

# CYTEC



## Graphic Arts RADCURE™

Energy curable resins

Asia Pacific

From defining more efficient processes for mining customers to developing new additives for polymer-based alternatives to wood and metals, the product lines of Cytec Specialty Chemicals are unified in their dedication to customer-driven innovation.

Working closely with our customers, we develop revolutionary technologies that enable them to improve performance and productivity, enter new markets, and refine new applications. How to improve mine profitability or coatings efficiency in the face of important environmental concerns? How to develop polymers that really stand up to UV light? How to use phosphines to create better, safer biocides and fumigants for agriculture? Our technology and sales teams work on-site with customers every day to address today's business challenges and troubleshoot tomorrow's.

The applications are diverse, but the commitment is uniform: finding better solutions for customers through continual research, ongoing collaboration and a passion for innovation.

### **An Expansive Portfolio**

Cytec Specialty Chemicals is a complete solution provider for customers requiring high-value surface technologies in industries that include industrial coatings, automotive, architectural, wood and paper, graphics, adhesives and opto-electronics.

We offer our customers advanced and diverse products and technologies for surfaces with an emphasis on environmentally friendly products such as UV/EB (Ultra-violet/Electron beam) curable resins and additives, powder coating resins and additives, as well as waterborne and solventborne liquid coatings resins and additives. We are committed to working with our customers to develop environmentally advanced solutions and we are dedicated to open communication concerning the safe handling, distribution, use and disposal of the products we make.

### **A Focus on Customer Satisfaction**

Cytec Specialty Chemicals operates a globally integrated set of order fulfillment IT systems and processes. All Spec Chem personnel in the order

fulfillment processes are dedicated to delivering customer satisfaction through reliable and cost-effective supply of product to our customers. Cytec Spec Chem has specialized personnel in Customer Service, Procurement, Manufacturing, Planning and Logistics to achieve this goal. In addition to timely and accurate order fulfillment, there is an equally important focus on maintaining safety and protecting the environment at all steps in the process, from the procurement of raw materials to the delivery of finished goods to the customer's door.

### **Dedication to Operational Excellence**

Cytec's Spec Chem Manufacturing Organization operates globally to provide superior service to our customers in all regions. Our vision of operational excellence brings value to our customers through ongoing, continuous improvement initiatives, including Lean Manufacturing, Six Sigma Principles, and Best Practice Engineering. Our value proposition is driven by excellence in our Safety, Environmental, Quality Systems and Employee Development Programs. We are structured by business technology, which enables our sites to work transparently with R&D, Customer Service and the Businesses, to share best practices across common processes. We also are able to gain leverage from overall global manufacturing synergies to most efficiently meet customer needs.

### **Key product lines**

- Liquid Coating Resins and Additives
- Mining Chemicals
- Phosphine and Phosphorus Specialties
- Polymer Additives
- Powder Coating Resins and Additives
- RADCURE™ UV/EB Curable Resins and Additives
- Pressure Sensitive Adhesives
- Specialty Additives
- Specialty Urethanes

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## Products for lithographic inks (incl. letterpress)

Products	Pigment wetting	Tack 350 m/min	Misting	Ink water balance	Reactivity	Adhesion	Rubber compatibility
<b>Oligomers / Diluting acrylates</b>							
EBECRYL™ 140*	●●●	●●●●	●●	●●	●●●●	●●	●●●
EBECRYL 150	●●●●	●●●●●	●●●	●●●	●●●	●	●●●●
EBECRYL 220	●●	●●	●●	●	●●●●●	●●●	●●●●●
EBECRYL 436	●	●	●●	●●	●●●	●●●●	●●●
EBECRYL 438	●	●	●●	●●	●●	●●●●	●●●●
EBECRYL 446	●	●	●●	●●●	●●	●●●●	●●●●
EBECRYL 450	●●●●	●●●	●●	●●●●	●●●●	●●●	●●
EBECRYL 525	●	●	●●	●	●	●●●●●	●
EBECRYL 648	●●●	●●●●	●●●	●	●●●●	●●	●●●
EBECRYL 657/1657	●●●●	●	●●●	●●●●	●●●	●	●●●●●
EBECRYL 811	●●	●●●●	●●●●	●●●	●●	●●●	●●●
EBECRYL 837	●●●●	●●●●	●●	●	●●●●●	●●	●●●●●
EBECRYL 845	●●●●	●	●●●	●●●●	●●	●	●●●●●
EBECRYL 846	●●	●●	●●●	●●	●●●●	●●	●●●
EBECRYL 859	●●●●●	●●●	●●●	●●●●●	●●●●●	●	●●●●●
EBECRYL 860	●●●	●●●	●●●	●●	●●	●●	●●●
EBECRYL 870/1870	●●●●	●●	●	●●●●	●●●●	●●	●●●●
EBECRYL 892	●●	●●●	●●	●●	●●●	●●●	●●●●
EBECRYL 1606	●●	●	●●●	●	●●●●●	●●	●●
EBECRYL 1608	●●	●	●●●	●	●●●●●	●	●●●
EBECRYL 3420	●●	●●	●●●	●●	●●●●●	●●	●●●
EBECRYL 3700	●●	●	●●●	●	●●●●●	●	●●●
EBECRYL 3701	●●●	●	●●●	●●●	●●●	●●●	●●●●
EBECRYL 3702	●●●	●●	●●	●●●	●●●	●	●●●●
EBECRYL 3708	●●●	●●●	●●●	●●●	●●●	●●●	●●●●
EBECRYL 3740-TP20	●	●●	●●	●	●●●●●	●●●	●●●
EBECRYL 6040	●●	●	●●●	●	●●●●●	●●	●●●
EBECRYL 9436	●●	●●	●●	●●●	●●	●●●●	●●●
EBECRYL LEO™ 10501*	●●●	●●●	●	●●	●●●●	●●●	●●
EBECRYL LEO 10502	●●	●●●	●	●●	●●●	●●●	●●
EBECRYL LEO 10601	●●●●	●●	●●●	●●	●●●●●	●●	●●●
EBECRYL LEO 10801	●●●●	●	●●●	●●●●	●●●	●	●●●●●
DPHA	●●●●	●●●●	●●	●	●●●●●	●●	●●●●●
OTA 480	●●●	●●●	●	●●	●●●	●●	●●●
TMPTA	●●	●●●	●	●●	●●●●	●●●	●●

\* EBECRYL™ UV curable resins

\* EBECRYL LEO™ UV curable resins (low extractability and low odour)

## Products for flexographic inks

Products	Pigment wetting	Reactivity	Adhesion plastic/metal	Flow	Grinding/Let down
<b>Oligomers / Diluting acrylates</b>					
EBECRYL 40	●●	●●●	●●●	●●●	Let down
EBECRYL 53	●●●	●●●	●●	●●●	Let down
EBECRYL 80	●●	●●●●	●●	●●	Let down
EBECRYL 81	●●	●●●●	●●	●●●	Let down
EBECRYL 83	●●	●●●●	●●	●●	Let down
EBECRYL 84	●●●	●●●	●●	●●●	Let down
EBECRYL 130	●●●●	●●●●	●●●	●●●	Grinding
EBECRYL 140	●●●	●●●●	●●	●●●●	Let down
EBECRYL 145	●●	●●	●●●	●●●	Let down
EBECRYL 153	●●●	●●●	●●●	●●●●	Let down
EBECRYL 450	●●●●	●●●●	●●●	●●●●	Grinding
EBECRYL 648	●●●	●●●●●	●	●●●	Grinding
EBECRYL 810	●●	●●●	●●	●●●●	Let down
EBECRYL 812	●●●●	●●●	●●●	●●●●	Grinding
EBECRYL 837	●●●●	●●●●●	●●	●●●	Grinding/Let down
EBECRYL 892	●●	●●●	●●●	●●●	Let down
EBECRYL 870/1870	●●●●	●●●●	●●	●●●●	Grinding
EBECRYL 1710	●●●	●●●	●●●●	●●●	Let down
EBECRYL 3301	●●●●●	●●●	●●	●●●●●	Grinding
EBECRYL 3420	●●●	●●●●●	●●	●●●	Grinding
EBECRYL 3700	●●●	●●●●●	●	●●●	Grinding
EBECRYL 3701	●●●	●●●	●●●	●●●	Grinding/Let down
EBECRYL 3703	●●●	●●●●	●●●	●●●	Grinding/Let down
EBECRYL 7100	●●	●●	●●●	●●	Let down
EBECRYL LEO 10501	●●●	●●●	●●	●●●●	Let down
EBECRYL LEO 10502	●●	●●●	●●●	●●●	Let down
EBECRYL LEO 10551	●●	●●●●	●●	●●●	Let down
EBECRYL LEO 10552	●●	●●●●	●●	●●	Let down
EBECRYL LEO 10553	●●	●●●	●●●	●●●	Let down
EBECRYL LEO 10601	●●●	●●●●	●●	●●●	Grinding
EBECRYL LEO 10801	●●●●	●●●	●●	●●●●	Grinding
DPGDA	●●	●●●●	●●●●	●●●	Let down
OTA 480	●●●	●●●	●●	●●●	Let down
PETRA	●●	●●●●	●●●●	●●●	Let down
TMPEOTA	●●●	●●●	●●	●●●●	Let down
TMPTA	●●	●●●●	●●●	●●●	Let down
TPGDA	●●	●●	●●	●●	Let down

## Products for screen inks

Products	Pigment wetting	Reactivity	Adhesion plastic/metal	Solvent resistance	Flexibility
<b>Oligomers / Diluting acrylates</b>					
EBECRYL 84	●●●	●●●	●●	●●●	●●●
EBECRYL 110	●●	●	●●●	●	●●●●
EBECRYL 113	●●	●	●●●	●	●●●●●
EBECRYL 114	●●	●	●●●	●	●●●●
EBECRYL 145	●●	●●	●●●	●●●	●●
EBECRYL 210	●●	●●	●●●●●	●●	●●●●
EBECRYL 220	●●	●●●●●	●●●	●●●●●	●
EBECRYL 230	●	●	●●●●●	●	●●●●●
EBECRYL 244	●●●	●●	●●●●●	●	●●●●
EBECRYL 245	●●●	●●	●●●●●	●●	●●●●
EBECRYL 264	●●●	●●●	●●●	●●●●	●●●
EBECRYL 280/15IB	●●●	●●●	●●●	●●	●●●●
EBECRYL 284	●●●	●●●	●●●●	●●●	●●●
EBECRYL 294/25	●●●	●●●●	●●●●	●●●●	●●●●
EBECRYL 303	●●	●●	●●●●●	●●	●●
EBECRYL 505	●●●	●	●●●●	●	●●●●
EBECRYL 525	●	●	●●●●●	●●	●●
EBECRYL 584	●	●	●●●●●	●●●	●●
EBECRYL 605	●	●●●●	●	●●●●●	●●●●
EBECRYL 648	●	●●●●	●	●●●●●	●●
EBECRYL 741	●●	●●	●●●●●	●●	●●●
EBECRYL 745	●●	●●	●●●●●	●●	●●●
EBECRYL 767	●●	●	●●●●	●●	●●●●
EBECRYL 810	●●	●●●	●●	●●●	●●
EBECRYL 837	●●●●	●●●●●	●●	●●●●	●
EBECRYL 1039	●●●	●●	●●●●	●●	●●●●
EBECRYL 1710	●●●	●●●	●●●●	●●●	●●
EBECRYL 3701	●●●	●●●	●●●	●●●●	●●●
EBECRYL 3703	●●●	●●●	●●●	●●●●	●●●●●
EBECRYL 3740-TP20	●	●●●●●	●●●	●●●●●	●●
EBECRYL 4820	●●●	●●	●●●●	●●●●●	●●●
EBECRYL 5129	●●	●●●●●	●●●	●●●●●	●
EBECRYL 6202	●●	●●	●●●	●●	●●●●
EBECRYL 7100	●●	●●●●	●●●●	●●●	●●
EBECRYL 8808	●●●	●●●●	●●●●	●●●●●	●●



Products	Pigment wetting	Reactivity	Adhesion plastic/metal	Solvent resistance	Flexibility
<b>Oligomers / Diluting acrylates</b>					
DPGDA	●●	●●	●●●	●●●	●●
DPHA	●●●●	●●●●●	●●	●●●●	●
HDDA	●●●	●●	●●●●	●●●	●●
IBOA	●●	●	●●●●	●	●
IRR 590	●●	●●	●●●●●	●●	●●●
IRR 591	●●	●●	●●●●●	●●	●●●●
ODA-N	●	●	●●●	●	●●●●●
PETIA	●●	●●●●	●●●●	●●●●	●
PETRA	●●	●●●●	●●●●	●●●●	●
TMPEOTA	●●●	●●●	●●	●●●	●●
TMPTA	●●	●●●●	●●●	●●●	●
TPGDA	●●	●●	●●	●●●	●●
<b>Products for water-dilutable screen inks</b>					
EBECRYL 11	●	●●	●●	●	●●●
EBECRYL 12	●	●●	●●	●	●●
EBECRYL 13	●	●●	●●	●	●●●
EBECRYL 2002	●●	●●●	●●●●●	●●●●●	●●●●
EBECRYL 2003	●●	●●●	●●●●●	●●●●●	●●●●
EBECRYL 2047	●	●●●	●●●	●●●●	●●●

## Products for inkjet

Products	Pigment wetting	Reactivity	Adhesion plastic/metal	Flow	Flexibility
<b>Oligomers / Diluting acrylates</b>					
EBECRYL 81	●●	●●●●	●●	●●●	●●●
EBECRYL 114	●●	●	●●●	●●●●	●●●●
EBECRYL 130	●●●●●	●●	●●	●●●●●	●●
EBECRYL 140	●●●	●●●●	●●	●●●●	●
EBECRYL 145	●●	●●	●●●	●●●	●●
EBECRYL 151	●●●●●	●●	●●	●●●●●	●●
EBECRYL 152	●●●	●●	●●●	●●●●	●●
EBECRYL 810	●●	●●●	●●	●●●●	●●
EBECRYL 837	●●●●	●●●●●	●●	●●●●	●
EBECRYL 853	●●	●●●	●●●	●●●	●
EBECRYL 1039	●●●	●●	●●●●	●●●●	●●●●
EBECRYL 7100	●●	●●●●	●●●●	●●●	●●
DPHA	●●●●	●●●●●	●●	●●●●	●
IBOA	●	●●	●●●●	●●●●	●●
ODA-N	●●●	●	●●	●●●●	●●●●●
OTA 480	●●●	●●●	●●	●●●	●
PETRA	●●	●●●●	●●●●	●●●	●



## Products for overprint varnishes

Products	Reactivity	Substrate wetting	Adhesion plastic/metal	Solvent resistance
<b>Oligomers / Diluting acrylates</b>				
EBECRYL 80	●●●●	●●●	●●	●●
EBECRYL 81	●●●●	●●●	●●	●●
EBECRYL 83	●●●●	●●●	●●	●●●
EBECRYL 145	●●	●●	●●●	●●●
EBECRYL 210	●●	●●	●●●●●	●●
EBECRYL 220	●●●●●	●●●	●●●	●●●●●
EBECRYL 505	●	●●●●	●●●●	●
EBECRYL 525	●	●●	●●●●●	●●●●
EBECRYL 605	●●●●	●●	●	●●●●●
EBECRYL 608	●●●●●	●●	●	●●●●●
EBECRYL 745	●●	●●●	●●●●●	●●
EBECRYL 841	●●●●	●●●	●●	●●●
EBECRYL 860	●	●●●	●	●
EBECRYL 892	●●●	●●●●	●●●	●●●●●
EBECRYL 1608	●●●●●	●●	●	●●●●●
EBECRYL 1710	●●●	●●●	●●●●	●●●
EBECRYL 3701	●●●	●●●	●●●	●●●●
EBECRYL 3740-TP20	●●●●●	●●●	●●●●	●●●●●
EBECRYL 6040	●●●●●	●●	●	●●●●●
EBECRYL 6202	●●	●●	●●●●	●●
EBECRYL 7100	●●●●	●●●	●●●●	●●●
EBECRYL LEO 10501	●●●	●●	●●●	●●●
EBECRYL LEO 10502	●●●	●●●	●●●	●●●
EBECRYL LEO 10551	●●●●	●●●	●●	●●
EBECRYL LEO 10552	●●●●	●●●	●●	●●●
EBECRYL LEO 10553	●●●	●●●	●●●	●●●
EBECRYL LEO 10601	●●●●●	●●●	●●	●●●●●
EBECRYL LEO 10801	●●●	●●●	●	●●●●
DPGDA	●●	●●	●●●	●●●
HDDA	●●	●●	●●●●	●●●
OTA 480	●●●	●●●●	●●●	●●●●
PETIA	●●●●	●●●●	●●●●	●●●●
PETRA	●●●●	●●●●	●●●●	●●●●
TMPEOTA	●●●	●●	●●●	●●●
TMPTA	●●●●	●●	●●●	●●●
TPGDA	●●	●●	●●	●●●●

# 10 Product Range

## Polyether and polyester acrylates

Polyether acrylates are known for their low viscosity and good reactivity. They exhibit a good compromise of properties and low shrinkage. Polyester acrylates cover a wide range

of viscosities (low to high) and cure speeds and they also show moderate to high shrinkage. Diluted polyester resins are recommended for adhesion on difficult substrates.

Products	Product description	Dilution	Func-tionality	MW g/mol	Viscosity mPa.s(°C)	Viscosity 60°C - mPa.s	Density g/cm <sup>3</sup>	AV mgKOH/g	OHV mgKOH/g
EBECRYL 80	Amine modified polyether acrylate	-	3	1000	3000 (25)	-	1.05	-	-
EBECRYL 81	Amine modified polyether acrylate	-	3	600	100 (25)	-	1.08	-	-
EBECRYL 83	Amine modified polyether acrylate	-	3	1000	500 (25)	-	1.11	-	-
EBECRYL 84	Amine modified polyether acrylate	-	2	300	5000 (25)	-	1.13	-	-
EBECRYL 450	Hexafunctional polyester acrylate	-	6	1600	8600 (25)	-	1.12	20	70
EBECRYL 657/1657	Tetrafunctional polyester acrylate	-	4	1500	125000 (25)	3500 (60)	1.03	20	25
EBECRYL 810	Tetrafunctional polyester acrylate	-	4	1000	500 (25)	-	1.09	20	-
EBECRYL 811	Tetrafunctional polyester acrylate	-	4	NA	75000 (25)	1850 (60)	1.14	8	-
EBECRYL 812	Tetrafunctional polyester acrylate	-	4	800	8000 (25)	325 (60)	1.14	8	-
EBECRYL 830	Hexafunctional polyester acrylate	-	6	1500	50000 (25)	-	1.18	30	-
EBECRYL 837	Polyester resin	-	6	2700	800 (25)	-	1.14	-	-
EBECRYL 841	Amine modified polyether acrylate	-	3.5	-	600 (25)	-	1.1	-	-
EBECRYL 845	Tetrafunctional polyester acrylate	20 OTA	4	1500	20000 (25)	-	1.11	20	-
EBECRYL 846	Modified polyester acrylate	-	6	1100	45000 (25)	-	1.10	10	-
EBECRYL 859	High Mw polyester acrylate	-	6	3000	36000 (25)	900 (60)	1.11	3	-
EBECRYL 870 / 1870	Hexafunctional polyester acrylate	-	6	1500	48000 (25)	-	1.08	15	30
EBECRYL LEO 10551	Amine modified polyether acrylate	-	2.5	500	75 (25)	-	1.09	-	-
EBECRYL LEO 10552	Amine modified polyether acrylate	-	3.5	1000	450 (25)	-	1.12	-	-
EBECRYL LEO 10801	Hexafunctional polyester acrylate	-	6	1500	48000 (25)	-	1.08	-	-

## Diluted polyester resins

Products	Product description	Dilution	Func-tionality	MW g/mol	Viscosity 25°C-mPa.s	Viscosity 60°C - mPa.s	Density g/cm <sup>3</sup>	AV mgKOH/g	OHV mgKOH/g
EBECRYL 436	Chlorinated polyester resin	40 TMPTA	-	5000	90000 (25)	1500 (60)	1.28	25	-
EBECRYL 438	Chlorinated polyester resin	40 OTA 480	-	5000	90000 (25)	1500 (60)	1.26	25	-
EBECRYL 446	Chlorinated polyester resin	32 TMPTA	-	4400	100000 (25)	1800 (60)	1.14	25	-
EBECRYL 505	Polyester resin	40 TPGDA	-	1000	2000 (25)	-	1.22	30	-
EBECRYL 525	Polyester resin	40 TPGDA	-	1000	40000 (25)	-	1.21	25	40
EBECRYL 584	Chlorinated polyester resin	40 HDDA	-	2700	2000 (25)	-	1.32	25	40
EBECRYL 586	Chlorinated polyester resin	40 TMPTA	-	2700	45000 (25)	-	1.35	20	NA
EBECRYL 9436	Chlorinated polyester resin	32 TMPTA	-	1500	80000 (25)	-	1.2	1.5	-



Colour Gardner	Adhesion	Solvent resistance	Reactivity	Flexibility	Yellowing	Pigment wetting	Key features
200A	●●	●●	●●●●	●●●	●●	●●	High reactivity. Nitrogen content: 1.5%.
2	●●	●●	●●●●	●●●	●●	●●	High reactivity combined with good diluting power. Nitrogen content: 1.4%.
2	●●	●●●●	●●●●	●●●	●●	●●	High reactivity, low viscosity and low residual odour. Non-irritating. Nitrogen content: 1.0%.
5	●●	●●●●	●●●	●●●	●●●	●●●	Good adhesion to multiple plastic substrates.
dark	●●●	●●	●●●●	●	●	●●●●	Very good lithographic behavior, good pigment wetting and high reactivity.
dark	●	●	●●●	●●	●	●●●●	Very good lithographic behavior and pigment wetting. (EBECRYL 1657 is low odour version of EBECRYL 657)
2	●●	●●●●	●●●	●●	●●	●●●●	Very good lithographic behavior, good pigment wetting and low intrinsic viscosity.
1	●●	●	●●	●●	●	●●	Good adhesion to plastics and good cure response. Recommended for waterless offset inks.
1	●●●	●●	●●●	●●	●●	●●●	Designed for flexographic applications. Good adhesion.
3	●●●	●●●●	●●●●	●	●●	●●●●	Very good reactivity and high scratch resistance.
3	●●●	●●●●	●●●●●	●	●●●	●	Good reactivity, high hardness and low viscosity.
200A	●●	●●●●	●●●●	●●●	●●	●●	High reactivity, low viscosity.
dark	●	●	●●	●●	●	●●●●	Very good lithographic behavior and pigment wetting.
dark	●●	●●●	●●●●	●	●●	●●	High reactivity.
yellow	●	●●●	●●●●●	●	●	●●●●●	Excellent lithographic behavior on high speed presses. High reactivity and very good pigment wetting.
dark	●●	●●●	●●●●	●	●	●●●●	High reactivity. Very good lithographic behavior and pigment wetting. (EBECRYL 1870 is a low odour version of EBECRYL 870)
2	●●	●●	●●●●	●●●	●●	●●	High reactivity, good flexibility and good diluting power. Low extractability and low odour.
2	●●	●●●	●●●●	●●●	●●	●●	High reactivity, good flexibility and high gloss. Low extractability and low odour.
dark	●●	●●●	●●●●	●	●	●●●●	Excellent lithographic behaviour, high reactivity and good pigment wetting. Low extractability and low odour.

Colour Gardner	Adhesion	Solvent resistance	Reactivity	Flexibility	Yellowing	Pigment wetting	Key features
5	●●●●	●	●●●	●●	●	●	Good adhesion to metals and plastics.
5	●●●●	●	●●	●●	●	●	Good adhesion to metals and plastics.
5	●●●●	●	●●●	●●	●	●	Good adhesion to metals and plastics. Improved lithographic behavior.
1	●●●●	●	●	●●●●	●	●●●	Improves adhesion on plastic substrates and low shrinkage.
200A	●●●●●	●●	●	●●	●●	●	Excellent adhesion to difficult substrates. Recommended for laminating adhesives.
3	●●●●●	●●●	●	●●	●	●	Medium reactivity and good adhesion to plastics.
3	●●●●●	●●●	●●	●	●	●	High reactivity and good adhesion to plastics.
5	●●●●	●	●●	●●	●	●	Good adhesion to plastic, better pigment wetting and flexible.

# 12 Product Range (continued)

## Urethane acrylates

Urethane acrylates are the most versatile products within the range. They are 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 and cure speed. 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.

Products	Product description	Dilution	Func-tionality	MW g/mol	Viscosity mPa.s(°C)	Density g/cm <sup>3</sup>	Colour Gardner
EBECRYL 210	Aromatic difunctional urethane acrylate	-	2	1500	3900 (60)	1.11	2
EBECRYL 220	Aromatic hexafunctional urethane acrylate	-	6	1000	28500 (25)	1.22	2
EBECRYL 230	Aliphatic difunctional urethane acrylate	-	2	5000	40000 (25)	1.08	150A
EBECRYL 244	Aliphatic difunctional urethane acrylate	12 HDDA	2	2000	8000 (60)	1.12	2
EBECRYL 245	Aliphatic difunctional urethane acrylate	25 TPGDA	2	2000	2500 (60)	1.10	2
EBECRYL 264	Aliphatic trifunctional urethane acrylate	15 HDDA	3	2000	45000 (25)	1.12	2
EBECRYL 265	Aliphatic trifunctional urethane acrylate	25 TPGDA	3	2000	35000 (25)	1.13	2
EBECRYL 270	Aliphatic difunctional urethane acrylate	-	2	1500	3000 (60)	1.10	2
EBECRYL 280/151B	Aliphatic difunctional urethane acrylate	15 IBOA	6	2000	2500 (60)	1.10	2
EBECRYL 284	Aliphatic difunctional urethane acrylate	12 HDDA	2	1200	2100 (60)	1.18	2
EBECRYL 285	Aliphatic difunctional urethane acrylate	25 TPGDA	2	1200	23000 (25)	1.13	2
EBECRYL 294/25	Aliphatic trifunctional urethane acrylate	25 HDDA	3	1500	700 (60)	1.11	2
EBECRYL 1290	Aliphatic hexafunctional urethane acrylate	-	6	1000	2000 (60)	1.19	1
EBECRYL 2002	Water soluble aliphatic urethane acrylate	10 TPGDA	2	2500	25000 (25)	1.10	2
EBECRYL 2003	Water soluble aromatic urethane acrylate	10 TPGDA	2	2500	3000 (60)	1.14	3
EBECRYL 4820	Aliphatic trifunctional urethane acrylate	35 HDDA	3	1900	3300 (25)	1.08	1
EBECRYL 5129	Aliphatic hexafunctional urethane acrylate	-	6	800	700 (60)	1.18	2
EBECRYL 6202	Aromatic difunctional urethane acrylate	25 DPGDA	2	1500	8000 (25)	1.10	2
EBECRYL 8402	Aliphatic difunctional urethane acrylate	-	2	1000	12500 (25)	1.16	2
EBECRYL 8808	Aliphatic difunctional urethane acrylate	-	2	-	17000 (60)	1.18	2
IRR 590	Aliphatic difunctional urethane acrylate	-	2	9000	35000 (60)	1.04	2



Adhesion	Solvent resistance	Reactivity	Flexibility	Yellowing	Pigment wetting	Key features
●●●●●	●●	●●	●●●●●	●●	●	Undiluted, good flexibility and general purpose use.
●	●●●●●	●●●●●	●	●●	●●●	Fast cure, high hardness and solvent resistance.
●●●●●	●	●	●●●●●	●●●●●	●	Undiluted and high molecular weight resin. Very high flexibility.
●●●●●	●	●●	●●●●●	●●●●●	●●●	High flexibility and non-yellowing.
●●●●●	●●	●●	●●●●●	●●●●●	●●●	High flexibility and non-yellowing.
●●●	●●●●●	●●●●●	●●●	●●●●●	●●●	Good reactivity, good abrasion resistance and non-yellowing.
●●●	●●●●●	●●●●●	●●●	●●●●●	●●●	Good reactivity, good abrasion resistance and non-yellowing.
●●●●●	●●	●	●●●●●	●●●●●	●●	Undiluted. Good flexibility, light stability and adhesion.
●●●	●●	●●●	●●●●●	●●●●●	●●●	Good toughness, light stability and adhesion.
●●●●●	●●●	●●●	●●●	●●●●●	●●●	Good exterior durability, good toughness and resistance.
●●●●●	●●●	●●●	●●●	●●●●●	●●●	Good exterior durability, good toughness and resistance.
●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●	High chemical and stain resistance. Excellent outdoor resistance.
●	●●●●●	●●●●●	●	●●	●●	Fast cure, high hardness, high solvent resistance and good exterior durability.
●●●●●	●●●●●	●●●	●●●●●	●●●●●	●●	Fast cure response, good flexibility and good adhesion. Water uptake: 70%.
●●●●●	●●●●●	●●●	●●●●●	●●	●●	Fast cure response, good flexibility and good adhesion. Water uptake: 80%.
●●●●●	●●●●●	●●	●●	●●●●●	●●●	Good exterior durability, good toughness and resistance.
●●	●●●●●	●●●●●	●●	●●●●●	●●	Good scratch and abrasion resistance. More flexible than EBECRYL 1290.
●●●	●●	●●●	●●●●●	●●	●●●	Good flexibility and adhesion.
●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●	Undiluted. Good flexibility and toughness. Non-yellowing. Low shrinkage.
●●●●●	●●●●●	●●●●●	●●	●●●●●	●●●	Excellent exterior durability and toughness. Non-yellowing.
●●●●●	●●●	●●●	●●●●●	●●●●●	●●●●●	High elongation and good adhesion.

# 14 Product Range (continued)

## Epoxy acrylates

Epoxy acrylates are typically characterized by very fast cure, good hardness, excellent chemical resistance, high viscosity and high gloss.

Products	Product description	Dilution	Functionality	MW g/mol	Viscosity mPa.s(°C)	Density g/cm <sup>3</sup>	AV mgKOH/g	OHV mgKOH/g
EBECRYL 600	Standard bisphenol A epoxy acrylate	-	2	500	3000 (60)	1.13	2	220
EBECRYL 605	Standard bisphenol A epoxy acrylate	25 TPGDA	2	500	7500 (25)	1.17	2	190
EBECRYL 608	Standard bisphenol A epoxy acrylate	25 OTA 480	2	500	25000 (25)	1.15	2	195
EBECRYL 645	Modified bisphenol A epoxy diacrylate	25 TPGDA	2	500	16500 (25)	1.13	2	-
EBECRYL 648	Modified bisphenol A epoxy diacrylate	25 OTA 480	2	500	47500 (25)	1.14	2	-
EBECRYL 860	Epoxidised soya bean acrylate	-	2	1200	25000 (25)	1.03	15	-
EBECRYL 1606	Standard bisphenol A epoxy acrylate	20 TMPTA	2	500	3000 (25)	1.15	2	-
EBECRYL 1608	Standard bisphenol A epoxy acrylate	15 OTA 480	2	500	1000 (60)	1.17	2	205
EBECRYL 3301	Modified bisphenol A epoxy acrylate	25 DPGDA	2	500	8000 (25)	1.10	2	-
EBECRYL 3420	Low viscosity, modified epoxy acrylate	-	2	500	22000 (25)	1.14	2	-
EBECRYL 3608	Fatty acid modified epoxy acrylate	15 OTA 480	2	550	1000 (60)	1.14	2	200
EBECRYL 3700	Standard bisphenol A epoxy acrylate	-	2	500	4000 (60)	1.14	2	-
EBECRYL 3701	Modified bisphenol A epoxy acrylate	-	2	850	7000 (60)	1.14	5	-
EBECRYL 3702	Fatty acid modified epoxy acrylate	-	2	500	3600 (60)	1.14	3	-
EBECRYL 3703	Amine modified bisphenol A epoxy acrylate	-	2	850	4250 (60)	1.17	5	-
EBECRYL 3708	Modified bisphenol A epoxy acrylate	-	2	1300	4200 (60)	1.16	3	-
EBECRYL 3740-TP20	Standard bisphenol A epoxy acrylate	20 TPGDA	2	500	2500 (60)	1.14	3	-
EBECRYL 6040	Modified bisphenol A epoxy acrylate	-	2	500	25000 (25)	1.14	2	195
EBECRYL LEO 10601	Modified epoxy acrylate	-	2	500	200000 (25)	1.14	1	-



Colour Gardner	Adhesion	Solvent resistance	Reactivity	Flexibility	Yellowing	Pigment wetting	Key features
2	●	●●●●●	●●●●●	●●	●	●	Fast cure, high gloss and excellent solvent resistance. Low color. Low irritancy.
2	●	●●●●●	●●●●●	●●	●	●	Fast cure, high gloss and excellent solvent resistance. Low color.
2	●	●●●●●	●●●●●	●●	●	●	Fast cure, high gloss and excellent solvent resistance. Low color.
3	●	●●●●●	●●●●●	●●	●	●●●	Good pigment wetting, fast cure, high gloss, excellent solvent and good water resistance.
3	●	●●●●●	●●●●●	●●	●	●●●	Good pigment wetting, fast cure, high gloss, excellent solvent and good water resistance.
10	●	●	●	●●●●●	●	●●	Hot foil stamping.
1	●●	●●●●●	●●●●●	●●	●	●●	Fast cure, high gloss and excellent solvent resistance. Low color.
2	●	●●●●●	●●●●●	●●	●	●●	Fast cure, high gloss and excellent solvent resistance. Low color. Low irritancy.
7	●	●●●●●	●●●●●	●●	●	●●●●●	Excellent pigment wetting combined with suitable viscosity for three roll mill grinding.
3	●●	●●●●●	●●●●●	●●●	●	●●	Flexible and good pigment wetting.
2	●	●●●	●●●	●●	●	●●	Good lithographic behavior.
3	●	●●●●●	●●●●●	●●	●	●●	Fast cure, high gloss and excellent solvent resistance. Good pigment wetting properties.
6	●●●	●●●●●	●●●	●●●	●	●●●	Flexible and good adhesion to plastics.
6	●	●●●	●●●	●●	●	●●●	Good lithographic behavior and pigment wetting.
5	●●●	●●●●●	●●●●●	●●●	●	●●●	Very good flexibility, high reactivity and good adhesion to plastics.
4	●●●●	●●●	●●●	●●●●●	●	●●●	Very good flexibility and adhesion to plastics.
2	●●●	●●●●●	●●●●●	●●	●	●	Fast cure, high gloss and excellent solvent resistance. Low color. Low irritancy.
2	●●	●●●●●	●●●●●	●●	●	●	Low viscosity, high surface resistance, high gloss and good solvent resistance.
3	●●	●●●●●	●●●●●	●●●	●	●●	Fast cure, flexible and good pigment wetting. Low extractability and low odour.

# 16 Product Range (continued)

## Acrylic acrylates

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

excellent weatherability to coating. They also have good pigment wetting characteristics and can be used as dispensing resins. These oligomers are easy to matt.

Products	Product description	Dilution	Viscosity mPa.s(°C)	Density g/cm <sup>3</sup>	AV mgKOH/g	OHV mgKOH/g	Colour Gardner
EBECRYL 303	Hydrocarbon acrylate oligomer	45 HDDA	900 (25)	1.10	-	-	0.5
EBECRYL 740/40TP	Acrylic oligomer	40 TPGDA	8500 (60)	1.05	-	-	3
EBECRYL 741	Acrylic oligomer	45 HDDA	3500 (25)	1.05	-	-	4
EBECRYL 745	Acrylic oligomer	25 TPGDA / 25 HDDA	20000 (25)	1.05	1	40	3
EBECRYL 767	Acrylic oligomer	25 IBOA	8500 (60)	1.08	-	-	3
EBECRYL 1710	Acrylic oligomer	60 HDDA	26000 (25)	1.04	1	-	1
IRR 591	Acrylic oligomer	70 IBOA	10000	1.03	-	-	1

## EBECRYL LEO resins

The EBECRYL LEO resins (Low Extractable and Odour) have been designed to allow ink formulators to develop inks that meet the European regulations for food packaging. This means they have a low odour with minimal taste transfer and they do not contain certain components that should be avoided in inks and OPVs for food packaging.

These resins also enhance the ability to achieve high gloss and excellent print quality on a variety of packaging materials such as labels, lidding films and foils, wrappers, beverage cartons and artificial sausage casings.

Products	Chemical description	Viscosity mPa.s (°C)	Colour Gardner	Density g/ml	Acid value mg KOH/g
EBECRYL LEO 10501	Trifunctional diluting acrylate	80 (25)	200 Apha	1.10	0,5
EBECRYL LEO 10502	Polymeric tetrafunctional acrylate	170 (25)	2	1.15	5
EBECRYL LEO 10551	Amine modified polyether acrylate	450 (25)	2	1.12	-
EBECRYL LEO 10552	Amine modified polyether acrylate	450 (25)	2	1.12	-
EBECRYL LEO 10553	Amine modified polymeric tetrafunctional acrylate	220 (25)	2	1.12	-
EBECRYL LEO 10601	Modified epoxy acrylate	200000 (25)	3	1.14	1
EBECRYL LEO 10801	Hexafunctional polyester acrylate	48000 (25)	Dark	1.08	< 15



Adhesion	Solvent resistance	Reactivity	Flexibility	Pigment wetting	Key features
●●●●●	●●	●●	●●	●●	Very good adhesion to plastics.
●●●●●	●●	●●	●●●	●●	Very good adhesion to plastics. Good weathering.
●●●●●	●●	●●	●●●	●●	Excellent adhesion to a wide range of plastic substrates combined with a low viscosity.
●●●●●	●●	●●	●●●	●●	Very good adhesion to plastics. Good weathering.
●●●●●	●●	●	●●●●	●●	Very good adhesion to plastics. Good weathering.
●●●●●	●●●	●●●	●●	●●●	Very good adhesion combined with good reactivity.
●●●●●	●●●	●●●	●●●●	●●●	Good adhesion and high flexibility.

Epoxy value %	Mol.Weight g/mol	Functionality	Target applications	Key features and performance
-	470	3	Flexographic inks, lithographic inks and OPVs	High cure response and good flexibility.
-	750	4	Flexographic inks, lithographic inks and OPVs	Very high cure response, low viscosity, good flexibility and high gloss.
-	1000	3.5	Flexographic inks and OPVs	Very high cure response, low viscosity, good flexibility and high gloss.
-	1000	3.5	Flexographic inks and OPVs	Very high cure response, good flexibility and high gloss.
-	780	3.4	Flexographic inks and OPVs	Very high cure response, good flexibility and high gloss.
0.05	500	2	Flexographic inks, lithographic inks and OPVs	Very high cure response, excellent solvent resistance, high gloss and good pigment wetting.
-	1500	6	Flexographic inks, lithographic inks and OPVs	High cure response, very good water balance, excellent rheological properties and good pigment wetting.

# 18 Product Range (continued)

## Diluting acrylates

As RADCURE resin formulations are normally solvent-free, diluting acrylates are added to reduce the viscosity for better processing and to improve crosslinking. Reactivity, mechanical

and chemical resistance and shrinkage will increase with the increasing functionality of the diluting acrylate, while flexibility and adhesion will decrease.

Products	Product description	MW g/mol	-C=C- meq/g	Viscosity mPa.s(°C)	Density g/cm <sup>3</sup>	AV mgKOH/g	OHV mgKOH/g	Colour Gardner
<b>Monofunctional products</b>								
EBECRYL 110	Ethoxylated phenol acrylate	236	4.2	20 (25)	1.12	1	15	5
EBECRYL 113	Aliphatic monoacrylate	228	4.4	120 (25)	0.97	1	-	3
EBECRYL 114	Ethoxylated phenol acrylate	192	5.2	10 (25)	1.10	1	-	200A
EBECRYL 1039	N-butyl 1,2 (acryloyloxy) ethyl carbamate	215	4.6	25 (25)	1.07	-	-	100A
ODA-N	Octyl and decyl acrylate mixture	200	5	3 (25)	0.88	1	-	3
IBOA	Isobornyl acrylate	208	4.8	9 (25)	0.98	1	-	50A
<b>Difunctional products</b>								
EBECRYL 11	Polyethylene glycol diacrylate	740	2.7	120 (25)	1.12	17	-	50A
EBECRYL 13	Polyethylene glycol diacrylate	500	2.8	60 (25)	1.11	3	-	2
EBECRYL 130	Tricyclodecanediol diacrylate	300	6.6	160 (25)	1.01	1	30	4
EBECRYL 145	Propoxylated neopentylglycol diacrylate	328	6.1	20 (25)	1.01	1	40	200A
EBECRYL 150	Diacrylated bisphenol A derivative	512	3.9	1400 (25)	1.14	5	30	2
EBECRYL 151	Modified diacrylate	280	7.1	125 (25)	1.09	1	35	5
EBECRYL 152	Modified diacrylate	290	6.9	20 (25)	1.07	1	30	2
EBECRYL 153	Diacrylated bisphenol A derivative	400	5	115 (25)	1.1	3	35	3
DPDGA	Dipropylene glycol diacrylate	242	8.3	10 (25)	1.06	1	40	150A
HDDA	Hexanediol diacrylate	226	8.8	10 (25)	1.03	1	15	40A
TPGDA	Tripropylene glycol diacrylate	300	6.2	15 (25)	1.05	1	40	50A

<sup>1</sup>Reactivity: comparison between products of same functionality



Adhesion	Solvent resistance	Reactivity <sup>1</sup>	Flexibility	Yellowing	Key features
●●●●	●	●	●●●●	●	High flexibility.
●●●●	●	●	●●●●	●●●●●	Low odour, good flexibility and adhesion. Xi free.
●●●●	●	●●	●●●●	●	Very good adhesion to plastic and metal substrates.
●●●●	●●	●●●●	●●●●	●●●●	Urethane monoacrylate with low viscosity. Excellent flexibility and adhesion.
●●●●	●	●	●●●●	●●●	Excellent flexibility and good water resistance. Good adhesion to non-polar substrates.
●●●●	●	●	●	●●●	Low viscosity and color. High Tg.
●●	●	●●	●●●●	●●●●	Completely miscible with water and good flexibility. For screen inks and paper coatings.
●●	●●	●●●	●●●●	●●●	Completely miscible with water and good flexibility. For screen inks and paper coatings.
●●	●●●	●●	●	●●●●	High Tg, low shrinkage and good adhesion to rigid substrates.
●●●●	●●●●	●●	●●	●●●	Xi free aliphatic difunctional acrylate of low surface tension.
●	●●●	●●●	●●	●●	High reactivity and good scratch resistance.
●●●●	●●●●	●●●	●●	●●●●	Excellent pigment wetting combined with low viscosity.
●●●●	●●●●	●●	●●	●●●●	Let down for inkjet inks. Good flow and leveling on wide range of plastic substrates.
●●●●	●●●●	●●●	●●	●●	Let down for flexo inks. High reactivity.
●●●●	●●●●	●●	●●	●●●	Good cure speed and toughness.
●●●●	●●●●	●●	●●	●●●●	High diluting power, excellent adhesion and good weathering properties.
●●	●●●	●●	●●	●●●	Good cure speed and flexibility.

## Diluting acrylates (continued)

Products	Product description	MW g/mol	-C=C- meq/g	Viscosity mPa.s(°C)	Density g/cm <sup>3</sup>	AV mgKOH/g	OHV mgKOH/g	Colour Gardner
<b>Trifunctional products</b>								
EBECRYL 12	Polyether triacrylate	782	3.8	155 (25)	1.11	5	-	4
EBECRYL 53	Propoxylated glycerol triacrylate	480	6.2	90 (25)	1.08	1	60	60A
EBECRYL 853	Ethoxylated trimethylol propane triacrylate	470	-	80 (25)	1.1	-	-	200 A
EBECRYL 2047	Acrylated trifunctional resin	570	5.3	400 (25)	1.09	15	-	3
EBECRYL LEO 10501	Ethoxylated trimethylol propane triacrylate	470	-	80 (25)	1.10	0.5	-	200 A
OTA 480	Propoxylated glycerol triacrylate	480	6.2	90 (25)	1.08	1	60	60A
TMPEOTA	Ethoxylated trimethylol propane triacrylate	428	6.5	80 (25)	1.09	1	25	200A
TMPTA	Trimethylol propane triacrylate	296	9.8	115 (25)	1.11	1	30	50A
<b>Tetrafunctional, hexafunctional products</b>								
Products	Product description	MW g/mol	-C=C- meq/g	Viscosity mPa.s(°C)	Density g/cm <sup>3</sup>	AV mgKOH/g	OHV mgKOH/g	Colour Gardner
EBECRYL 40	Polyether tetraacrylate	571	7.0	160 (25)	1.15	0.5	60	2
EBECRYL 140	Ditrimethylol propane tetraacrylate	438	9.1	1000 (25)	1.11	10	30	400A
EBECRYL 892	Polyether tetraacrylate	-	-	140 (25)	1.15	-	-	2
EBECRYL LEO 10502	Polyether tetraacrylate	750	-	170 (25)	1.15	5	-	2
DPHA	Dipentaerythritol hexaacrylate	578	10.4	16000 (25)	1.18	8	60	3
PETIA	Mixture of pentaerythritol tri- & tetraacrylate	298	11.1	1100 (25)	1.18	10	115	200A
PETRA	Mixture of pentaerythritol tri- & tetraacrylate	298	11.1	850 (25)	1.18	1	100	75A

\*Reactivity: comparison between products of same functionality



Adhesion	Solvent resistance	Reactivity <sup>1</sup>	Flexibility	Yellowing	Key features
●●	●	●●	●●	●●●	High flexibility. Can be used in water-based systems.
●●	●●●	●●●	●	●●●	Low odour version of OTA 480.
●●	●●●	●●●	●●	●●●●	Xi free low odour.
●●●	●●●●	●●●	●●●	●●●	Good flexibility and high reactivity.
●●	●●●	●●●	●●	●●●●	Good flexibility, high gloss and high reactivity.
●●	●●●	●●●	●	●●●	Low viscosity and fast cure speed.
●●	●●●	●●●	●●	●●●●	More flexible than TMPTA. Good hardness, high gloss and fast cure speed.
●●●	●●●	●●●	●	●●●●	High cure speed, chemical and scratch resistance.

Adhesion	Solvent resistance	Reactivity <sup>1</sup>	Flexibility	Yellowing	Key features
●●●	●●●	●●●	●●	●●●	Low shrinkage and high reactivity.
●●	●●●	●●●●	●	●●●	High reactivity and good hardness. Xi free.
●●●	●●●	●●●	●●	●●●	Low color, low viscosity and high reactivity.
●●●	●●●	●●●	●●	●●●	Low shrinkage, good flexibility, high gloss and high reactivity.
●●	●●●●	●●●●●	●	●●●	Very high reactivity. High hardness and high scratch resistance.
●●●●	●●●●	●●●●	●	●●●	Hard, good chemical resistance and adhesion.
●●●●	●●●●	●●●●	●	●●●	Low color and low viscosity.

## Additives

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

Products	Product description	Viscosity mPa.s(°C)	Density g/cm <sup>3</sup>	AV mg KOH/g	Colour Gardner	Lithography	Flexography
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### Stabilizers

ADDITOL™ S110*	In-can stabilizer	450 (60)	-	-	Dark brown	✓	✓
ADDITOL S120	In-can stabilizer	100 (25)	-	-	Pale	✓	✓
ADDITOL S130	In-can stabilizer	100 (25)	-	-	Pale	✓	✓

### Adhesion promoters

EBECRYL 168	Methacrylated acidic compound	1350 (25)	1.28	290	3		
EBECRYL 170	Acrylated acidic compound	3000 (25)	1.33	300	6		
EBECRYL 171	Methacrylated acidic compound	1200 (25)	-	320	3		

### Amine functional acrylate co-initiators

EBECRYL 7100	Amine functional acrylate co-initiator	1000 (25)	1.10	-	4		✓
EBECRYL P115	Tertiary amine co-initiator	20 (25)	0.99	-	2		
EBECRYL P116	Amine functional acrylate co-initiator	20 (25)	0.99	-	2		✓

### Flow and leveling agents

EBECRYL 350	Silicone diacrylate	350 (25)	1.05	7	10		✓
EBECRYL 1360	Silicone hexaacrylate	2100 (25)	1.11	25	10		✓
MODAFLOW™ 2100*	Defoaming agent	8000 (25)	1.01	-	Pale	✓	✓
MODAFLOW 9200	Silicone free leveling agent	4000 (25)	-	-	Pale		✓

### Miscellaneous

EBECRYL 341	Silicone free slip agent	Paste	-	-	White		
EBECRYL 373	Anti-misting additive	Paste	-	-	Yellow	✓	

### Photoinitiators

Products	Product description	Type	State	Yellowing	Lithography
EBECRYL P37	Modified benzophenone	H-abstraction	liquid		
EBECRYL P38	Acrylated derivative of benzophenone	H-abstraction	liquid		
EBECRYL P39	Acrylated derivative of benzophenone	H-abstraction	liquid		

\* ADDITOL™ additives

\* MODAFLOW™ flow modifiers



Inkjet	Screen	OPV	Addition level %	Key features
✓	✓		1 - 3	Suitable for grinding and in-can stabilisation of pigmented systems. No negative impact on reactivity.
✓	✓	✓	1 - 2	Universal use, for grinding and in-can stabilisation of pigmented systems and clear coatings. No negative impact on reactivity.
✓	✓	✓	1 - 2	In-can stabilisation of pigmented systems and clear coatings, including metallic pigments.
	✓	✓	1 - 5	Adhesion promoter for metals and glass.
	✓	✓	5 - 8	Adhesion promoter for metals.
	✓	✓	5 - 8	Adhesion promoter for metals, glass and plastic.
✓	✓	✓	10 - 15	Highly efficient co-initiator. Excellent adhesion to plastic substrates. Nitrogen content: 3.5%. Can be used as a resin.
	✓	✓	5 - 8	Highly efficient co-initiator. Nitrogen content: 4.9%.
✓	✓	✓	5 - 10	EBECRYL P115 made with a cleaner process.
	✓	✓	0.5 - 2	Copolymerisable, substrate wetting and slip additive.
	✓	✓	0.5 - 2	Copolymerisable, substrate wetting and slip additive. Recommended for electron beam applications.
	✓	✓	0.5 - 2	Silicone free, substrate wetting and slip additive. Medium compatibility and good defoamer.
✓	✓	✓	0.5 - 2	Silicone free leveling agent with excellent compatibility.
		✓	2 - 5	Silicone free slip additive for use in OPVs. Allows overprintability.
			3 - 5	EBECRYL 373 reduces the misting of paste inks.

Inkjet	Flexography	Screen	OPV	Key features
	✓		✓	Low odour.
			✓	Photoinitiator for low odour UV coatings.
	✓		✓	Photoinitiator for low odour UV coatings.

# 24 Product Range (continued)

## Photoinitiators

Our ADDITOL product range includes the most commonly used photoinitiators. The table below shows the typical application areas for each of the ADDITOL photoinitiators.

		State (Solid/Liquid)	Clear - Wood	Pigmented - Wood	Clear - Plastics/Metal	Pigmented plastics/Metal	Over Print Varnish	Inks	Non Yellowing	Synergist Needed	Remarks
ADDITOL BCPK	Blend of Benzophenone & CPK 50:50	L	X	O	X	O	X	O		X	Multipurpose photoinitiator, good surface cure with amine synergist.
ADDITOL BDK	2,2-dimethoxy-1,2diphenyl-ethan-1-one	S	X	O	X	O	O	O			Multipurpose photoinitiator.
ADDITOL BP	Benzophenone	S	X	O	X	O	X	O		X	Multipurpose photoinitiator, good surface cure with amine synergist.
ADDITOL CPK	1-hydroxy-cyclohexylphenyl-ketone	S	X	O	X	O	X		X		Non yellowing systems.
ADDITOL DMMTA	2-menthyl-1-[4-(methylthio)phenyl] 2-morpholino-propane-1-one	S		X		X		X			Curing of pigmented systems (other than white).
ADDITOL HDMAP	2-hydroxy-2-methyl-1phenyl propanone	L	X	O	X	O	O	O	O		Multipurpose photoinitiator.
ADDITOL ITX	Isoprophyl thioxanthone (2 and 4 isomer mixture)	S		X		X		X		X	Curing of pigmented systems (other than white).
ADDITOL MBF	Methylbenzoylformate	L	X	O	X	O	O	O	O		Low odour Multipurpose photoinitiator.
ADDITOL PBZ	Phenyl Benzophenone	S	X	O	X	O	X	O		X	Low odour photoinitiator, good surface cure with amine synergist.
ADDITOL TPO	2,4,6-trimethylbenzoyl diphenyl phosphinoxide	S		X	X	X		O	X		Effident cure of white pigmented and thick clear coatings.
ADDITOL EHA	2-ethylhexyl-4-dimethylaminobenzoate	L		O		O		X			Amine synergist, mainly for ink.
ADDITOL EPD	Ethyl-4-(dimethylamino) benzoate	S		O		O		X			Amine synergist, mainly for ink.

X = highly recommended, O = used in combination, S = solid, L = Liquid, International version



Products	Page	Products	Page	Products	Page
ADDITOL BCPK	24	EBECRYL 284	6, 12	EBECRYL 2047	7, 20
ADDITOL BDK	24	EBECRYL 285	12	EBECRYL 3301	5, 14
ADDITOL BP	24	EBECRYL 294/25	6, 12	EBECRYL 3420	4, 5, 14
ADDITOL CPK	24	EBECRYL 303	6, 16	EBECRYL 3608	14
ADDITOL DMMTA	24	EBECRYL 341	22	EBECRYL 3700	4, 5, 14
ADDITOL HDMP	24	EBECRYL 350	22	EBECRYL 3701	4, 5, 6, 9, 14
ADDITOL ITX	24	EBECRYL 373	22	EBECRYL 3702	4, 14
ADDITOL MBF	24	EBECRYL 436	4, 10	EBECRYL 3703	5, 6, 14
ADDITOL PBZ	24	EBECRYL 438	4, 10	EBECRYL 3708	4, 14
ADDITOL TPO	24	EBECRYL 446	4, 10	EBECRYL 3740-TP20	4, 6, 9, 14
ADDITOL EHA	24	EBECRYL 450	4, 5, 10	EBECRYL 4820	6, 12
ADDITOL EPD	24	EBECRYL 505	6, 9, 10	EBECRYL 5129	6, 12
ADDITOL S110	22	EBECRYL 525	4, 6, 9, 10	EBECRYL 6040	4, 9, 14
ADDITOL S120	22	EBECRYL 584	6, 10	EBECRYL 6202	6, 9, 12
ADDITOL S130	22	EBECRYL 586	10	EBECRYL 7100	5, 6, 8, 9, 22
EBECRYL 11	7, 18	EBECRYL 600	14	EBECRYL 8402	12
EBECRYL 12	7, 20	EBECRYL 605	6, 9, 14	EBECRYL 8808	6, 12
EBECRYL 13	7, 18	EBECRYL 608	9, 14	EBECRYL 9436	4, 10
EBECRYL 40	5, 20	EBECRYL 645	14	EBECRYL LEO 10501	4, 5, 9, 16, 20
EBECRYL 53	5, 20	EBECRYL 648	4, 5, 6, 14	EBECRYL LEO 10502	4, 5, 9, 16, 20
EBECRYL 80	5, 9, 10	EBECRYL 657/1657	4, 10	EBECRYL LEO 10551	5, 9, 10, 16
EBECRYL 81	5, 8, 9, 10	EBECRYL 740/40TP	16	EBECRYL LEO 10552	5, 9, 10, 16
EBECRYL 83	5, 9, 10	EBECRYL 741	6, 16	EBECRYL LEO 10553	5, 9, 16
EBECRYL 84	5, 6, 10	EBECRYL 745	6, 9, 16	EBECRYL LEO 10601	4, 5, 9, 14, 16
EBECRYL 110	6, 18	EBECRYL 767	6, 16	EBECRYL LEO 10801	4, 5, 9, 10, 16
EBECRYL 113	6, 18	EBECRYL 810	5, 6, 8, 10	EBECRYL P37	22
EBECRYL 114	6, 8, 18	EBECRYL 811	4, 10	EBECRYL P38	22
EBECRYL 130	5, 8, 18	EBECRYL 812	5, 10	EBECRYL P39	22
EBECRYL 140	4, 5, 8, 20	EBECRYL 830	10	EBECRYL P115	22
EBECRYL 145	5, 6, 8, 9, 18	EBECRYL 837	4, 5, 6, 8, 10	EBECRYL P116	22
EBECRYL 150	4, 18	EBECRYL 841	9, 10	MODAFLOW 2100	22
EBECRYL 151	8, 18	EBECRYL 845	4, 10	MODAFLOW 9200	22
EBECRYL 152	8, 18	EBECRYL 846	4, 10	DPGDA	5, 7, 9, 18
EBECRYL 153	5, 18	EBECRYL 853	8, 20	DPHA	4, 7, 8, 20
EBECRYL 168	22	EBECRYL 859	4, 10	HDDA	7, 9, 18
EBECRYL 170	22	EBECRYL 860	4, 9, 14	IBOA	7, 8, 18
EBECRYL 171	22	EBECRYL 870/1870	4, 5, 10	IRR 590	7, 12
EBECRYL 210	6, 9, 12	EBECRYL 892	4, 5, 9, 20	IRR 591	7, 16
EBECRYL 220	4, 6, 9, 12	EBECRYL 1039	6, 8, 18	ODA-N	7, 8, 18
EBECRYL 230	6, 12	EBECRYL 1290	12	OTA 480	4, 5, 8, 9, 20
EBECRYL 244	6, 12	EBECRYL 1360	22	PETIA	7, 9, 20
EBECRYL 245	6, 12	EBECRYL 1606	4, 14	PETRA	5, 7, 8, 9, 20
EBECRYL 264	6, 12	EBECRYL 1608	4, 9, 14	TMPEOTA	5, 7, 9, 20
EBECRYL 265	12	EBECRYL 1710	5, 6, 9, 16	TMPTA	4, 5, 7, 9, 20
EBECRYL 270	12	EBECRYL 2002	7, 12	TPGDA	5, 7, 9, 18
EBECRYL 280/15IB	6, 12	EBECRYL 2003	7, 12		



### Abbreviations

Mw	molecular weight
AV	acid value
OHV	hydroxyl value

### Key

	●	→	●●●●●
Pigment wetting	Poor		Very good
Tack	High		Low
Misting	High		Low
Ink water balance	Poor		Very good
Reactivity	Low		High
Adhesion	Poor		Very good
Rubber compatibility	Affects ink rollers		No effect on ink rollers
Flow	Poor		Very good
Substrate wetting	Poor		Very good
Solvent/water resistance	Poor		Very good
Flexibility	Poor		Very good
Yellowing	Yellowing		No Yellowing

Viscosity Höppler viscosity, expressed in mPa.s  
 Dilution Parts of diluent in 100 parts of product  
 -C=C- Unsaturation content expressed in meq/g



# Contact Us

## Cytec Industries - Asia Pacific

### China

Tel : +8621 6422 8920

Fax : +8621 6422 8980

E-mail : China@cytec.com

### Korea

Tel : +822 3484 6723

Fax : +822 3452 0594

E-mail : Korea@cytec.com

### Singapore / Indonesia / Malaysia / Pakistan / Philippines

Tel : +603 7861 3188

Fax : +603 7861 3100

E-mail : SIMPP@cytec.com

### Australia / New Zealand

Tel : +613 9857 3011

Fax : +613 9849 0533

E-mail : ANZ@cytec.com

### Daicel-Cytec, Japan

Tel : +813 3548 4482

Fax : +813 3272 1815

### Taiwan

Tel : +8862 2705 3969 ext 22

Fax : +8862 2705 3967

E-mail : China@cytec.com

### Japan

Tel : +813 5564 3067

Fax : +813 3527 8017

E-mail : Japan@cytec.com

### Thailand / Vietnam

Tel : +662 296 9100

Fax : +662 295 4985-6

E-mail : Thailand@cytec.com

### India

Tel : +9122 6148 7000

Fax : +9122 6148 7014/5

E-mail : India@cytec.com

### SK-Cytec, Korea

Tel : +822 501 1097

Fax : +822 501 0170

---

### Cytec Industries Inc.

#### North America

Tel : +1800 433 2873 (USA)

Fax : +1678 255 4746 (Outside USA)

E-mail : customerservicena@cytec.com

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### Cytec Surface Specialties SA/NV Belgium

Tel : +32 2 560 45 11

Fax : +32 2 560 45 21

E-mail : surfsspec@cytec.com

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