

## GRAPHIC ARTS



## ***EBCRYL***® LEO Resins

UV curable Resins with  
Low Extractables and Odour  
for Food Packaging Printing

## **EBECRYL® LEO Resins** UV/EB Curable Resins for inks and overprint varnishes for Food Packaging

The world leader in radiation-curable resins for coatings and graphic arts applications, Cytec now offers a new family of resins for UV/EB curable inks and overprint varnishes (OPVs) for food packaging – products specifically formulated to provide a significant reduction in odour release and potential migration compared to previously available resins.

This new family of **EBECRYL LEO** resins (Low Extractables and Odour) broadens the line of **EBECRYL** resins and offers ink manufacturers valuable new options for *producing flexographic inks, lithographic inks and OPVs for food packaging* – particularly those intended for use with human foods, pet foods, pharmaceuticals and similar products.

The **EBECRYL LEO** resins have been designed to allow ink formulators to develop inks that meet the ever more demanding 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. The **EBECRYL LEO** resins allow ink and OPV makers to design products with very low migration potential that are safe for food packaging. At the same time they have the product characteristics needed to make highly performant inks and OPVs. Each of the products in the range has been developed to provide performance characteristics similar to an existing **EBECRYL** resin – simplifying the process of selecting a new resin for specific ink or varnish formulation. The resins 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.

Like other **EBECRYL** resins the **EBECRYL LEO** resins offer significant processing advantages as well. The resins allow ink manufacturers to

Product	Chemical description	Viscosity mPa.s (°C)
<b>IRR 560</b> (~ <b>EBECRYL 160</b> )	Trifunctional diluting acrylate	80 (25)
<b>IRR 561</b> (~ <b>EBECRYL 81</b> )	Amine modified polyether acrylate	75 (25)
<b>IRR 562</b> (~ <b>EBECRYL 83</b> )	Amine modified polyether acrylate	450 (25)
<b>IRR 597</b> (~ <b>EBECRYL 3700</b> )	Epoxy acrylate	5 800 (60)
<b>IRR 635</b> (~ <b>EBECRYL 40</b> ) <b>new</b>	Polymeric tetrafunctional acrylate	170 (25)
<b>IRR 645</b> (~ <b>EBECRYL 3420</b> ) <b>new</b>	Modified epoxy acrylate	200 000 (25)
<b>IRR 646</b> (~ <b>EBECRYL 150</b> ) <b>new</b>	Bisphenol A derivative diacrylate	1 400 (25)

formulate inks and OPVs that cure instantly when exposed to ultraviolet (UV) light or electron beams (EB). As a result, drying times are eliminated – speeding up throughput in the printing process, and reducing handling costs.

Inks and OPVs made with the **EBECRYL LEO** resins are environmentally-friendly too, because no solvents or other volatile organic compounds are released during the curing process and less energy is consumed than with conventional printing.

Specific performance characteristics for each of the products are highlighted in the table.

Colour Gardner	Density g/ml	Acid value mg KOH/g	Epoxy value %	Mol. Weight g/mol	Funct.	Target applications	Key features and performance
200 Apha	1.10	0,5	n. a.	470	3	– flexographic inks – lithographic inks – OPVs	– <b>EBECRYL LEO</b> specification for food packaging – high cure response – good flexibility
2	1.09	n. a.	n. a.	500	2.5	– flexographic inks – OPVs	– <b>EBECRYL LEO</b> specification for food packaging – very high cure response – low viscosity – good flexibility – high gloss
2	1.12	n. a.	n. a.	1000	3.5	– flexographic inks – OPVs	– <b>EBECRYL LEO</b> specification for food packaging – very high cure response – good flexibility – high gloss
4	1.13	5	0.05	500	2	– flexographic inks – lithographic inks – OPVs	– <b>EBECRYL LEO</b> specification for food packaging – very high cure response – excellent solvent resistance – high gloss – good pigment wetting
2	1.15	5	n. a.	750	4	– flexographic inks – lithographic inks – OPVs	– <b>EBECRYL LEO</b> specification for food packaging – very high cure response – low viscosity – good flexibility – high gloss
3	1.14	1	0.05	500	2	– flexographic inks – lithographic inks – OPVs	– <b>EBECRYL LEO</b> specification for food packaging – very high cure response – excellent solvent resistance – high gloss – good pigment wetting
2	1.14	5	n. a.	512	2	– flexographic inks – lithographic inks – OPVs	– <b>EBECRYL LEO</b> specification for food packaging – high cure response – good flexibility – excellent mechanical resistance – good pigment wetting

**Key to the table**    **Funct.:** functionality expressed as number of acrylic double bonds per molecule; **n.a.:** not applicable

For detailed technical information, please feel free to contact a **Cytec** representative in your area, or go to [www.cytec.com](http://www.cytec.com) where additional information about our entire line of **RADCURE**<sup>®\*</sup> resins for graphic arts applications can be found including our **EBECRYL**<sup>\*</sup> resins, **UVACURE**<sup>®\*</sup> resins and **ADDITOL**<sup>®\*</sup> photoinitiators and other additives.

- \* **ADDITOL** photoinitiators and other additives
- \* **EBECRYL** UV curable resins and diluting oligomers
- \* **UVACURE** cationic UV curable resins
- \* **RADCURE** energy curable resins



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