

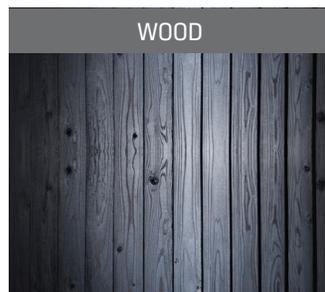
LOW VISCOSITY CARBON BLACKS IN SOLVENT-BASED ACRYLIC COATINGS

Application Description

Solvent-based acrylic resins deliver many benefits to their users, including excellent exterior durability, good chemical resistance and aesthetic performance. These acrylic resins are used in virtually all coatings applications, including exterior architectural paints, industrial coatings, automotive coatings and wood coatings.

Low viscosity carbon blacks are frequently selected for use in solvent-based acrylic systems, especially where thin films are desired. In many cases, these carbon blacks are easier to disperse than standard untreated carbon blacks and are selected when dispersability is a key performance requirement.

Solvent-Based Acrylic Coatings that Can Use Low Viscosity Carbon Blacks Include:

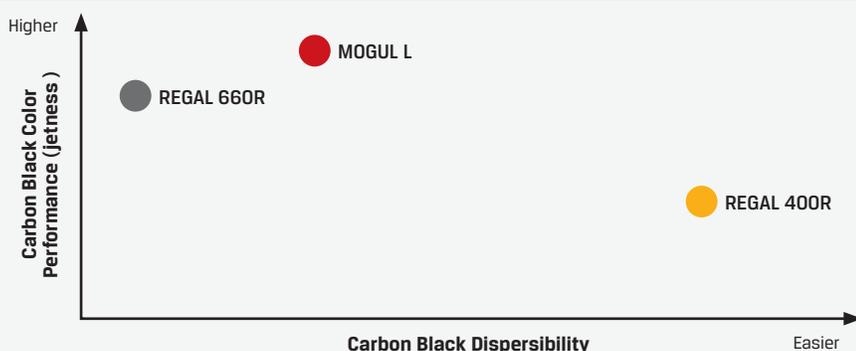


CABOT PRODUCT OFFERING

Carbon Black Product	Jetness	Typical Surface Area (N ₂ SA) m ² /gram	Typical Structure (OAN/DBP) cc/100 grams	Tint Strength ASTM D-3265	Product Characteristics
MOGUL® L	Higher	138	62	130	Excellent color and dispersability in coatings formulations.
REGAL® 400R	Lower	96	71	115	Good stability and tinting strength. Easier to disperse than MOGUL L carbon black.

The data in the table above are typical test values intended as guidance only, and are not product specifications. Product specifications are available from your Cabot representative.

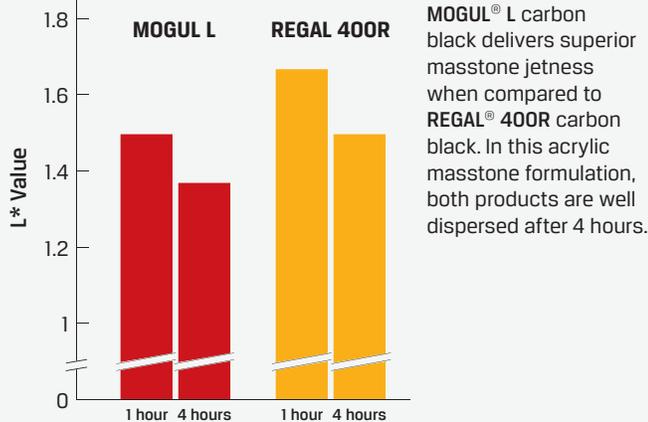
PRODUCT PERFORMANCE



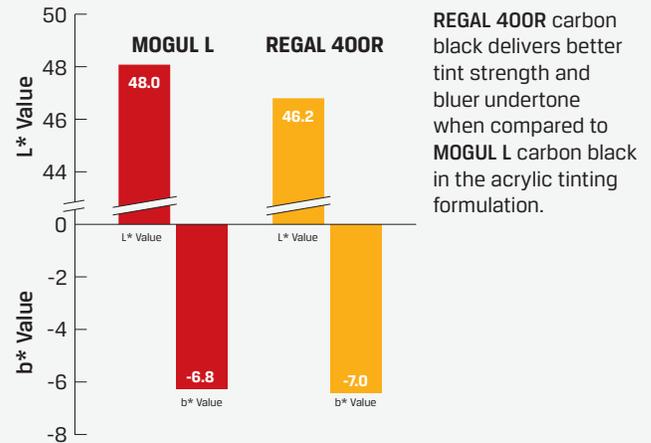
Formulators must manage a tradeoff between the color performance and the dispersability of carbon black in formulation. Cabot's **MOGUL L** product is a higher color carbon black than **REGAL 400R** carbon black, but **REGAL 400R** carbon black is easier to disperse. A multipurpose product (**REGAL 660R** carbon black) is included in this chart for comparison purposes.

PRODUCT PERFORMANCE

Masstone of Carbon Black Products



Tinting Strength of Carbon Black Products



The product performance results above were obtained using the model formulations that follow. Only the carbon black was changed.

MODEL FORMULATIONS

Acrylic Black Masstone Formulation

Acrylic Black Gloss Millbase		
Product Name	Description	Amount (%)
Setalux® 17-1445	Resin	50.01
Xylene	Solvent	7.81
Butyl Acetate	Solvent	7.81
DisperBYK® 2000	Dispersant	9.37
Carbon Black	Pigment	25.00
Total		100.00

- Premix at 4000 RPM in high speed disperser for 10 minutes to wet out
- Recirculate in horizontal mill for 20 minutes using 1.0 mm zirconium media at 10.0 m/s tip speed

Acrylic Black Gloss Letdown		
Product Name	Description	Amount (%)
Setalux 17-1445	Resin	68.05
Cymel® 325	Resin	21.02
Butyl Acetate	Solvent	10.93
Total		100.00

- Mix together for 15 minutes under good agitation

Acrylic Black Gloss Finish Formulation		
Component		Amount (%)
Acrylic Black Gloss Millbase		7.76
Acrylic Black Gloss Letdown		92.24
Total		100.00

- Stir together at 300 RPM for 10 minutes
- Dilute with Aromatic 100 fluid to 35-40 seconds in No.4 Ford cup
- Spray onto cold roll steel, flash off for 20 minutes
- Cure at 140 °C for another 20 minutes

Acrylic White Tint Formulation

Acrylic White Tint Millbase		
Product Name	Description	Amount (%)
Setalux 17-1445	Resin	6.61
Xylene	Solvent	8.80
Butyl Acetate	Solvent	6.04
DisperBYK® 2000	Dispersant	1.34
Ti-Pure® R-960	Titanium Dioxide	77.21
Total		100.00

- Mix at 6000 RPM in high speed disperser for 30 minutes

Acrylic White Tint Letdown		
Product Name	Description	Amount (%)
Setalux 17-1445	Resin	98.99
BYK® 348	Wetting Agent	1.01
Total		100.00

- Mix together for 15 minutes under good agitation

Acrylic White Tint Finish Formulation		
Component		Amount (%)
Acrylic White Tint Millbase		40.67
Acrylic White Tint Letdown		59.33
Total		100.00

- Mix together for 15 minutes under good agitation

Acrylic Black Tinted Formulation		
Component		Amount (%)
Acrylic Black Gloss Finish Formulation		10.00
Acrylic White Tint Finish Formulation		90.00
Total		100.00

- Stir together at 300 RPM for 10 minutes
- Dilute with Aromatic 100 fluid to 35-40 seconds in No.4 Ford cup
- Spray onto cold roll steel, flash off for 20 minutes
- Cure at 140 °C for another 20 minutes

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