



SPECIALTY CARBON BLACKS

FOR CONDUCTIVE PLASTICS WITH LOW
COMPOUND MOISTURE ABSORPTION (LOW CMA)



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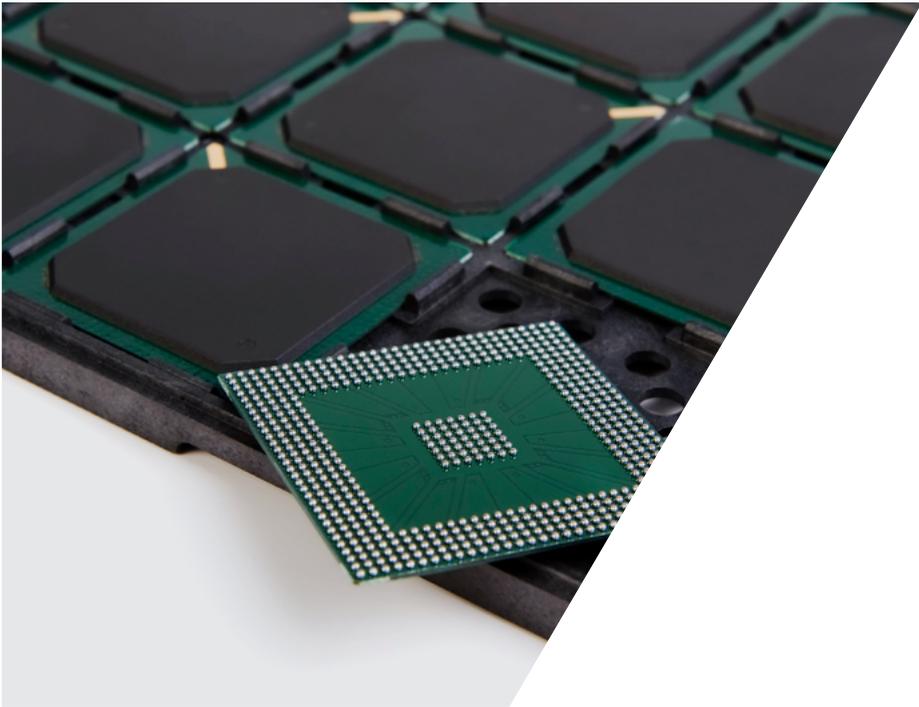
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Performance & Leadership in Black & Conductive Plastics

Cabot Corporation is a global performance materials company, and we strive to be our customers' commercial partner of choice. We have been a leading manufacturer of carbon black and other specialty chemicals for more than 135 years, and we have supplied additives to the plastics industry since its inception.

Our global reach enables us to work closely with customers to meet the highest standards for performance, quality, and service. Our global production network and three applications development facilities provide our customers with global service capabilities as well as the latest technical innovations.



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Performance & Leadership in Black & Conductive Plastics

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Delivering performance to increase conductivity and protect against damage caused by electrostatic discharge (ESD)

Applications that require normally insulative polymers to be electrically conductive, dissipative, or antistatic, are broad. Figure 1 illustrates the different conductivity regimes for plastics.

Cabot offers a range of carbon blacks that are suitable primarily for use in plastic applications where static discharge or sparks could create a risk to product and people safety. Conductivity, provided by the carbon black at elevated loadings, protects plastics parts and products against premature failure or damage due to electrostatic discharge. ESD plastic parts and solutions can be found in a variety of applications and provide several functionalities such as the protection of sensitive electronics, safer operations in explosive atmospheres and reduced risks in healthcare environments.

Whatever your needs, we have developed a conductive specialty carbon black that will enable you to achieve optimal performance.

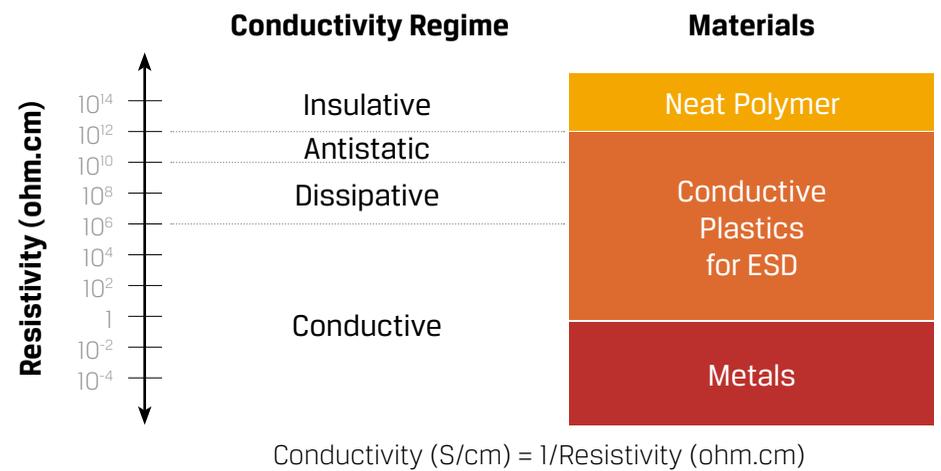


Fig 1: ESD Conductivity Regimes

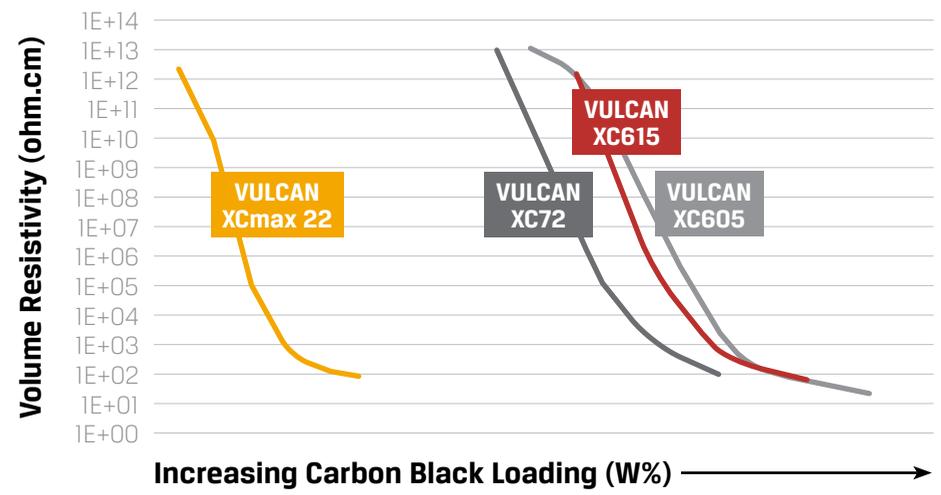


Fig 2: Percolation Curves of Selected Cabot Products

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Products for Conductive & ESD Applications

Some ESD applications require low compound moisture absorption (low CMA)

Several ESD applications (for example electronic packaging) are sensitive to moisture in the polymer compound. Low compound moisture absorption helps protect parts from internal bubbles and surface defects that can be detrimental to the aesthetics and mechanical properties of the compound and final part.

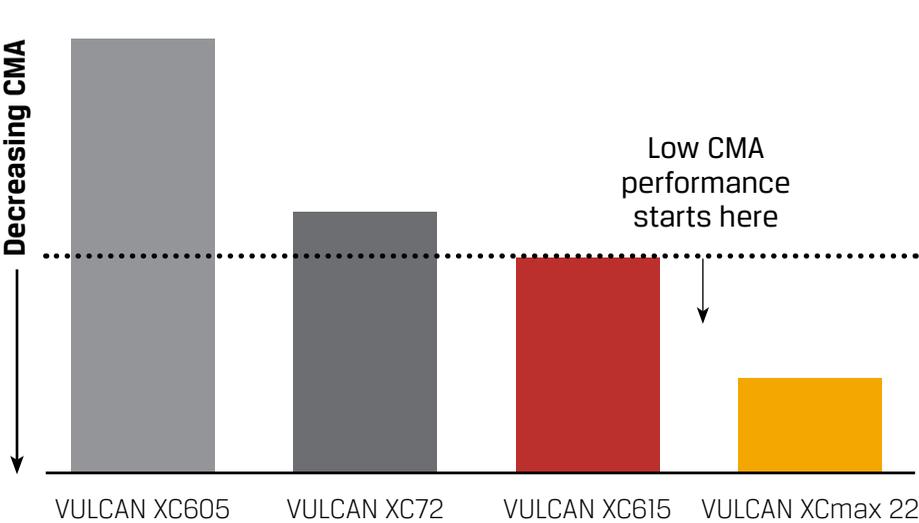


Fig 3: CMA Performance of Selected Cabot Products

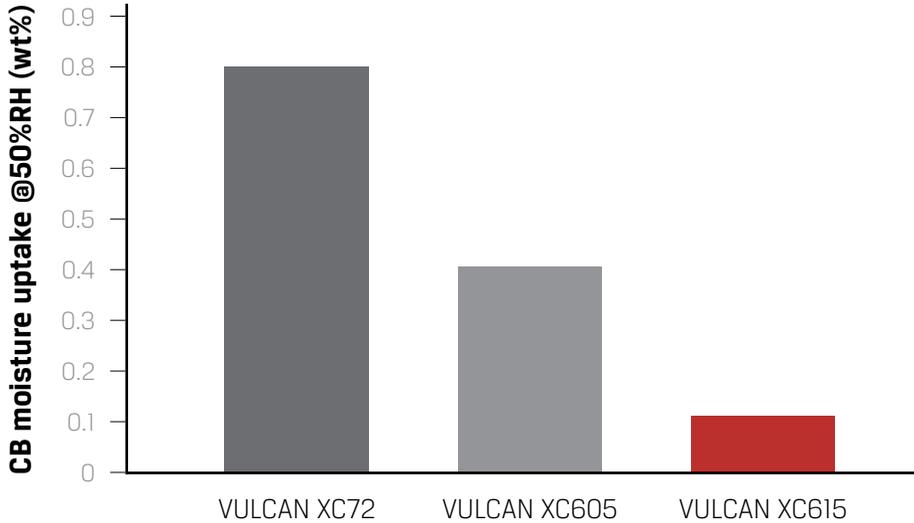


Fig 4: Moisture Uptake of Selected Cabot Products

The data in the graphs above are typical test values intended as guidance only; they are not product specifications. Product specifications are available upon request from your Cabot representative.

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Cabot Offers a Diversified Range of Products for Low CMA Applications

Conductive and ESD applications often require balancing a multitude of technical requirements for carbon black. Conductivity, processability, dispersibility, surface smoothness, and cost are just some of them. Taking this into account, Cabot offers a range of options to formulators seeking low moisture absorption to choose from.

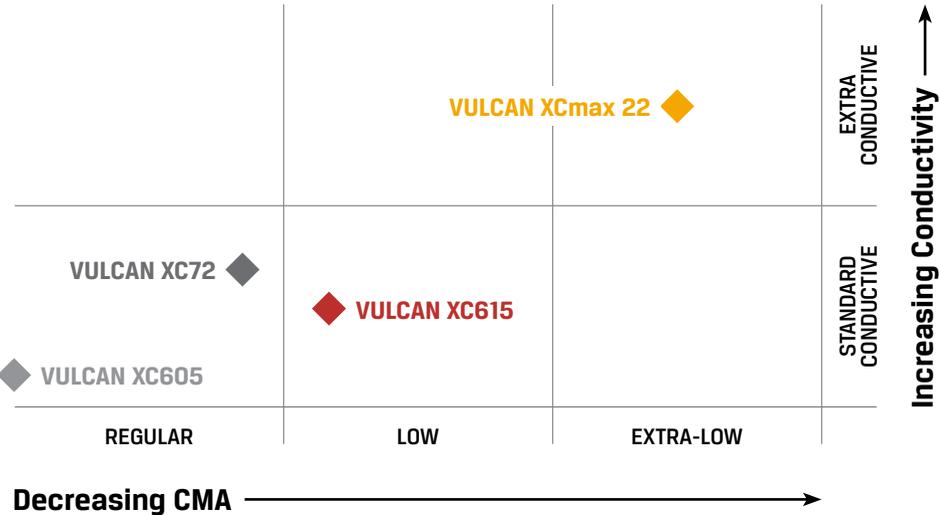


Fig 5: Relative Positioning of Selected Cabot Products

VULCAN® XCmax™ 22 specialty carbon black

VULCAN XCmax 22 specialty carbon black is an extra-conductive carbon black that achieves conductivity at the lowest loadings of traditional furnace blacks. Incorporating VULCAN XCmax 22 specialty carbon black into formulations typically requires 50% of the required loading of other Cabot carbon blacks to achieve similar conductivity. VULCAN XCmax 22 specialty carbon black enables the lowest CMA among all of Cabot's specialty carbon black portfolio.

VULCAN® XC615 specialty carbon black

VULCAN XC615 specialty carbon black is a conductive carbon black that achieves conductivity at comparatively low loadings vs. traditional conductive furnace blacks. The morphology of VULCAN XC615 specialty carbon black has been specifically designed to enable low CMA performance in applications sensitive to moisture uptake.

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Additional References

This Product Application Guide provides specific information about our specialty carbon blacks for use in conductive and ESD applications with an additional need for low compound moisture absorption. For a more general application guide for conductive and ESD applications as well as other application-specific product recommendations and broader product portfolio information, please visit cabotcorp.com or contact your Cabot representative.

NORTH AMERICA

Cabot Corporation Business
and Technology Center
157 Concord Road
P.O. Box 7001
Billerica, MA 01821 – USA
Technical service
T +1 800 462 2313
Customer service
T +1 678 297 1300
F +1 678 297 1245

SOUTH AMERICA

Cabot Brasil Industria
e Comercio Ltda.
Rua do Paraíso 148 - 5º andar
04103-000 São Paulo
Brazil
T +55 11 2144 6400
F +55 11 3253 0051

EUROPE

Cabot Specialty Chemicals
Coordination Center
SIA Cabot Latvia
Gustava Zemgala Gatve 74A
Riga, LV-1039
Latvia
T +371 6705 0900
F +371 6705 0985

MIDDLE EAST & AFRICA

Cabot Dubai
P.O. Box 17894
Jebel Ali Free Zone
LOB 15, Office 424
Dubai
United Arab Emirates
T +371 6705 0700
F +371 6705 0985

ASIA PACIFIC

Cabot China Ltd.
558 Shuangbai Road
Shanghai 201108
China
T +86 21 5175 8800
F +86 21 6434 5532

JAPAN

Cabot Specialty Chemicals Inc.
Sumitomo Shiba-Daimon Bldg. 3F
2-5-5 Shiba Daimon,
Minato-ku
Tokyo 105-0012
Japan
T +81 3 6820 0255
F +81 3 5425 4500

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