



Hi-Sil™ 200 Series

Rubber Reinforcing Silica Products

Hi-Sil™ 200 Series products are synthetic, white, amorphous silicon dioxide powder, pellets, and granules used to reinforce industrial rubber articles.

Typical Properties and Characteristics

Hi-Sil™	Surface Area, BET-5	pH	NaCl, wt. %	Apparent Tamped Density	Physical Form
210	135 m ² /g	7	2.5 Max	240 g/L	Low dust pellets
233	135 m ² /g	7	2.5 Max	160 g/L	Highly dispersing powder
243LD	135 m ² /g	7	2.5 Max	335 g/L	Low dust, high density granules

Registration Number

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

Mechanical Rubber Goods

Hi-Sil™ 200 Series products are often used in white or colored rubber applications where tensile strength, tear resistance, and abrasion resistance are critical to final product performance. Superior heat age resistance and tear strength are added benefits when used with Carbon Black (example: N-347, N-358).

Pneumatic and Solid Tires

Hi-Sil™ 243LD and 210 can be used to: promote adhesion to brass coated steel or fabric cord, alone or as part of a bonding system; reduce the tendency for "chunk out" in Off the Road (OTR) tire treads and heavy truck tires by improving the Natural Rubber compound tear resistance; alter stiffness in the bead area; and/or alter the dynamic properties of tread compounds, usually in combination with silane coupling agents.

Rubber Processing Recommendations

For all Hi-Sil™ 200 Series 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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 60 S. Seiberling Street • Akron, Ohio 44305

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Packaging

Hi-Sil™ 200 Series silica products are packaged in multi-wall kraft paper or polyethylene bags as follows:

<u>200 Series</u>	<u>Net weight</u>	<u>Bag Construction</u>
Hi-Sil™ 233	44 pounds	multi-wall kraft paper
Hi-Sil™ 210	44 pounds	polyethylene
Hi-Sil™ 210	50 pounds	polyethylene
Hi-Sil™ 243LD	44 pounds	polyethylene
Hi-Sil™ 243LD	50 pounds	multi-wall kraft paper

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™ 200 Series Silica products.

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



PPG Industries, Inc.
Silica Products
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Customer Service: 1-800-243-6745
Technical Service: 1-800-764-7369



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Statements and methods presented in this publication are based upon the best available information and practices known to PPG Industries at present, but are not representations or warranties of performance, result or comprehensiveness, nor do they imply any recommendations to infringe any patent or an offer of license under any patent.

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