



# Hi-Sil™ 255C-D and 255CG-D

## Highly Reinforcing Silica for Rubber

*Hi-Sil™ 255C-D is a synthetic, white, amorphous silicon dioxide. It is available in powder or granular form and used in black and non-black rubber compounds as a highly reinforcing filler.*

### Typical Properties and Characteristics

Hi-Sil™	Surface Area, BET-5	pH	Na <sub>2</sub> SO <sub>4</sub> , wt. %	Physical Form
255C-D	180 m <sup>2</sup> /g	6.3	2 Max	Easy dispersing powder
255CG-D	180 m <sup>2</sup> /g	6.3	2 Max	Fast incorporating granule

### Registration Number

231-545-4	European EINECS
CAS No. 112926-00-8	Synthetic Precipitated Amorphous Silica
CAS No. 7631-86-9	TSCA Chemical Substance Inventory (SiO <sub>2</sub> )

### Mechanical Rubber Goods

Hi-Sil™ 255C-D and Hi-Sil™ 255CG-D provide similar rubber properties to those obtained with commercial precipitated silica in the Nitrogen BET-5 surface area range of 180m<sup>2</sup>/g.

Either form of Hi-Sil™ 255C-D are used to improve compound adhesion to the reinforcing fabric in power transmission belts and hose compounds and to improve tear resistance while maximizing abrasion resistance in black hose covers.

In footwear, Hi-Sil™ 255C-D allows for good transparency and color for translucent soling and is used to reinforce a wide range of heel and sole compounds.

Colored flooring applications using either form of Hi-Sil™ 255C-D exhibit high hardness and abrasion resistance.

Other reinforced rubber applications where both forms of Hi-Sil™ 255C-D are used in are mats, wire and cable coverings, specialty gloves, and sporting equipment grips.

Hi-Sil™ 255CG-D is also formulated into tire tread compounds.

### Rubber Processing Recommendations

For all product forms, it is recommended that the silica be added as early as possible in the mixing schedule. Ideally, the silica should be added at the same time as the polymer(s) and before the addition of process oil to allow time for silica incorporation into the polymer(s). For high loadings of silica powders, split additions are recommended...first addition with the polymer(s) and the second with the process oil. For loadings of high density - low dust silica granules, a single addition can be made with the polymer/s and before process oil addition.

Split oil additions are recommended to maintain a high viscosity as increased shear aids in silica dispersion. Granules and pellets tend to need slightly more mixing time to disperse than milled powders.

*Note: Silica incorporation time and dispersion in rubber will vary based on internal mixer type and rotor design.*

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## Packaging

Hi-Sil™ 255C-D powder is packaged in 20 Kg (44 pound) paper bags. The bags are palletized in a 10X3 pattern with 30 bags per pallet (600 Kg or 1,322 pounds).

Hi-Sil™ 255CG-D granule is packaged in 25 Kg (55 pound) paper bags. The bags are palletized in a 10X3 pattern with 30 bags per pallet (750 Kg or 1,653 pounds). Hi-Sil™ 255CG-D granule is also available in 20 Kg (44 pound) polyethylene bags, the bags are palletized in a 11X3 pattern with 33 bags per pallet. Hi-Sil™ 255CG-D granule is available in FIBC's (650 Kg or 1,433 pounds) and (600 Kg or 1,322 pounds).

Pallets containing paper and polyethylene bags are stretch wrapped in plastic film to protect against moisture pick up and shifting during transporting and storage.

## Storage

To ensure product integrity PPG recommends that our silica products be stored under dry, clean conditions and protected against exposure to other substances.

Since silica may pick up moisture we also recommend that products that are stored more than one year, from date of manufacture, be re-tested for moisture content.

There is no shelf life limit when stretch-wrapped palletized units or bags are kept under the above stated conditions.

## Safety and Health Effects



PPG Industries Inc. is committed to the safe handling of chemicals at every step of the process, from manufacturing and distribution through education of the end user. Our participation in the American Chemistry Council's *Responsible Care*® Program is evidence of our commitment to the health, safety and welfare of our employees and the industry. PPG Industries Inc. recommends thoroughly reading and understanding the product labels, Material Safety Data Sheets, and other safety information about the product prior to use or handling. Product health and safety information should be made available to your employees and customers.

## Samples and Service

PPG's Technical Service specialists are available for consulting on the use, handling and storage of Hi-Sil™ 255C-D and 255CG-D Silica products.

Gallon containers and bag-size samples are available upon request from Technical Service.



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