UV/EB CURABLE RESINS
PACKAGING COATINGS & GRAPHIC ARTS

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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 industrial and plastic coatings as well as 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

Epoxy Acrylates
Epoxy acrylates provide a good combination of performance properties. Standard BADGE (bisphenol A diglycidyl ether) acrylates exhibit very fast cure response and are known for their good hardness, excellent chemical resistance, high gloss and high viscosity. Modified BADGE acrylates can also provide improved pigment wetting, greater toughness and increased flexibility.

Polyester Acrylates
Polyester acrylates cover a wide range of viscosities (low to high) and cure speeds and exhibit moderate to high shrinkage. Polyester acrylates can provide improved pigment wetting and proper water balance for lithographic printing.

Urethane Acrylates
Urethane acrylates are versatile products, capable of providing 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 and cure speeds. Products are available in a wide range of viscosities. Aliphatic urethane acrylates are, in comparison to aromatic urethane acrylates, known for their non-yellowing performance.

Adhesion Promoting Resins
Polymeric resins in monomer can provide adhesion to difficult substrates with low shrinkage and better film formation.

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

Diluting Acrylates
Diluting acrylates provide viscosity control of energy curable coatings and inks. Unlike volatile solvents, diluting acrylates react with acrylate resins to form the polymer network and have significant influence on the cured properties. Reactivity, hardness, chemical resistance and shrinkage will increase with the increasing functionality of the diluting acrylate, while flexibility and adhesion can decrease.

Additives
Reactive additives were developed for radiation curing applications to give specific additive characteristics (adhesion, wetting, levelling, slip) while becoming part of the network after curing.

Performance Keys

	●	●●●●●
Adhesion	Poor	Very good
Flexibility	Poor	Very good
Pigment wetting	Poor	Very good
Reactivity	Low	High
Solvent Resistance	Low	Very good
Yellowing	Yellowing	No Yellowing

Definitions

Acid value (AV)	The acid content expressed in mg KOH per gram.
Application Field	F Flexography I Inkjet L Lithography O Over print varnish S Screen
Color	Average values in Gardner or Pt-Co (APHA/Hazen) scales. • Gardner - 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 - 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.
Functionality	Theoretical number of acrylate double bonds per molecule.
Hydroxyl value (OHV)	The hydroxyl content expressed in mg KOH per gram.
LEO	Low Extractables and Low odor. Produced under GMP (Good Manufacturing Practices) with low chemical of concern profile.
Amine value	mg KOH corresponding to the tertiary amine content per g of product
Viscosity	Viscosity in millipascal-seconds (mPa•s) at the specified temperature. Note: mPa•s = centipoise (cP)

Epoxy Acrylates

Products	Description	Dilution	Functio-nality	Viscosity mPa·s, 25°C	Viscosity mPa·s, 60°C	Acid value mg KOH/g	OH value mg KOH/g	Color Gardner	Adhesion	Solvent Resistance	Reactivity	Flexibility	Pigment Wetting	Application Field	Key Features
EBECRYL® 600	Standard Bisphenol-A Epoxy Acrylate	-	2	1000000	3000	2	220	2	●	●●●●●	●●●●●	●●	●	O, S	Fast cure, high gloss, excellent solvent resistance, low color.
EBECRYL 605	Standard Bisphenol-A Epoxy Acrylate	25% TPGDA	2	10000	-	2	190	2	●	●●●●●	●●●●●	●●	●	O, S	Fast cure, high gloss, excellent solvent resistance, low color.
EBECRYL 641	Modified Bisphenol-A Epoxy Acrylate	-	2	21000	-	n.a.	-	2	●●●●	●●●●●	●●●●●	●●●	●●	F, O, S	Good adhesion to conventional inks, good flexibility.
EBECRYL 646	Modified Bisphenol-A Epoxy Acrylate	30% TMPTA	2	25000	-	2	-	2	●●	●●●●●	●●●●●	●●●●	●●●	L, O, S	Higher MW, improved pigment wetting (especially TiO2).
EBECRYL 812	Modified Bisphenol-A Epoxy Acrylate	-	4	8000	-	8	-	1	●●●	●●	●●●	●●	●●●	F	Designed for flexographic applications; good adhesion.
EBECRYL 1606	Standard Bisphenol-A Epoxy Acrylate	20% TMPTA	2	30000	-	2	-	1	●●	●●●●●	●●●●●	●●	●●	L, O	Fast cure, high gloss, excellent solvent resistance, low color.
EBECRYL 1608	Standard Bisphenol-A Epoxy Acrylate	15% OTA-480	2	75000	1000	2	205	2	●	●●●●●	●●●●●	●●	●●	L, O	Fast cure, high gloss, excellent solvent resistance, low color.
EBECRYL 3203	Modified Bisphenol-A Epoxy Acrylate	-	2,7	1000	-	1	-	2	●	●●●●	●●●●●	●●	●●●●●	F, S	Excellent wetting of carbon black pigments.
EBECRYL 3420	Modified Bisphenol-A Epoxy Acrylate	-	2	22000	-	2	-	3	●●	●●●●●	●●●●●	●●●	●●	F, L	Flexible, good wetting of carbon black pigments.
EBECRYL 3608	Fatty Acid Modified Bisphenol-A Epoxy Acrylate	15% OTA-480	2	65000	1000	2	200	2	●	●●●	●●●	●●	●●	F, L, S	Good lithographic behavior.
EBECRYL 3639	Modified Bisphenol-A Epoxy Acrylate	35% DPGDA	2	15500	-	n.a.	-	3	●●	●●●●●	●●●●●	●●●●●	●	F, O, S	Excellent flexibility combined with high reactivity and good scratch resistance.
EBECRYL 3700	Standard Bisphenol-A Epoxy Acrylate	-	2	1150000	4000	2	-	3	●	●●●●●	●●●●●	●●	●●	F, L, O, S	Fast cure, high gloss, excellent solvent resistance, good wetting of carbon black pigments.
EBECRYL 3700/18OT	Standard Bisphenol-A Epoxy Acrylate	18% OTA-480	2	85000	-	1	-	3	●	●●●●●	●●●●●	●●	●●	F, L, O, S	Good wetting of carbon black pigments.
EBECRYL 3701	Modified Bisphenol-A Epoxy Acrylate	-	2	1250000	7000	5	-	6	●●●	●●●●	●●●	●●●	●●●	F, L, O, S	Flexible, good adhesion to plastics.
EBECRYL 3702	Fatty Acid Modified Bisphenol-A Epoxy Acrylate	-	2	600000	3000	3	-	6	●	●●●	●●●	●●	●●●	F, L	Good lithographic behavior and wetting of organic pigments.
EBECRYL 3703	Modified Bisphenol-A Epoxy Acrylate	-	2	360000	4520	5	-	5	●●●	●●●●	●●●●	●●●	●●●	F, O, S	Very good flexibility, high reactivity, good adhesion to plastics.
EBECRYL 3703/20TO	Modified Bisphenol-A Epoxy Acrylate	20% EBECRYL 160	2	48000	900	4	-	5	●●●	●●●●	●●●●	●●●	●●●	F O, S	Very good flexibility, high reactivity, good adhesion to plastics; moderate viscosity.
EBECRYL 3708	Modified Bisphenol-A Epoxy Acrylate	-	2	200000	4200	3	-	4	●●●●	●●●●	●●●	●●●●●	●●●	F, L, O, S	Very good flexibility, adhesion to plastics.
EBECRYL 5848	Epoxidized Soya Oil Acrylate	-	3	25000	-	10	-	10	●	●	●	●●●●	●●	L, O, S	Hot foil stamping, BPA-free product.
EBECRYL 6040	Modified Bisphenol-A Epoxy Acrylate	-	2	25000	-	2	195	2	●●	●●●●●	●●●●●	●●	●	O, S	Low viscosity, high scratch resistance, high gloss, good solvent resistance.

Polyester Acrylates

Products	Description	Functionality	Viscosity mPa·s, 25°C	Acid value mg KOH/g	OH value mg KOH/g	Color Gardner	Adhesion	Solvent Resistance	Reactivity	Flexibility	Pigment Wetting	Application Field	Key Features
EBECRYL® 450	Polyester Hexaacrylate	6	8600	20	70	dark	●●●	●●	●●●●	●	●●●●	F, L	Very good lithographic behavior, good pigment wetting and high reactivity.
EBECRYL 452	Polyester Tetraacrylate	4	600	10	20	dark	●●	●	●●●	●●	●●●●●	F, I, L	Exceptional pigment wetting allows preparation of highly concentrated pigment pastes.
EBECRYL 657	Polyester Tetraacrylate	4	125000	20	25	dark	●	●	●●●	●●	●●●●	F, L	Very good lithographic behavior and pigment wetting.
EBECRYL 820	LM Polyester Hexaacrylate	6	550	10	-	dark	●●	●●●	●●●	●	●●●●	F, I	Low migration product; exceptional pigment wetting allows preparation of highly concentrated pigment pastes.
EBECRYL 846	Modified Polyester Acrylate	6	45000	10	-	dark	●●	●●●	●●●●	●	●●	L	Very high reactivity.
EBECRYL 859	High MW Polyester Acrylate	6	36000	3	-	yellow	●●●	●●●	●●●●	●●	●●●●	L	Excellent lithographic behavior on high speed presses, high reactivity, and very good pigment wetting.
EBECRYL 870	Polyester Hexaacrylate	6	45000	15	30	dark	●●	●●●	●●●●	●	●●●●	F, L	High reactivity; very good lithographic behavior and pigment wetting.
EBECRYL 873	Polyester Hexaacrylate	6	45000	15	50	dark	●●●	●●●	●●●●	●	●●●●	F, L	High reactivity; good adhesion; very good lithographic behavior and pigment wetting.
EBECRYL 875	Polyester Tetraacrylate	4	75000	8	-	1	●●	●	●●	●●	●●	waterless	Good adhesion to plastics, good cure response; recommended for waterless offset inks.
EBECRYL 1657	Polyester Tetraacrylate	4	125000	20	25	dark	●	●	●●●	●●	●●●●	F, L	Low odor version of EBECRYL 657.
EBECRYL 1870	Polyester Hexaacrylate	6	45000	15	30	dark	●●	●●●	●●●●	●	●●●●	F, L	Low odor version of EBECRYL 870.
EBECRYL 5850	Polyester Acrylate	2	5000	-	-	1	●●	●●●●	●●●●	●	●●●●	O, F, L, S	High reactivity and high Tg: can be used for BPA-free development. High renewable content (56 %).
EBECRYL LEO™ 10801	Polyester Hexaacrylate for Low Extractables and Odor	6	48000	10	25	dark	●●	●●●	●●●●	●	●●●●	F, L	Product for indirect food packaging produced under GMP (Good Manufacturing Practices). Excellent pigment wetting and ink water balance.
EBECRYL LEO 10101	Self-curing Acrylate resin	3	3500	< 1	< 25		●●	●●●	●●●●●	●●●	●	F, S, I, O	Use 20-30% in formulation.
EBECRYL LEO 10103	Self-curing Acrylate resin	3	6000	< 1	< 25		●●	●●●	●●●●	●●	●●	L, F, S, I, O	Use 15-20% in offset inks - Free choice of synergist.

Urethane Acrylates

Products	Description	Dilution	Functionality	Viscosity mPa·s, 25°C	Viscosity mPa·s, 60°C	Color Gardner (Pt-Co)	Adhesion	Solvent Resistance	Reactivity	Flexibility	Yellowing	Pigment Wetting	Application Field	Key Features
EBECRYL® 210	Aromatic Urethane Diacrylate	-	2	214000	3900	2	●●●●●	●●	●●	●●●●	●●	●	F, O, S	Undiluted, good flexibility, general purpose.
EBECRYL 220	Aromatic Urethane Hexaacrylate	-	6	28500	-	2	●	●●●●●	●●●●●	●	●●	●●●	F, L, S	Fast cure, high hardness and solvent resistance.
EBECRYL 225	Aliphatic Urethane Deca-acrylate	-	10		2100	(100)	●	●●●●●	●●●●●	●	●●●●	●●●	L,S	Tin-free. Outstanding surface hardness, good reactivity also for LED.
EBECRYL 230	Aliphatic Urethane Diacrylate	-	2	40000	-	(150)	●●●●●	●	●	●●●●●	●●●●●	●	O, S	Undiluted, high molecular weight resin; very high flexibility.
EBECRYL 244	Aliphatic Urethane Diacrylate	12% HDDA	2	370000	8000	2	●●●●●	●	●●	●●●●	●●●●●	●●●	O, S	High flexibility, non-yellowing.
EBECRYL 245	Aliphatic Urethane Diacrylate	25% TPGDA	2	41000	2500	2	●●●●●	●●	●●	●●●●	●●●●●	●●●	O, S	High flexibility, non-yellowing.
EBECRYL 264	Aliphatic Urethane Triacrylate	15% HDDA	3	45000	-	2	●●●	●●●●●	●●●●	●●●	●●●●●	●●●	O, S	Good reactivity, abrasion resistance and non-yellowing.
EBECRYL 265	Aliphatic Urethane Triacrylate	25% TPGDA	3	35000	-	2	●●●	●●●●●	●●●●	●●●	●●●●●	●●●	O, S	Good reactivity, abrasion resistance and non-yellowing.
EBECRYL 271	Aliphatic Urethane Diacrylate	-	2	-	3500	2	●●●●	●●	●	●●●●	●●●●●	●●	O, S	Tin-free. Undiluted, good flexibility, light stability and adhesion.
EBECRYL 284	Aliphatic Urethane Diacrylate	12% HDDA	2	70000	2100	2	●●●●	●●●	●●●	●●●	●●●●●	●●●	O, S	Good exterior durability and toughness.
EBECRYL 286	Aliphatic Urethane Diacrylate	25% TPGDA	2	23000	-	2	●●●●	●●●	●●●	●●●	●●●●●	●●●	O, S	Tin-free. Good exterior durability and toughness.
EBECRYL 294/25HD	Aliphatic Urethane Triacrylate	25% HDDA	3	245000	700	2	●●●	●●●●●	●●●●	●●●●	●●●●●	●●●	O, S	High chemical and stain resistance; excellent exterior durability .
EBECRYL 1291	Aliphatic Urethane Hexaacrylate	-	6	85000	2000	1	●	●●●●●	●●●●●	●	●●	●●	F, O, S	Tin-free. Fast cure, high hardness and solvent resistance.
EBECRYL 4820	Aliphatic Urethane Triacrylate	35% HDDA	3	3300	-	1	●●●●	●●●●●	●●	●●	●●●●●	●●●	O, S	Good exterior durability and toughness.
EBECRYL 4858	Aliphatic Urethane Diacrylate	-	2	7000	-	3	●●●●	●●●	●●●	●●	●●●●●	●●	F, O, S	Low Viscosity. Excellent exterior durability, excellent scratch and impact resistance.
EBECRYL 5129	Aliphatic Urethane Hexaacrylate	-	6	20000	700	2	●●	●●●●●	●●●●●	●●	●●●●●	●●	F, O, S	Good scratch and abrasion resistance; more flexible than EBECRYL 1290.
EBECRYL 8402	Aliphatic Urethane Diacrylate	-	2	12500	-	2	●●●●●	●●●●	●●●●	●●●●	●●●●●	●●●	F, L, O, S	Undiluted, good flexibility, toughness and exterior durability, low shrinkage.

UCECOAT® waterbased UV curable resins

Products	Description	Solid content	Visc. 25°C	pH	Max. average particle Size	Molecular Weight (Mn)	Tack-free before cure	Application Field	Key Features
UCECOAT®* 2801	Sn-free, Aliphatic polyurethane acrylate dispersion	38	15	6,7	90	<10 000	N	O, I	Versatile binder with good stability, reactivity and water resolubility
UCECOAT 2802	Sn-free, Aliphatic polyurethane acrylate dispersion	38	200	7,3	80	<10 000	N	O, I	Versatile binder especially designed for application onto PVC
UCECOAT 2803	Sn-free, Aliphatic polyurethane acrylate dispersion	40	250	7,5	75	>10 000	N	O, I	Versatile binder with excellent pigment wetting properties. Contains BPA.
UCECOAT 2804	Sn-free, Aliphatic polyurethane acrylate dispersion	35	75	7,5	100	>10 000	Y	O, I	Low migration binder with very high reactivity (both in UV and LED) and good adhesion onto plastic substrates
UCECOAT 2805	Sn-free, Aliphatic polyurethane acrylate dispersion	35	100	8,0	20	<10 000	Y	O, I	Low migration binder with good elongation properties and high ink stability due to very small particle size
UCECOAT 2806	Sn-free, Aliphatic polyurethane acrylate dispersion	35	10	6,7	75	<10 000	N	O, I	Low migration binder with very low viscosity, low surface tension and good water resolubility

* UCECOAT waterbased UV curable resins

Adhesion Promoting Resin

Products	Description	Dilution	Viscosity mPa·s, 25°C	Viscosity mPa·s, 60°C	Acid value mg KOH/g	OH value mg KOH/g	Color Gardner (Pt-Co)	Adhesion	Solvent Resistance	Reactivity	Flexibility	Pigment Wetting	Application Field	Key Features
EBECRYL® 303	Hydrocarbon Resin	45% HDDA	900	-	1	-	0.5	●●●●●	●	●●	●●	●●	F, O, S	Excellent adhesion to a wide range of plastic substrates, low viscosity.
EBECRYL 305	Hydrocarbon Resin	40% TMPTA	7000	-	1	-	0,5	●●●●●	●	●●●	●●	●●	F, L, O, S	Excellent adhesion to a wide range of plastic substrates, low viscosity.
EBECRYL 411	Modified Polyester Resin	40% DPGDA	1300	-	n.a.	n.a.	6	●●●●●	●	●●●●	●●●	●●●	F, L, O, S	Very good combination of adhesion and reactivity for low viscosity applications such as flexography.
EBECRYL 436	Chlorinated Polyester Resin	40% TMPTA	90000	1500	25	-	5	●●●●	●	●●●	●●	●	L	Very good combination of adhesion and reactivity.
EBECRYL 437	Chlorinated Polyester Resin	40% EBECRYL 40	160000	2700	30	-	7	●●●●	●●	●●●●	●	●	L	Very good combination of adhesion and reactivity.
EBECRYL 438	Chlorinated Polyester Resin	40% OTA 480	90000	1500	25	-	5	●●●●	●	●●	●●	●	L	Good adhesion to metals and plastics.
EBECRYL 444	Chlorinated Polyester Resin	40% OTA 480	75000	1200	25	-	5	●●●●	●	●●	●●	●	L	Good adhesion to metals.
EBECRYL 445	Chlorinated Polyester Resin	40% TMPTA	75000	1200	25	-	5	●●●●	●	●●	●●	●	L	Good adhesion to metals.
EBECRYL 446	Modified Chlorinated Polyester Resin	32% TMPTA	10000	1800	25	-	5	●●●●	●	●●●	●●	●	L	Similar performance to EBECRYL 436 with improved lithographic behavior.
EBECRYL 521	Chlorine-Free Polyester Resin	30% HDDA	60000	-	30	20	(250)	●●●●●	●	●	●●	●	F, O, S	Recommended for primers and laminating adhesives.
EBECRYL 522	Chlorine-Free Polyester Resin	40% TPGDA	40000	-	25	40	(200)	●●●●●	●	●	●●	●	F, L, O, S	Recommended for laminating adhesives and OPV on conventional oil based inks.
EBECRYL 526	Chlorine-Free Polyester Resin	40% TMPTA	100000	1900	30	40	(200)	●●●●●	●	●●	●●	●	F, L, O, S	Good adhesion, good pigment wetting and ink water balance in offset inks.
EBECRYL 570	LM Chlorine-Free Polyester Resin	50% EBECRYL 40	47000	-	20	40	(200)	●●●●	●	●●	●	●	F, L, O, S	Better suited for sensitive applications such as food packaging.
EBECRYL 571	Modified Chlorine-Free Polyester Resin	40% DPGDA	9000	-	n.a.	20	3	●●●●	●	●●	●●	●●●	F, O, S	Very good flexibility, developed for shrink sleeve applications.
EBECRYL 575	LM Chlorine-Free Polyester Resin	50% EBECRYL 892	60000	1400	10	40	-200	●●●●	●	●●	●●	●●●●	F, L, O, S	Good adhesion, good pigment wetting and ink water balance in offset inks. Suitable for low migration applications.
EBECRYL 740/40TP	Acrylic Resin	40% TPGDA	110000	8500	1	50	3	●●●●●	●	●●	●●●	●●●	S	Very good adhesion to plastics and on conventional oil based inks.
EBECRYL 741	Modified Acrylic Resin	45% HDDA	3500	-	-	-	6	●●●●●	●	●●	●●●	●●	S	Excellent adhesion to a wide range of plastic substrates combined with low viscosity.
EBECRYL 745	Acrylic Resin	25% HDDA 25% TPGDA	20000	-	1	40	3	●●●●●	●	●●	●●●	●●	S	Very good adhesion to plastics and metal.
EBECRYL 765	Acrylic Resin	25% HDDA 25% TPGDA	20000	-	< 30	-	3	●●●●	●	●●	●●●	●●●	S	Very good adhesion to plastics and metal.
EBECRYL 767	Acid Functional Acrylic Resin	38% IBOA	175000	8500	-	-	3	●●●●	●	●	●●●●	●●	S	Very good adhesion to plastics.

Amine Modified Polyether Acrylates, Amine Synergists, Photoinitiators

Products	Description	Functionality	Viscosity mPa·s, 25°C	Color Gardner (Pt-Co)	Amine value (mg KOH/g)	Adhesion	Solvent Resistance	Reactivity	Flexibility	Pigment Wetting	Application Field	Key Features
Amine Modified Polyether Acrylates												
EBECRYL® 80	Amine Modified Polyether Acrylate	2,5	3000	(200)	60	●●	●●	●●●●	●●	●	F, I, O, S	High reactivity.
EBECRYL 81	Amine Modified Polyether Acrylate	2,5	100	2	56	●●	●●	●●●●	●●	●	F, I, O, S	High reactivity combined with good diluting power.
EBECRYL 83	Amine Modified Polyether Acrylate	3,5	500	2	40	●●	●●●	●●●●●	●●●	●	F, I, O, S	High reactivity, low viscosity and low residual odor.
EBECRYL 85	Amine Modified Polyether Acrylate	3,3	160	2	40	●●●	●●●●	●●●●●	●●	●	F, I, O, S	Very high reactivity. Suitable for low migration applications.
EBECRYL LEO™ 10551	Amine Modified Polyether Acrylate	2,5	75	2	56	●●	●●	●●●	●●	●	F, I, O, S	Product for indirect food packaging produced under GMP (Good Manufacturing Practices).
EBECRYL LEO 10552	Amine Modified Polyether Acrylate	3,5	450	2	40	●●●	●●●	●●●●●	●●●	●	F, I, O, S	Product for indirect food packaging produced under GMP, good deep cure.
EBECRYL LEO 10553	Amine Modified Polymeric Tetraacrylate	3,4	220	2	28	●●	●●●	●●●●	●●●	●	F, I, O, S	Product for indirect food packaging produced under GMP.
Amine Synergists												
EBECRYL 7100	Amine Functional Acrylate Co-initiator	n.a.	1200	4	140	●●●●	●●●	●●●●	●●●●	●	F, I, O, S	Highly efficient co-initiator, excellent adhesion to plastic substrates; can be used as a resin.
EBECRYL P116	Tertiary Amine Co-initiator	n.a.	20	2	236	●	●●●	●●●●●	●●	●	F, I, O, S	Highly efficient co-initiator, typical use level of 8%.

Products	Description	Type	State	Non-yellowing	Flexography	Inkjet	Lithography	OPV	Screen	Key Features
Photoinitiators										
EBECRYL P39	Polymeric Benzophenone Derivative	H-abstraction	Liquid	●	●	●	●	●	●	Photoinitiator for low odor UV coatings; No yellowing in thin layers (<6 µ) typical for OPV; can be used in inks in combination with other photoinitiators.

Diluting Acrylates

Products	Description	Viscosity mPa·s, 25°C	Acid value mg KOH/g	OH value mg KOH/g	Color Gardner (Pt-Co)	Adhesion	Solvent Resistance	Reactivity	Flexibility	Application Field	Key Features
Monofunctional											
EBECRYL® 110	Ethoxylated Phenol Acrylate	20	1	15	5	●●●	●	●	●●●●	S	High Flexibility.
EBECRYL 113	Aliphatic Acrylate	120	1	190	3	●●●●	●	●●	●●●●●	I, L, O, S	Low odor, good flexibility and adhesion, Xi-free.
EBECRYL 114	Ethoxylated Phenol Acrylate	10	1	-	(200)	●●●	●	●●	●●●●	I, S	Very good adhesion to plastic and metal substrates.
EBECRYL 117	Hydroxy functional monoacrylate	70	1	160	(100)	●●●	●	●●	●●●●	F, I, S	Low odour, high flexibility, reactive through hydroxyl group
IBOA	Isobornyl Acrylate	9	1	-	(50)	●●●●	●	●	●	F, I, O, S	Low viscosity and color, high Tg.
Difunctional											
DPGDA	Dipropylene Glycol Diacrylate	10	1	40	(150)	●●●	●●●	●●	●●	F, I, O, S	Good cure speed and flexibility.
EBECRYL 11	Polyethylene Glycol Diacrylate	120	17	-	(50)	●●	●	●●	●●●	S	Miscible with water, good flexibility, screen inks and paper coatings.
EBECRYL 130	Tricyclodecanediol Diacrylate	160	1	30	4	●●	●●●	●●	●	F, I, S	High Tg, low shrinkage, good adhesion to rigid substrates.
EBECRYL 145	Propoxylated Neopentylglycol Diacrylate	20	1	40	(200)	●●●	●●●	●●	●●	F, I, O, S	Aliphatic difunctional acrylate with low surface tension.
EBECRYL 150	Diacrylated Bisphenol-A Derivative	1400	5	30	2	●	●●●	●●●	●●	L, O	High reactivity, good scratch resistance.
EBECRYL 151	Modified Diacrylate	125	1	35	5	●●	●●●	●●	●●	F, I	Excellent pigment wetting combined with low viscosity.
EBECRYL 152	Modified Diacrylate	20	1	30	2	●●●	●●●	●●	●●	F, I	Let down for inkjet inks; good flow , levelling and adhesion to wide range of plastic substrates.
HDDA	Hexanediol Diacrylate	10	1	15	(40)	●●●●	●●●	●●	●●	F, I, O, S	High diluting power, excellent adhesion, good weathering properties.
TPGDA	Tripropyleneglycol Diacrylate	15	1	40	(50)	●●●●	●●●	●●	●●	F, I, O, S	Good cure speed and flexibility.
Trifunctional											
EBECRYL 160	Ethoxylated Trimethylol Propane Triacrylate	80	1	25	(200)	●●	●●●	●●●	●●●	L, F, S, I, O	More flexible than TMPTA, good adhesion, high gloss and fast cure speed.
EBECRYL LEO™ 10501	Diluting Triacrylate	80	0,5	<25	(200)	●●	●●●	●●●	●●	L, F, S, I, O	Product for indirect food packaging produced under GMP (Good Manufacturing Practices), good cure speed.
OTA 480	Propoxylated Glycerol Triacrylate	90	1	60	(60)	●●	●●●	●●●	●	L, F, S, I, O	Low viscosity and fast cure speed.
TMPTA	Trimethylol Propane Triacrylate	115	1	30	(50)	●●●	●●●	●●●	●	L, F, S, I, O	High cure speed, chemical and abrasion resistance.
Tetrafunctional & higher											
DPHA	Dipentaerythritol Hexaacrylate	16000	8	60	3	●●	●●●●	●●●●●	●	L, F, S, I, O	Very high reactivity, high hardness and scratch resistance.
EBECRYL 40	Polyether Tetraacrylate	160	0,5	60	2	●●●	●●●	●●●	●●	F,L, S, I, O	High reactivity with good diluting power.
EBECRYL 45	Polyether Tetraacrylate	160	0,5	60	2	●●●	●●●	●●●	●●	F,L, S, I, O	High reactivity. Suitable for low migration applications.
EBECRYL 50	Polyether Tetraacrylate	200	0,5	60	2	●●●	●●●	●●●	●●	F, S, I, O	High reactivity.
EBECRYL 140	Ditrimethylolpropane Tetraacrylate	1000	10	30	(400)	●●	●●●	●●●●	●	L, F, S, I, O	Ditrimethylolpropane Tetraacrylate.
EBECRYL 892	Polyether Tetraacrylate	200	4	-	2	●●●	●●●	●●●	●●	L, F, S, I, O	Low viscosity, good reactivity and low shrinkage.
EBECRYL 895	Low Viscosity DPHA	7500	10	60	3	●●	●●●●	●●●●●	●	L, F, S, I, O	Low migration; very high reactivity, high hardness and scratch resistance.
EBECRYL 1141	Ditrimethylolpropane Tetraacrylate	1000	< 1.0	-	(200)	●●	●●●	●●●●	●	L, F, S, I, O	High reactivity and good hardness. Improved ink/waterbalance in litho inks.
EBECRYL LEO™ 10502	Polymeric Tetraacrylate	170	5	-	2	●●●	●●●	●●●	●●	F, S, I, O	Product for indirect food packaging produced under GMP (Good Manufacturing Practices), good flexibility.
PETIA	Pentaerythritol Tri- and Tetraacrylate Mixture	1100	10	115	(200)	●●●●	●●●●	●●●●	●	L, F, S, I, O	Hard, good chemical resistance and adhesion.

Additives

Products	Description	Viscosity mPa·s, 25°C	Acid value mg KOH/g	Color Gardner (Pt-Co)	Addition Level	Application Field	Key Features
Adhesion Promoters							
EBECRYL® 168	Methacrylated Acidic Compound	1350	290	3	1 -5	O, S	Adhesion promoter for metals and glass.
EBECRYL 170	Acrylated Acidic Compound	3000	300	6	5 - 8	O, S	Adhesion promoter for metals.
Flow and Levelling Aids							
EBECRYL 350	Silicone Diacrylate	350	7	10	0,5-2	F, L, O, S	Copolymerizable, substrate wetting and slip additive.
EBECRYL 1360	Silicone Hexaacrylate	2100	25	10	0,5-2	F, L, O, S	Copolymerizable, substrate wetting and slip additive; recommended for EB applications.
MODAFLOW® Resin	Silicone-free Levelling Agent	110000	-	(<80)	0,5-2	F, O, S	Silicone free anti-foam agent for screen printing.
MODAFLOW 9200	Silicone-free Levelling Agent	4000	-	(<150)	0,5-2	F, O, S	Silicone free levelling agent with excellent compatibility.
Miscellaneous							
EBECRYL 331	Dispersing Agent	300	70	colorlessless	0,5-3	F, I, S	Solvent-free dispersing agent for inorganic pigments, fillers and matting agents.
EBECRYL 341	Silicone-free Slip Agent	50	-	white	2 - 5	O	Silicone-free slip agent for use in OPV, allows overprintability.
EBECRYL 373	Anti-misting Additive	paste	-	yellow	3 - 5	L	Reduces misting of paste inks.
Low Energy Boosters							
EBECRYL LED 03	Surface cure booster	450	-	colorlessless	7 - 15	F, I, O, S	Low migration, surface cure booster in Low Energy / LED cure conditions

Notes