

**EPOMATT® G-154  
GLOSS MODIFIER  
FOR EPOXY-POLYESTER POWDER COATINGS**



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**GENERAL DESCRIPTION**

Epomatt® G-154 is a carboxyl-functional, solid acrylic matting resin designed to produce standard and low cure hybrid powder coatings with 60° gloss values between 2 and 45. The formulated coatings demonstrate good smoothness, mechanical and chemical resistance properties. Unlike powders made with traditional gloss modification technologies, those formulated with Epomatt® G-154 show less gloss variation under high and low cure conditions or with varying metal substrate thicknesses. When used with a suitable hybrid polyester resin, cure at temperatures as low as 130°C (266°F) can be achieved. This is not possible with traditional gloss lowering technology.

A convenient Epomatt® G-154 stoichiometric calculator is available from your Estron sales representative. This simplifies formula calculations and modifications for easy gloss control with Epomatt® G-154. Since thermoset powder coatings made with this resin are capable of very low cure, it is recommended to store G-154 formulated powders below 25°C. As with any raw material, laboratory evaluation is required with specific resins to determine the best processing conditions and optimum binder components.

**TYPICAL PROPERTIES\***

Appearance	Clear Granules
Specific Gravity (25/25)	1.15-1.25
Softening Point, BALL & RING	115-125°C
Acid value, mg KOH / gram	160-170
Non-Volatile, weight %	98.5% minimum

\* Not to be used for specification purposes

**Formula Examples**

Formulation with	Low Cure, High Flow White Formula	Low Cure, Low Gloss Black Formula
<b>Percent G-154 in Binder</b>	<b>12%</b>	<b>20%</b>
Allnex Crylcoat 1574-6	245.6	151.8
Huntsman Araldite GT-7013	390.8	419.5
G-154	86.8	142.9
Resiflow PL-200	15.0	9.9
Benzoin	3.7	5.0
BaSO4 / Blank Fixe F	35.7	256.0
Huntsman TR-60 Titanium Dioxide	216.4	
Black Iron Oxide (Harcross BK5500)	1.0	
Escat 50	5.0	5.0
Carbon Black (Monarch 1300)		9.9
<b>Total</b>	<b>1000.0</b>	<b>1000.0</b>

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**Cure and Gloss Data for Example Formulas**

<b>Cure Data White with 12% G-154</b>	<b>Substrate Thickness</b>	<b>60° Gloss</b>	<b>Reverse Impact</b>	<b>MEK rubs</b>
10' @ 200°C	0.5 mm	19	160	225
15' @ 150°C	0.5 mm	30	160	125
45' @ 130°C	0.5 mm	43	160	125

<b>Cure Data Black with 20% G-154</b>	<b>Substrate Thickness</b>	<b>60° Gloss</b>	<b>Reverse Impact</b>	<b>MEK rubs</b>
10' @ 200°C	0.5 mm	2.5	80	150
15' @ 150°C	0.5 mm	3.0	40	100
45' @ 130°C	0.5 mm	4.0	40	100

**Formulating and Processing Recommendations with Epomatt® G-154**

As seen in the formulas below, Epomatt® G-154 will lower the gloss of a number of 50:50, 60:40 and 70:30 polyester epoxy hybrid systems. In general, a higher percentage of G-154 in the total binder will result in lower gloss levels and increased gloss stability at lower temperatures. A small to medium particle size barium sulfate such as Blanc Fixe F has been shown to work best for gloss control. Barium sulfate with a larger particle size (12-18 micron range), as well as calcium carbonate, raises the gloss of the system and is not recommended. In general, formulas that contain TiO<sub>2</sub> tend to provide a lower gloss at equivalent levels of G-154.

Initial formulated gloss levels may vary based on the specific choice of polyester resins and therefore require the adjustment of G-154 usage levels.

Good dispersion is recommended to obtain consistent gloss results. The premixes for the following formulas were mixed in a high-intensity mixer and extruded in an APV 19 mm twin screw extruder, with the final two zones set at 105°C. Low-intensity premixing will give low gloss, but re-extrusion for color adjustments will raise the gloss more on the second extrusion. We recommend balancing the stoichiometry of the resin components using the simple spread sheet stoichiometric calculator available from your Estron sales representative.

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Example formulas with various resins and 15% of G-154 in binder							
Formulation (Raw Materials)	CC1574-6 Low Cure 50:50 Hybrid White	Tetracarboxylic acid salt/imidazole crosslinker, CAS 54553-90-1 White - control	CC1574-6 Low Cure 50:50 Hybrid Black	CC1620-0 60:40 Hybrid Black	P6040 60:40 Hybrid Black	P3170 70:30 Hybrid Black	CC1721-0 70:30 Hybrid Black
Allnex CC1574-6	21.3	21.3	21.1				
Huntsman GT7013	40.6	47.3	40.3	38.6	38.6	34.8	34.8
G-154	10.9		10.8	10.8	10.8	10.8	10.8
Allnex CC1620-0				22.7			
DSM Uralac P6040					22.7		
DSM Uralac P3170						26.5	
Allnex CC1721-0							26.5
Tetracarboxylic acid salt/imidazole		4.3					
Resiflow® PL-200	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Benzoin	0.4	0.4	0.5	0.5	0.5	0.5	0.5
Barium Sulfate	3.4	3.4	24.9	24.8	24.8	24.8	24.8
Titanium Dioxide	21.8	21.8					
Black Iron Oxide	0.1	0.1					
Escat 50	0.5	0.5	0.5	0.6	0.6	0.6	0.6
Carbon Black			1.0	1.0	1.0	1.0	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gloss-Cure 15 min at 200°C 60°	5	27	10	9	10	5	16
Reverse Impact inch-lb	160	140	160	160	160	160	160
MEK Double Rubs	150	150	150	175	200	150	150
Gloss-Cure 20 min at 150°C 60°	6	52	19	14	17	7	26
Reverse Impact inch-lb	160	20	160	60	80	120	160
MEK Double Rubs	150	75	150	75	50	25	50
Gloss-Cure 45 min at 130°C 60°	10	74	23	19	23	10	32
Reverse Impact inch lb	160	0	160	60	0	60	20
MEK Double Rubs	150	50	100	100	50	25	25

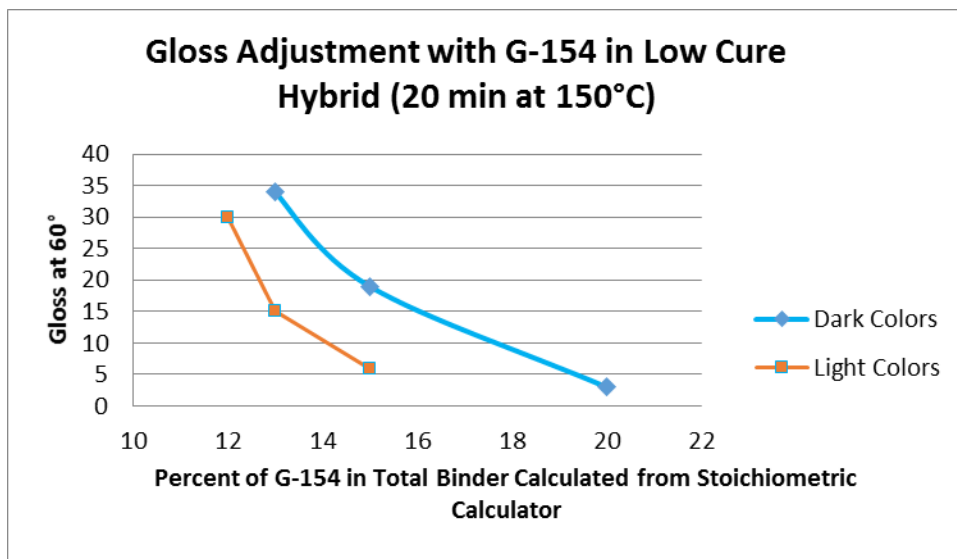
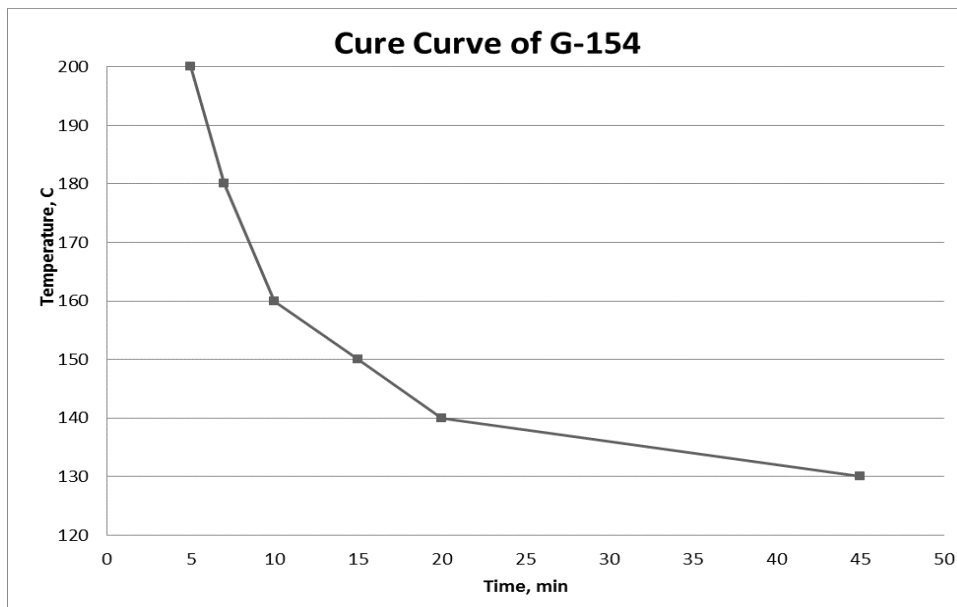
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### **REGULATORY LISTINGS**

The components of this material are either listed or exempt from listing due to polymer exemption criteria for the following chemical inventory listings: AICS (Australia), DSL (Canada), ECL (Korea), EINECS (Europe), ENCS (Japan), IECSC (China), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA). REACH pre-registered.

### **PACKAGING (NET WEIGHT)**

44 lb. / 20.0 kg in fiberboard box with polyolefin liner

### **PRODUCT AVAILABILITY**

This product is experimental and subject to change in status. It is available in commercial quantities. Please contact your Estron Sales Representative for lead time and availability.

### **STORAGE AND HANDLING**

Keep container tightly closed and store in a dry, well ventilated area away from heat and sources of ignition. Store at less than 100°F (38°C). Shelf life of unopened containers is 6 months from date of shipment. See SDS for additional information.

### **CONTACT INFORMATION**

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