PPG HI-SIL® 223-D silica is a synthetic, white, amorphous silicon dioxide powder used in black and non-black rubber compounds as a moderately high reinforcing filler.

### Typical Properties – Hi-Sil 233-D silica

<table>
<thead>
<tr>
<th></th>
<th>Surface Area, BET-5</th>
<th>pH</th>
<th>Na₂SO₄, wt. %</th>
<th>Physical Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi-Sil 233-D silica</td>
<td>150 m²/g</td>
<td>6.9</td>
<td>2 Max</td>
<td>Easy dispersing powder</td>
</tr>
</tbody>
</table>

### Registration Numbers

- 231-545-4: European EINECS
- CAS No. 7631-86-9: TSCA Chemical Substance Inventory (SiO₂)
- CAS No. 112926-00-8: Synthetic Precipitated Amorphous Silica

### Mechanical Rubber Goods

Hi-Sil 233-D silica provides similar rubber properties to those obtained with commercial precipitated silica in the nitrogen BET-5 surface area range of 150 m²/g. Rubber properties obtained by using Hi-Sil 233-D silica are similar to Hi-Sil 233 silica from the U.S. Both products are 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).

In footwear, Hi-Sil 233-D silica allows for good transparency and color for translucent soles and is used to reinforce a wide range of heel and sole compounds.

Other reinforced rubber applications in which Hi-Sil 233-D silica is used are mats, wire and cable coverings, specialty gloves, and sporting equipment grips.

### Potential Applications

- Conveyor Belts
- Wire and Cable Coatings
- Hoses
- Engine Mounts
- Seals and Gaskets
- Sporting Goods
- Footwear
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, i.e. first addition with the polymer(s) and the second with the process oil.

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 powders.

Packaging

Pallets containing paper and polyethylene bags are stretch wrapped in plastic film to protect against moisture pick up and shifting during transporting and storage. Please consult customer service or your sales representative regarding additional packaging options, including custom package sizes and bulk shipments.

Visit www.ppgsilica.com for more information.