

MONARCH[®] 650 Specialty Carbon Black

Product highlights

MONARCH[®]650 specialty carbon black is designed to offer a wide range of properties. It imparts jetness, blue undertone, gloss, and heat stability to final products.

MONARCH 650 specialty carbon black is especially suited for black color paste preparation with dimethyl silicone fluid as a matrix. This product allows for easy dispersion by conventional compounding mixers. It also enables excellent heat stability. The color paste is suitable for room temperature vulcanized (RTV) silicone sealant formulations that require excellent jetness and gloss to provide a feeling of luxury and durability.



Key applications

MONARCH 650 specialty carbon black is suitable for use in RTV silicone sealants for construction and industrial applications.

Performance in black color pastes

MONARCH 650 specialty carbon black can be dispersed in dimethyl silicone fluid easily through conventional compounding mixers, e.g., planetary mixer, 3-roller mixer, kneader, twin screw extruder etc.

Figure 1 shows the Fineness (μm) measurement of a black color paste containing 27wt% carbon black in 350cst dimethyl silicone fluid. The paste containing MONARCH 650 specialty carbon black exhibited the best fineness.

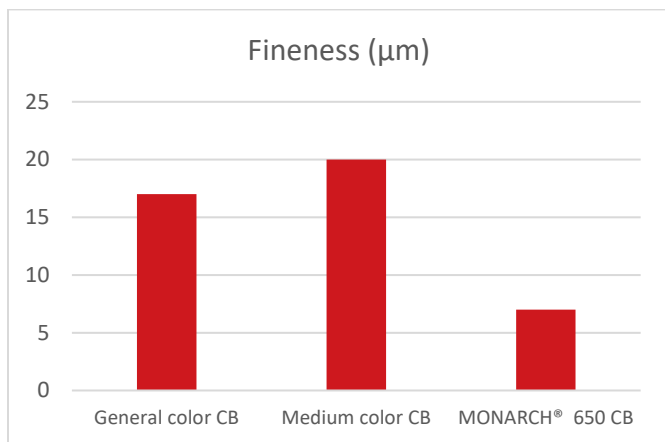


Figure 1, Fineness is measured upon black color paste formulation, carbon black loading is 27wt% in 350cst dimethyl silicone fluid

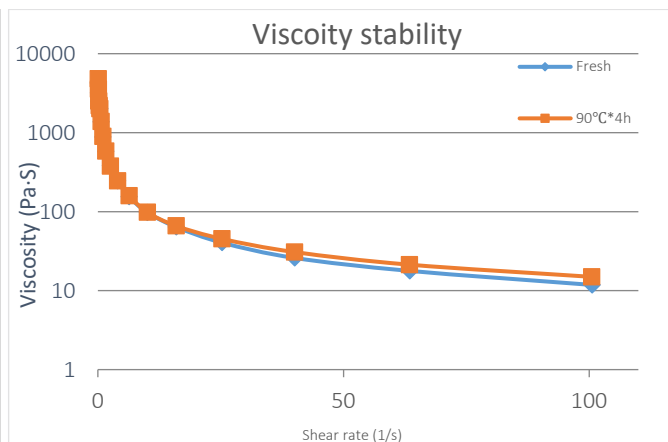


Figure 2, Viscosity stability of black color pastes after aging

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MONARCH 650 specialty carbon black enables excellent heat aging stability. Figure 2. above shows the viscosity curves of the 27wt% color pastes. The viscosity was tested shortly after aging at 90°C for 4 hours. The data demonstrates that MONARCH 650 specialty carbon black enables formulation stability at high temperature.

Performance in RTV silicone sealant applications

MONARCH 650 specialty carbon black performed very well in a model one component (1K) RTV silicone sealant formulation¹. The final loading of carbon black was 1% in the cured RTV film. The results show that MONARCH 650 specialty carbon black delivered the best jetness (lowest L*, Figure 3) and highest gloss (Figure 4) in the RTV silicone formulations tested.

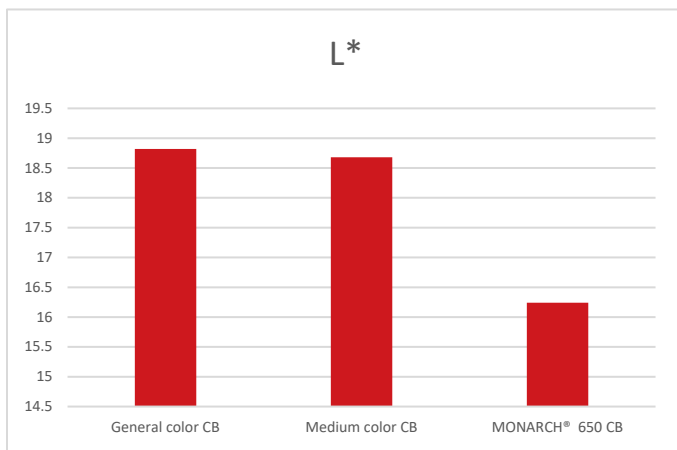


Figure 3, Model 1K RTV Silicone sealant formulation jetness tests: cured at 23°C, 50% relative humidity for 7 days, thickness is 2mm

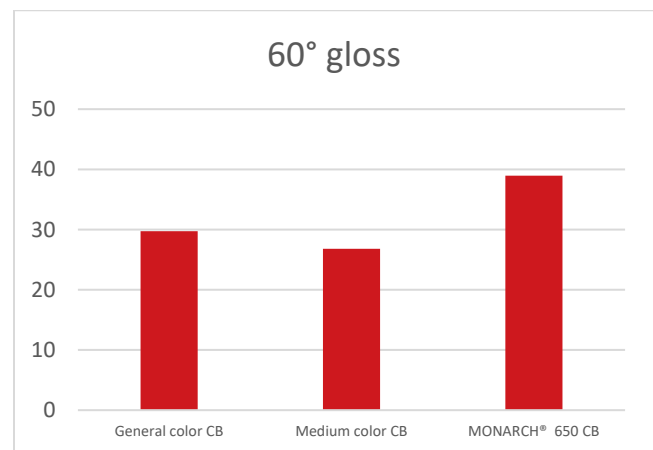


Figure 4, Model 1K RTV Silicone sealant formulation gloss tests: cured at 23°C, 50% relative humidity for 7 days, thickness is 2mm

In comparison with other conventional grades, MONARCH 650 specialty carbon black can achieve higher jetness at lower loading levels. Figure 5 below shows L* values of the model 1K RTV silicone sealant formulation containing MONARCH 650 specialty carbon black and other competitive grades after curing at 23°C and 50% relative humidity for 7 days. The data shows that MONARCH 650 specialty carbon black can provide better jetness even at reduced loadings.

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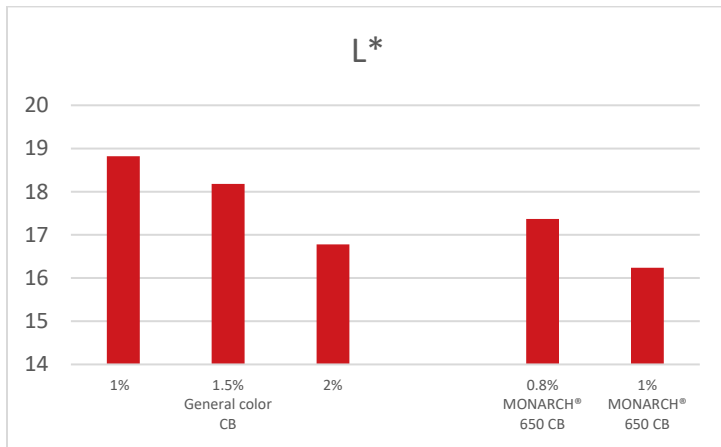


Figure 5, The influence of carbon black loading on jetness of cured 1K RTV silicone sealant, film thickness is 2mm

¹Cabot model 1K RTV silicone sealant formulation contains 1wt% carbon black, hydroxyl terminated silicone gum, silicone fluid, fillers and silane coupling agent. More details on model formulation and rheology test parameters are available by contacting your Cabot representative.

Product form and logistics

- ◆ Product Form: Fluffy powder
- ◆ Regional availability: Global
- ◆ Bag Packaging Options: 10kg/bag, 520kg/pallet
- ◆ Bulk Packaging Options: Multiple

For information on product-specific storage conditions, please refer to the applicable Safety Data Sheet (SDS) available from your Cabot representative or at cabotcorp.com.

The MONARCH name is a registered trademark of Cabot Corporation.

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