatic urethane diacrylate with excellent flexibility. Designed for low yellowing and good outdoor resistance. Due to its low Tg, it is suitable for applications requiring haptic properties (soft touch).	●●	●	●●●●	●	●●●●

*EBECRYL UV curable resins and diluting oligomers

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Urethane acrylates

Products	Description	Dilution	Viscosity mPa·s, 25°C	Viscosity mPa·s, 60°C	Color	Density	Molecular Weight (Mn)	Functionality	Market Segment (W, P, M, R)	Key Features	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
EBECRYL®* 4513	Aliphatic urethane acrylate		22000		100 A	1,15	2000	3,2	W, P, R	Flexible, improves elasticity in combination with hard resins.	●●●	●	●●●	●●	●●●
EBECRYL 4587	Aliphatic urethane acrylate		1250		3,0 (Iodine)	1,13	1000	3,4	W, P	Hard. Brilliant coatings with good chemical and scratch resistance, water thinnable.	●●	●●●	●●	●●●	●●
EBECRYL 4654 	Aliphatic urethane acrylate	40 BuAc	840		100 A	1,02	1600	3,5	P	Physically drying resin with good outdoor properties.	●●	●●●	●●●	●●●	●●●●
EBECRYL 4666	Aliphatic allophanate based urethane acrylate		50000		150 A	1,18	2000	4	P	Hard, tough. High chemical and scratch resistance, especially in combination with high functional monomers. Suitable for outdoor use.	●●●	●●●●	●●	●●●●	●
EBECRYL 4680	Aliphatic urethane acrylate	20 HDDA	25000		150 A	1,14	1400	3,8	W, P	Hard Excellent weathering resistance.	●●●●	●●●●	●	●●●●	●●
EBECRYL 4683	Aliphatic urethane acrylate	35 IBOA	50000		100 A	1,10	1300	2,4	W, P, M	Extremely tough. Low shrinkage during curing, good adhesion to plastic and metal, outdoor resistance.	●	●●●	●●	●●●	●●●
EBECRYL 4738	Aliphatic allophanate urethane acrylate		25000		200A	1,15	900	3	W,P,R	Low viscous, weather-stable with very good chemical and mechanical resistance, good scratch resistance; high abrasion resistance and high resistance to yellowing.	●●●	●●●	●	●●●●	●●●
EBECRYL 4740	Aliphatic allophanate based urethane acrylate		8000		150 A	1,14	1250	3	W, P, M	High flexibility, combination resin for outdoor application.	●●	●●	●●●	●●●	●●●
EBECRYL 4820	Aliphatic urethane acrylate	35 HDDA	3300		30 A	1,08	1900	3	W	Good exterior durability.	●	●●●	●●	●●●●	●●●
EBECRYL 4858	Aliphatic urethane acrylate		7000		3	1,14	450	2	P	Excellent exterior durability, excellent scratch and impact resistance.	●●●	●●●	●●	●●●	●●●●
EBECRYL 4859 	Aliphatic urethane dimethacrylate		10000		<100A	1,14	470	2	W	Good hardness, optical clarity, low color and good impact resistance. Regulation friendly for tin, heavy metals, and quinones.	●●	●●	●●●	●●●	●●
EBECRYL 5129	Aliphatic urethane acrylate			700	1	1,18	800	6	W, P	Good scratch and abrasion resistance, moderate flexibility.	●●●●	●●●●	●	●●●●	●●
EBECRYL 8209 	Aliphatic urethane acrylate		4000		2	1,12	600	4	W, P	OH-functionalized urethane acrylate for dual cure application.	●●●●	●●●●	●	●●●●	●
EBECRYL 8409 	Aliphatic urethane acrylate		12500		1	1,16	1000	2	N	Excellent flexibility and abrasion resistance.	●●	●●	●●●●	●●	●●●●
EBECRYL 8465 	Aliphatic urethane acrylate			2250	2	1,14	1400	3	P	Excellent outdoor resistance.	●●●	●●	●●●	●●●	●●
EBECRYL 8890 	Silicone Modified Aliphatic Urethane Acrylate	30 MIBK		200	<1G	1,01	1400	6	N	High reactivity, chemical and stain resistance, excellent oil and water repellency (low surface energy coating).	●	●	●●●●●	●	●●●●●
EBECRYL 8894 	Aliphatic urethane acrylate	20 BuAc	70000		100 A	1,07	4000	4	P	High flexibility. Good abrasion resistance and humidity resistance.	●●●	●●	●●●	●●●	●●
EBECRYL 8896 	Aliphatic urethane acrylate	20 BuAc	10000		0,3	1,06	4500	3	P	Excellent flexibility, rubbery haptic feeling, good abrasion resistance.	●	●	●●●●	●●	●●

*EBECRYL UV curable resins and diluting oligomers

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Urethane acrylates for Dual-Cure

Products	Description	Functionality Double Bonds	Functionality NCO Groups	Viscosity at 25°C approx. mPas	NCO content % on supply form	Color	Density	Molecular Weight (Mn)	Market Segment (W, P, M, R)	Properties	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
Urethane acrylates for Dual-Cure															
EBECRYL®* 4141 	Aliphatic urethane acrylate	2	2	10000	12	150 A	1,13	700	W,P	Hard. For dual-cure technology; improves adhesion and coin test.	●	●●●●	●	●●●●	●●●
EBECRYL 4155	Aliphatic urethane acrylate	1	2	5500	9,3	100 A	1,21			Flexible. Improves adhesion on critical substrates and has electrical insulation properties.	●	●●	●●●●	●●●	●●●●●
EBECRYL 4250 	Aliphatic urethane acrylate	3,4	1,4	2000	5	100 A	1,10	1100	W,P	Hard. For dual-cure technology; improves adhesion and coin test; suitable for one component moisture curing UV-coatings; high UV-reactivity.	●●●	●●	●●●	●●	●●●●
EBECRYL 4396	Aliphatic urethane acrylate	1	2,2	14000	7,5	150 A	1,12	1200	W,P	Flexible. For dual-cure technology; improves adhesion, coin test and flexibility.	●	●●	●●●●	●●●	●●●●
EBECRYL 4397	Aliphatic urethane acrylate	1	2,2	12000	6,8	50 A	1,1	1400	W,P	Low Tg and flexible. For dual-cure technology; improves adhesion, coin test and flexibility.	●	●●	●●●●●	●●●	●●●●

*EBECRYL UV curable resins and diluting oligomers

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Polyester acrylates

Products	Description	Dilution	Viscosity mPa·s, 25°C	Color	Density	Acid value	Molecular Weight (Mn)	Functionality	Market Segment (W, P, M, R)	Key Features	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
Polyester acrylates															
EBECRYL 780	Acid functional polyester methacrylate	30% 2-methoxy-1-propanol	15000	150A		140	3000	~8	M,P	Physically drying. Adhesion on metal and vacuum metallized surfaces.	●●	●●●●	●●	●●	●●●●
EBECRYL 800	Polyester acrylate		14000	2	1,15	20	780	4	W,P	General purpose – low viscosity polyester acrylate.	●●	●●●	●●	●●●●	●●●
EBECRYL 810	Polyester acrylate		500	2	1,09	25	1000	4	W,P	Reactive diluting resin. Suitable for white pigmented systems.	●●	●●	●●	●●●	●
EBECRYL 830	Polyester acrylate		50000	3	1,18	30	1500	6	W,P	Very good reactivity and scratch resistance.	●●●	●●●●	●	●●●●	●
EBECRYL 853	Polyester acrylate		80	200A	1,10		470	3	W	Low viscous trifunctional polyester acrylate, having low irritation, low odor and good flexibility.	●	●●	●●●	●●	●●●
EBECRYL 854	Polyester acrylate		40000	1	1,20		600	3,1	W	All-round polyester acrylate with well-balanced properties for use in wood coatings.	●●●	●●	●●●	●●●	●●●●
EBECRYL 856	Polyester acrylate		3250	1	1,15			2,5	W	Binder for wood coating.	●●	●●●	●●	●●●	●●
EBECRYL 884	Polyester acrylate		25000				1250	3	W	Excellent flexibility and abrasion resistance for furniture and parquet floor.	●●●	●●●	●●●	●●●	●●
EBECRYL 892	Tetra-functional polyester acrylate		140	2	1,15			4	W,P	Good adhesion and hardness.	●●	●●●	●●	●●●	●●●
EBECRYL 895	Dipentaerythritol Penta / Hexaacrylate		8000	1		10	1,18	5	W	Very good scratch resistance, Low viscosity, low migration.	●●●●	●●●●	●	●●●●	●
EBECRYL 898	Polyester acrylate oligomer		3500			<20	1000	4		Co-binder to extend the matting effect of a silica containing formulation.	●●	●●	●●●	●●	●●●
EBECRYL 1885	Polyester acrylate		34000	<5G	1,19		1350	3	N	Excellent flexibility and abrasion resistance for furniture and sealer for parquet floor	●●●	●●●	●●●	●●●	●●●
EBECRYL 4744	Polyester acrylate		5000	300 A	1,15	<3	1000	3	W, P	Tough but flexible. Low viscosity, good balance between hardness and flexibility. Hydroxy groups containing type for dual-cure formulations (80 mg KOH/g).	●●	●●	●●●	●●●	●●
EBECRYL 5850	Bio-sourced Polyester acrylate		7000	< 3	1,27		350	2	W, P	Reactive, hard, medium flexible bio-based coating	●●●●	●●●	●●●	●●●	●●●

Polyesters in diluting monomers

Products	Description	Dilution	Viscosity mPa·s, 25°C	Color	Molecular Weight (Mn)	Acid Value	Density	Market Segment (W, P, M, R)	Properties	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
Unsaturated polyesters in diluting monomers														
EBECRYL®* 4175	Polyester resin	25 DPGDA	15000	2,0 (Iodine)	2300	<20	1,20	W	Hard, high gloss. For clear and pigmented primers and topcoats; good sandability, adhesion and intercoat adhesion; improves scratch resistance of UV topcoats.	●●	●●●	●	●●●	●●●●
EBECRYL 4381	Polyester resin	30 DPGDA	10000	3,0 (Iodine)	2200	<14	1,19	W	Hard, reactive. For clear and pigmented primers and topcoats; improved in reactivity, good adhesion and sandability.	●●	●●	●●	●●●	●●●
Saturated polyesters in diluting monomers														
EBECRYL 524	Polyester resin	30 HDDA	60000	250A	1000	30	1,22	P	Used as adhesion primer and binder on difficult substrates.	●	●●●	●●●	●	●●●
EBECRYL 525	Polyester resin	40 TPGDA	40000	200A	1000	25	1,21	P	Used as adhesion primer and binder on difficult substrates.	●	●●	●●●	●	●●●

*EBECRYL UV curable resins and diluting oligomers

Epoxy acrylates

Products	Description	Dilution	Viscosity mPa·s, 25°C	Viscosity mPa·s, 60°C	Color	Density	Acid value	Functionality	Market Segment (W, P, M, R)	Key Features	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
Epoxy acrylates															
EBECRYL®* 600	Epoxy acrylate			3000	2	1,13	2	2	W, P, M, R	Good boiling water resistance.	●●●	●●●●	●	●●●●	●
EBECRYL 600/30DP	Epoxy acrylate	30 DPGDA	3900		1	1,13	2	2	W, P, M, R	General purpose epoxy resin.	●●	●●	●●	●●	●●●
EBECRYL 600/35OT	Epoxy acrylate	35 OTA 480	11500		2	1,15	2	2	W, P, M, R	Good pigment wetting.	●●●	●●●	●	●●●	●●
EBECRYL 604	Epoxy acrylate	20 HDDA	8500		2	1,13	2	2	W, P, M, R	Outstanding water resistance.	●●	●●	●	●●●	●●●
EBECRYL 605	Epoxy acrylate	25 TPGDA	7500		2	1,17	2	2	W, P, M, R	General purpose – epoxy resin.	●●	●●	●●	●●	●●
EBECRYL 605/20	Epoxy acrylate	20 TPGDA	18000		2	1,17	2	2	W, P, M, R	General purpose – epoxy resin.	●●	●●	●●	●●	●●
EBECRYL 605/40	Epoxy acrylate	40 TPGDA	1650		2	1,11	2	2	W, P, M, R	General purpose – epoxy resin.	●●	●●	●●	●●	●●
EBECRYL 609	Epoxy acrylate	25 BuAc	3250		2	0,99	2	2	W, P, M, R	Resin for solvent based applications.	●●●	●●●●	●	●●●●	●●
EBECRYL 648	Epoxy acrylate	25 OTA 480	47500		3	1,14	2	2	W, P, M, R	Excellent pigment wetting.	●●●	●●●	●	●●●	●●
EBECRYL 3105	Epoxy methacrylate			600	5	1,18	5	2	W, P, M, R	Excellent adhesion.	●	●●	●●●●	●●	●●●●
EBECRYL 3300	Epoxy acrylate	35 DPGDA	1100		7	1,14	3	2	W, P, M, R	Outstanding adhesion to metal, good compromise hardness/flexibility and excellent corrosion resistance.	●●●●	●●●	●●	●●	●●●
EBECRYL 3416	Modified epoxy acrylate	35 TPGDA	18000		3	1,12	15	4	W, P, M, R	Reactivity, hardness and corrosion resistance.	●●●●	●●●	●	●●●●	●●
EBECRYL 3639	Modified epoxy acrylate	30 DPGDA	16500		3	1,15	2	2	W, P, M, R	High flexibility - high reactivity.	●●●●	●●●	●●●●	●●●	●●●
EBECRYL 3700/30TP	Epoxy acrylate	30 TPGDA	5700		3	1,17	3	2	W, P, M, R	General pupose epoxy resin - improved adhesion when adding isocyanates.	●●	●●	●●	●●	●●
EBECRYL 3701	Epoxy acrylate			7000	3	1,14	6	2	W, P, M, R	Enhanced adhesion to plastics.	●●	●●	●●●●	●●	●●●●
EBECRYL 3703	Epoxy acrylate			4250	6	1,14	5	2	W, P, M, R	Enhanced adhesion to plastics. Fast UV cure response.	●●●●	●●●●	●●●●	●●●	●●●●
EBECRYL 3708	Epoxy acrylate			3500	4	1,17	4	2	W, P, M, R	High flexibility, elongation and impact resistance.	●	●●●	●●●●	●●●	●●●●
EBECRYL 5848	Epoxidized soya bean oil acrylate		2500		8	1,03	15	3	W, P, M, R	Good pigment wetting - high renewable content.	●	●	●●●	●	●
EBECRYL 6040	Epoxy acrylate	25 OTA 480	25000		2	1,14	2	2	W, P, M, R	General purpose. Good pigment wetting.	●●●	●●●	●	●●●	●●

*EBECRYL UV curable resins and diluting oligomers

Acrylic acrylates

Products	Dilution	Viscosity mPa·s, 25°C	Viscosity mPa·s, 60°C	Color	Market Segment (W, P, M, R)	Key Features	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
Acrylic acrylates – Acrylic oligomer											
EBECRYL®* 740-40TP	40 TPGDA	110000	8500	3	W, P, M, R	Excellent primer for difficult substrates.	●	●	●●●	●	●●●●
EBECRYL 745	25 TPGDA, 25 HDDA	20000		3	W, P, M, R	Excellent primer for difficult substrates.	●	●	●●●	●	●●●●
EBECRYL 767	38 IBOA	175000	8500	3	W, P, M, R	Excellent primer for difficult substrates.	●	●	●●●●	●	●●●●
EBECRYL 1200	45 BuAc	3000		5	P	Physically drying. Suitable for exterior and topcoat application. OH functional, especially recommended for dual-cure application.	●●●	●●●	●●●	●●●	●●●

*EBECRYL UV curable resins and diluting oligomers













Amine modified polyether acrylates and amine synergists

Products	Description	Functionality	Viscosity mPa·s, 25°C	Color	Amine value (mg KOH/g)	Key Features	Reactivity	Flexibility	Chemical resistance	Adhesion	Pigment Wetting
Amine modified co-initiator											
EBECRYL* 7100	Amine Functional Acrylate Co-initiator	n.a.	1200	4	140	Highly efficient co-initiator, excellent adhesion to plastic substrates; can be used as a resin.	●●●●	●●●●	●●●	●●●●	●
EBECRYL P115	Tertiary Amine Co-initiator	n.a.	20	2	236	Highly efficient co-initiator.	●●●●	●●	●●●	●	●
EBECRYL P116	Tertiary Amine Co-initiator	n.a.	20	2	236	Highly efficient co-initiator.	●●●●	●●	●●●	●	●

Products	Description	Viscosity mPa·s, 25°C	Color	Density	Molecular Weight (Mn)	Functionality	Market Segment (W, P, M, R)	Key Features	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
Amine modified polyether acrylates													
EBECRYL* 80	Amine modified polyether	3000	200A	1,11	1000	4	W	Provides excellent reactivity in a formulation.	●●●●	●●	●●●	●●	●●●
EBECRYL 81	Amine modified polyether	100	2	1,08	600	2,5	W	Good reactivity combined with good diluting power.	●●	●●●	●●	●●	●●
EBECRYL 83	Amine modified polyether	500	2	1,11	1000	3,5	W	Very good reactivity, low residual odor.	●●●	●●●	●●	●●●	●●
EBECRYL 880	Amine modified polyether	24	1	1,04	600	2,2	W	Good scratch resistance, sprayable.	●●	●●●	●●	●●	●●

*EBECRYL UV curable resins and diluting oligomers

Waterbased and water-compatible resins

Products		Description	Solid content	Viscosity mPa·s, 25°C	pH	Max. average particle Size	Molecular Weight (Mn)	Tack-free before cure	Market Segment (W, P, M, R)	Key Features
Waterbased resins										
UCECOAT®* 2501		Aliphatic polyurethane acrylate dispersion	40	<200	7.0-8.5	<125	20.000	Y	W,P,R	Versatile resin, good adhesion, excellent compatibility with WB acrylic resins.
UCECOAT 6558		Aliphatic urethane acrylate solution in water	50	3400		NA	2000	N	W	Especially recommended as wood primer. High wood wetting,adhesion and flexibility. Resoluble in water before UV cure.
UCECOAT 7156		Aliphatic polyurethane acrylate dispersion	50	3300 (23°C)	6,4-7,8	<150	5500	N	W	High solid content dispersion with high wood wetting, adhesion, chemical resistance, flexibility and hardness, low yellowing. Resoluble in water before UV cure.
UCECOAT 7177		Aliphatic polyurethane acrylate dispersion	40	<200	6,4 - 7,8	<150	5500	N	W	High wood wetting, adhesion, chemical resistance, flexibility and hardness, low yellowing. Resoluble in water before UV cure.
UCECOAT 7230		Aliphatic polyurethane acrylate dispersion	45	<200	6,0- 8,0	<100	2500	Y	W	Hardcoat with ultimate cured coating resistance. Can serve as a binder modifier to increase performance of other waterborne resins. High solid content.
UCECOAT 7510		Aliphatic polyurethane acrylate dispersion	40	<200	6,5 - 8	<150	7000	Y		Easy to use topcoat for clear & white pigmented coating. Low yellowing directly after cure. High hardness. Good compatibility. Easy matting.
UCECOAT 7630		Aliphatic polyurethane acrylate dispersion	41	<200	6,5 - 8	<150	10000	Y		Top coat with very high reactivity for both clear & pigmented systems. Best-in-class intercoat adhesion. Excellent stain & solvent resistance. Very high hardness & scratch resistance.
UCECOAT 7655		Aliphatic polyurethane acrylate dispersion	35	<200	7 - 8,5	<150	10000	Y	W, P, R	High stain resistance, scratch and reactivity in white pigmented and clearcoat systems.
UCECOAT 7689		Aliphatic polyurethane acrylate dispersion	35	<200	7 - 8,5	<100		Y	W, P, R	Outdoor resistance, good flexibility and chemical resistance.
UCECOAT 7700		Aliphatic polyurethane acrylate dispersion	35	<200	7,0 - 8,5	<150		Y	W, P	Very high hardness and scratch resistance (nail, pencil, coin), high stain and blocking resistances for high-end wooden furniture top coats, incl. pigmented systems.
UCECOAT 7717		Aliphatic polyurethane acrylate dispersion	40	<250	6 - 7,5	<150	5500	N	W	High “Anfeuerung” primer. High gloss.
UCECOAT 7738		Aliphatic polyurethane acrylate dispersion	38	<200	7,0 - 8,5	<200	4000	Y		Topcoat for clear & white pigmented coating on wood. Outstanding balance between hardness & flexibility. Excellent (white) pigment wetting that allow to combine high gloss without defects, while maintaining a high pigment coverage. Pictogram free.
UCECOAT 7773		Aliphatic polyurethane acrylate dispersion	39	<250	7 - 8,5	<150	10000	Y	W, P, R	Recommended for PVC resilient flooring and topcoat on wood, high stain resistance and hardness.
UCECOAT 7788		Aliphatic polyurethane acrylate dispersion	40	<500	7 - 8,5	<150	20000	Y	W, R	Versatile resin with good stability and good balance of coating properties, wide compatibility with various resins and additives.
UCECOAT 7850		Aliphatic polyurethane acrylate dispersion	35	<200	7,5	<100	10000	Y		Versatile resin, recommended for resilient flooring and coatings on wood, good stain resistance.
UCECOAT 7856		Aliphatic polyurethane acrylate dispersion	45	<500	6 - 7	<150		N	W	For high gloss and mirror image coatings on wood.
UCECOAT 7892		Aliphatic polyurethane acrylate dispersion	32	10-22s (DIN 4, 20°C)	6 - 8,5	<150		Y	W, R	Allows the development of high/low gloss formulations. Good balance of flexibility and hardness, high stain and chemical resistance. Contains a dye indicator to provide visible evidence that the floor coating is properly cured.

* UCECOAT waterbased UV curable resins

 Sn-free

RAYLOK® performance products

Products	Description	Viscosity mPa·s, 25°C	Viscosity mPa·s, 60°C	Color	Density	Molecular Weight (Mn)	Functionality	Market Segment (W, P, M, R)	Key features
RAYLOK®* 1622	Oil modified acrylate	520		7	0,98		3	W	Oil modified binder, UV-curing with 80W/cm lamps.
RAYLOK 1722	Phosphorus based acrylated oligomer		7100	2,5	1,10	3000	2	W	Halogen-free flame retardant oligomer, used in intermediate coats, superior clarity of the cured film.
RAYLOK 5021	Aromatic urethane acrylate		12500	2	1,14		2	P	For electrical sleeves – excellent flexibility, electrical and thermal insulating properties.

* RAYLOK UV curable performance products

Diluting acrylates

Products	Description	Viscosity mPa·s, 25°C	Color	Density	Acid value	Market Segment (W, P, M, R)	Key Features	Performance of Material					Performance in Product group				
								Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion	Reactivity	Hardness	Flexibility	Chemical resistance	Adhesion
Monofunctional								Diluting acrylates (1)					Family (2)				
EBECRYL®* 110	Oxyethylated phenol acrylate	20	200A	1,12	1	P	Low odor monoacrylate; good adhesion onto non-polar substrates.	●	●●	●●●●	●●	●●●●	●●	●●	●●●	●●●	●●●
EBECRYL 113	Monofunctional epoxy acrylate	120	1	0,97		W,P	Low irritant, low odor.	●	●●	●●	●●	●●●	●●●	●●●	●●●	●●●	●●
EBECRYL 114	Phenoxyethyl acrylate	10	200A	1,10	1	P	Excellent adhesion to plastics and metal.	●	●●	●●●●	●●	●●●●	●●●	●●●●	●●●●	●●●	●●●
IBOA	Isobornyl acrylate	9	100A	0,98	1	W,P	High Tg.	●●●	●●●	●●	●●●	●●	●●●	●●●	●●	●●●	●●
Difunctional																	
EBECRYL 11	Polyethylene glycol 600 diacrylate	155	3	1,11		W	100% water soluble. Good Flexibility.	●●	●●	●●●	●●	●●●	●●	●●	●●●	●●	●●●
EBECRYL 130	Tricyclodecanediol diacrylate	160	2	1,01		P	High reactive diluting oligomer characterised by high Tg and low shrinkage.	●●	●●●	●●	●●●	●●●●	●●	●●●	●●	●●●	●●●●
EBECRYL 145	Propoxylated neopentyl glycol diacrylate	20	1	1,01		P	Aliphatic di-functional acrylate of low surface tension.	●●	●●	●●●	●●	●●●	●●	●●	●●●	●	●●●
EBECRYL 150	Bisphenol A derivative diacrylate	1400	1	1,14	5	W,P	Low irritant, high reactive diluting acrylated resin.	●●●●	●●●	●●	●●●	●●	●●●●	●●●	●●	●●●	●●
DPGDA	Dipropylene glycol diacrylate	10	100A	1,06	0,4	W,P	High diluting power.	●●	●●	●●	●●	●●●	●●	●●●	●●●	●●	●●●
HDDA	1,6-Hexanediol diacrylate	6	40A	1,03	0,4	W,P	High diluting power, good weathering properties.	●●	●●	●●	●●●	●●●	●●	●●●	●●	●●●	●●●●
TPGDA	Tripropylene glycol diacrylate	10	50A	1,05	0,4	W,P	High diluting power.	●●	●●	●●	●●	●●●	●●	●●	●●●	●	●●●
Trifunctional																	
EBECRYL 160	Trimethylolpropane ethoxy triacrylate	70	60A	1,09	0,4	W,P,M,R	Good compromise of properties.	●●●	●●●	●●	●●●	●●	●●●	●●●	●●●	●●●	●●●
OTA 480	Acrylated glycerol derivative	90	60A	1,08	0,4	W,P,M,R	Good compromise of properties, good pigment wetting.	●●●	●●●	●●	●●●	●●	●●	●●	●●●	●●●	●●●
TMPTA	Trimethylolpropane triacrylate	115	50A	1,11	0,4	W	Good surface cure and scratch resistance.	●●●●	●●●●	●	●●●●	●	●●●●	●●●●	●	●●●●	●
Multifunctional																	
EBECRYL 40	Polyether tetraacrylate	160	1	1,15		W,P,M,R	Low shrinkage.	●●	●●	●●●	●●●	●●●	●●	●●	●●●	●●●	●●●
EBECRYL 50	Polyether tetraacrylate	200	1	1,15		W,P,M,R	Low shrinkage.	●●	●●	●●●	●●●	●●●	●●	●●	●●●	●●●	●●●
EBECRYL 140	Polyester acrylate	1000	400A	1,1	110	W,P	Good reactivity and hardness.	●●●	●●●	●●	●●●	●●	●●●	●●●	●●	●●●	●●
DPHA	Dipentaerythritol penta / hexaacrylate	16000	1	1,18	10	W	Very good scratch resistance.	●●●●	●●●●	●	●●●●	●	●●●●	●●●●	●	●●●●	●
PETIA	Mixture of pentaerythritol tri- and tetraacrylate	1100	200A	1,18	10	W	High degree of crosslinking.	●●●●	●●●●	●	●●●●	●	●●●●	●●●●	●	●●●●	●

*EBECRYL UV curable resins and diluting oligomers

Radiation curable additives and photoinitiators

Products	Description	Dosage	Over-coatability	Leveling agent	Adhesion promoter	Key Features
Radiation curable additives						
EBECRYL®* 168	Methacrylated acidic derivative.	1,0–5,0%	Yes	No	Yes	Good adhesion on wood and melaminated foil.
EBECRYL 170	Acrylated acidic derivative.	5,0–10,0%	Yes	No	Yes	Good adhesion to metal, glass, plastic and wood.
EBECRYL 171	Methacrylated acidic derivative.	1,0–5,0%	Yes	No	Yes	Good adhesion to metal, glass, plastic and wood.
EBECRYL 331	Radiation curable leveling & dispersing agent.	0,5-5%	Yes	Yes	No	High wetting power (to achieve high gloss and high colour strength), prevents settling of pigments/ extenders, good levelling properties, recommended specifically for use in metallic formulations (very good stabilization of aluminium flakes).
EBECRYL 350	Silicone diacrylate.	0,3–1,0%	No	Yes	No	Copolymerisable silicone derivative providing good substrate wetting and slip.
EBECRYL 1360	Silicone hexaacrylate.	0,3–1,0%	No	Yes	No	Copolymerisable silicone derivative providing good substrate wetting and slip, mainly recommended for EB-curing.

Products	Description	Type	State	Non-yellowing	Key Features
Photoinitiators					
EBECRYL P39	Polymeric Benzophenone Derivative.	H-abstraction	Liquid	Yes	Photoinitiator for low odor UV coatings.

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