



Hi-Sil™ 190G and 190G-M

Rubber Reinforcing Silica

Hi-Sil™ 190G is a white, synthetic, amorphous silicon dioxide granule. It is used as a highly reinforcing filler in black, non-black, and tire tread applications.

Typical Properties and Characteristics of Hi-Sil™ 190G

Hi-Sil™	N ₂ Surface Area, BET-5	pH	Na ₂ SO ₄ , wt. %	Bulk Density	Physical Form
190G	195	7	0.5 Max	~ 18 lbs./ft. ³	Granule

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 and Footwear

Hi-Sil™ 190G is a highly reinforcing silica ideal for compounds designed for wear resistance such as footwear outsoles. Other possible applications for Hi-Sil™ 190G will involve a requirement for high tear resistance and includes many industrial rubber products such as conveyor belts, wire and cable, hose covers, oil well specialties, and others.

Tires

When used in off the road (OTR) tread compounds Hi-Sil™ 190G provides high tear strength with no harmful increase in Flexometer heat build-up. Dynamic performance may also be improved through the reduction in both loss modulus and tangent delta which indicates it to be a good candidate for low rolling resistance applications

Rubber Processing Recommendations

For granulated silica form, it is recommended that the silica be added as early as possible in the mixing schedule. In general, the silica should be added at the same time as the polymer(s) and before the addition of process oil to allow time for the silica to incorporate into the polymer. For mixes containing silica granules, a single addition can be made with the polymer and before process oil addition. As high mix viscosity aids in silica dispersion, split oil additions are recommended when processing oils are used. Granules tend to need slightly more mixing time to disperse than spray dried or 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™ 190G is packaged as follows:

<u>Hi-Sil™ Product</u>	<u>Net weight</u>	<u>Bag Construction</u>
Hi-Sil™ 190G	44 pounds (20Kg)	polyethylene bags
	800 pounds (363 Kg)	Flexible Intermediate Bulk Container (FIBC)

Shipments can be made in bulk truck or rail. Bags are unitized for shipping on pallets which are stretch wrapped with clear plastic film. FIBC's are double stacked on cardboard with a cardboard pallet in between.

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™ 190G.

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



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