

ISOCRYL® EP-575G MATTING HARDENER FOR POLYESTER POWDER COATINGS



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GENERAL DESCRIPTION

ISOCRYL® EP-575G is a glycidyl-functional acrylic copolymer designed for use as a hardener capable of producing matte exterior-durable polyester powder coatings. Compared to previous generations of acrylic matting hardeners (Isocryl EP-570G) coatings utilizing Isocryl EP-575G as the hardener exhibit excellent impact and chemical resistance. Additional benefits include smooth cured film appearance and low contamination characteristics.

TYPICAL PROPERTIES*

Appearance	Clear Ground Flake
Softening Point (ASTM D36)	127°C minimum
Non-Volatile, weight %	98.5% minimum
Theoretical Epoxy Equivalent Weight	400-450

* Not to be used for specification purposes

ISOCRYL EP-575G HIGHLIGHTS

Designed to achieve <10 gloss pigmented and unpigmented coatings with a variety of standard and super-durable resins in a single extrusion system. Best results for chemical and mechanical properties are achieved by formulating a polyester resin with acid value 35 and Isocryl EP-575G at an 80:20 ratio with a secondary crosslinker such as Primid® XL-552 at 1% on total formulation. Resins with acid value below 30 are not recommended. Primid QM-1260 or TGIC are also suitable as a second crosslinker. It is not recommended to use the secondary crosslinker at levels higher than 1.5% due to gloss variation during processing and application. Formulations with Isocryl EP-575G are very stable to multiple extrusions indicating good process stability and have minimum gloss change with different cure temperatures, film thickness variations or part mass. Part of Isocryl EP-575G can be replaced with Isocryl EP-570G to optimize mar and scratch resistance.

It is recommended that formulated powders be tested for both physical and chemical advancement when stored at elevated temperatures. Recommended storage temperature is below 30°C. Estron Chemical has a complete powder coatings laboratory with formulating capability at our Calvert City location and can assist you in developing starting point formulations for your specific resin.

EXAMPLE FORMULATIONS

Formulation	Unpigmented	Unpigmented	White	Light Gray	Black
CC2441-2 (Allnex)	780		540	553.6	557.6
CC4430-0 (Allnex)		776			
Isocryl EP-575G	195	194	135	138.4	139.4
Primid XL-552(EMS)	10	15	10	10	10
Benzoin	5	5	5	5	5
Resiflow® PL- 200	10	10	10	10	10
Escat 50				3	3
Titanium TR-60 (Huntsman)			300	260	
Blanc Fixe F (Sachtleben)					260
Iron Oxide Black				20	
Carbon Black					15
Total	1000	1000	1000	1000	1000

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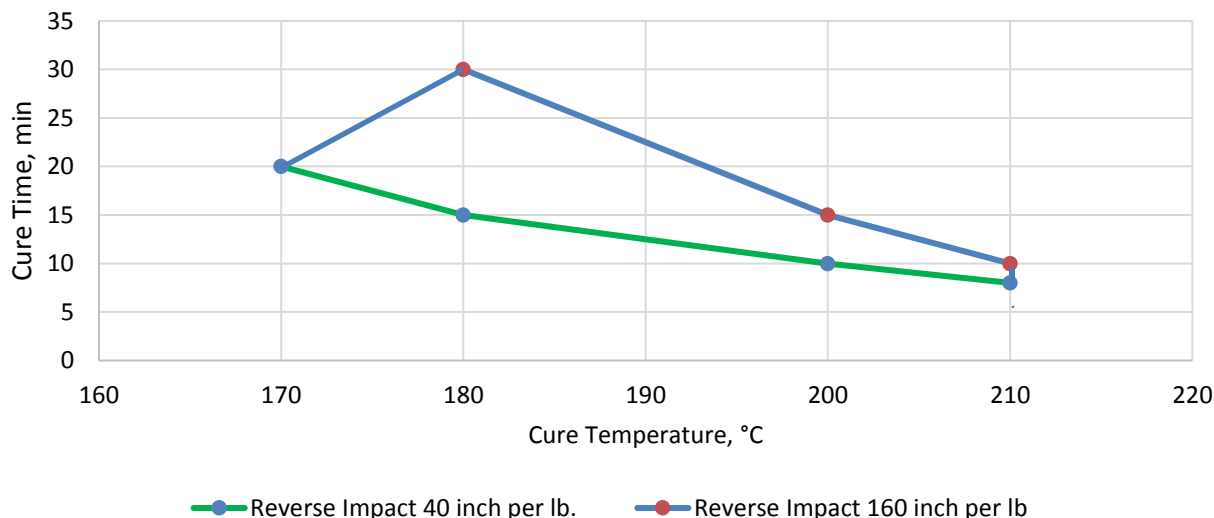


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Property	Unpigmented	Unpigmented	White	Light Gray	Black
Gloss at 60°	4.1	11.4	7.5	10	2.2
Reverse Impact (in/lb)	160	140	160	160	160
MEK, double rubs	50	50	100	100	50

CURE WINDOW



Depending on the required level of impact resistance, the cure schedule of EP-575G containing formulations can be adapted. If reverse impact of 40 in/lb is acceptable for the end use application, cure time at a given temperature can be reduced. Cure was determined to be complete when films demonstrated chemical resistance (50 MEK double rubs) and white films exhibited no yellowing.

COMPARASION ISOCRYL EP-575G to EP-570G

Properties	EP-575G	EP-570G
Gloss Range	<10 at 60°	<10 at 60°
Acrylic Level	20%	25%
Resin Selection	AV >30	AV >30
Burnish Resistance	Moderate	Very Good
Mechanical Properties	Excellent Reverse Impact 40-160 in/lb	Moderate, depending on polyester Reverse Impact 20+ in/lb
Chemical Resistance, MEK double rubs	50+	25+
PCI Smoothness	5 - 7	4 - 6
Minimum Cure	20 min at 170°C	30 min at 180°C
Storage Stability	No lumps or chemical advancement <30°C	No lumps, but loss of mechanical properties <40°C
Unpigmented Formulations	Recommended	Not recommended, but can be used for special effects

Isocryl EP-575G is most suitable for formulations that require good mechanical and chemical resistance properties and for unpigmented coatings. Isocryl EP-575G also offers the possibility of lower cure temperature.

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REGULATORY LISTINGS

The components in this material are either listed or exempt from listing due to polymer exemption criteria for the following chemical listing inventories: EINECS (Europe), TSCA (USA), DSL(Canada), ZNloC (New Zealand), IECSC (China), REACH (Europe) pre-registered.

PRODUCT AVAILABILITY

Samples are available for screening evaluations. Larger quantities are also available for extended testing or commercial use, though a 4- to 6-week lead time may be required.

STORAGE AND HANDLING

Keep container tightly closed and store in a dry, well ventilated area away from heat and sources of ignition. Store Isocryl EP-575G and finished formulations containing Isocryl EP-575G at $\leq 30^{\circ}\text{C}$ for optimal performance. Shelf life of unopened containers is one year from date of shipment. See SDS for detailed information.

CONTACT INFORMATION

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Revision Date: July 20, 2017

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