ULTRASIL®

Product information

# ULTRASIL® 4000 GR

## Characteristic physico-chemical data

| Properties and test methods | Unit | Value |
|---|---|---|
| Specific surface area ($N_2$)<br>Multipoint<br>following ISO 9277 | $m^2/g$ | 85 |
| Specific surface area (CTAB)<br>following ISO 5794-1G | $m^2/g$ | 80 |
| Loss on drying<br>2 h at 105 °C<br>following ISO 787-2 | % | 6.0 |
| pH value<br>5 % in water<br>following ISO 787-9 | - | 6.5 |
| SA Ro-Tap (> 300 µm)<br>following ISO 5794-1F | % | ≥ 80 |
| SA Ro-Tap (< 75 µm)<br>following ISO 5794-1F | % | ≤ 10 |

## Registration

ULTRASIL® 4000 GR

| | |
|---|---|
| CAS-No. | 112926-00-8<br>7631-86-9 |
| EC (Europe) | registered 231-545-4 |
| REACH (Europe) | registered 01-2119379499-16-0000 |
| ENCS (Japan) | registered |
| KECI (Korea) | registered |
| NZIoC (New Zealand), AICS (Australia) | registered |
| TCSI (Taiwan) | registered |
| IECSC (China) | registered |
| DSL (Canada), TSCA (USA) | registered |

$SiO_2$, synthetically produced amorphous silicon dioxide.
Precipitated silica for use as a white reinforcing filler in the rubber industry.

## Properties and applications

ULTRASIL® 4000 GR is a highly dispersible silica with a low specific CTAB surface area of 80 $m^2/g$ imparting better dispersion properties than comparable products in this surface area range. It combines excellent hysteresis performance and high reinforcement. In tire tread compounds, this silica is especially suited to high loadings showing excellent processing behavior for the optimization of wet and winter tire properties. In all other passenger car rubber formulations, especially sidewall compounds and in mechanical rubber goods compounds, the reinforcing effect of this product can be adjusted over a wide range to gain optimum performance.

ULTRASIL® 4000 GR is a mechanically compacted granule. As a result of the granulation process, it leads to less dust development during mixing. Compared to silica products with a specific surface area of approximately 120 $m^2/g$, ULTRASIL® 4000 GR provides lower compound viscosities at equal and particularly at high loadings. In addition, lower dynamic stiffness at low ambient temperatures and improved rolling resistance are achieved for tire tread compounds. With this silica, very high silica loadings can be realized to further improve wet traction properties and, particularly, to optimize winter properties. A very good dispersion can be maintained even at these high loading levels resulting in high abrasion resistance for tire tread compounds. Bifunctional organosilanes like Si 69®, Si 75®, Si 266® or Si 363® are required for the use of ULTRASIL® 4000 GR in tire tread compounds. The use of state of the art activators like diethylene glycol, triethanolamine or other alkaline accelerators might be beneficial to achieve optimum in-rubber data.

Field of application: Tires, Mechanical Rubber Goods

## Safety and handling

Information concerning the safety of this product is listed in the corresponding Safety Data Sheet, which will be sent with the first delivery or upon updating. Such information is also available from Evonik Operations, Product Safety Department, E-MAIL sds-im@evonik.com We recommend to read carefully the safety data sheet prior to the use of our product.

## Packaging and storage

For details regarding our packaging options for this product, please contact your local sales representative.Our silica products are inert and chemically stable. However, due to their high specific surface area, they can absorb moisture and volatile organic compounds from the surrounding atmosphere. Therefore, we recommend storing the products in sealed containers in a dry, cool place, remote from volatile organic substances. Even if a product is stored under these conditions, after a longer period it can still pick up ambient moisture over time, which could lead to it exceeding the specified moisture content. For this reason, our recommended use-by date is 24 months after date of manufacture. Product older than 24 months should be tested for moisture content before use in order to make certain that it is still suitable for the intended application.



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