

ULTRASIL® 5000 GR

Characteristic physico-chemical data

| Properties and test methods | Unit | Value |
|---|-------------------|--------|
| Specific surface area (N ₂) Multipoint following ISO 9277 | m ² /g | 115 |
| Specific surface area (CTAB) following ISO 5794-1G | m ² /g | 110 |
| Loss on drying 2 h at 105°C following ISO 787-2 | % | 5.5 |
| pH value 5 % in water following ISO 787-9 | - | 6.5 |
| Pour density following ASTM D1513 | g/l | 270 |
| SA Ro-Tap (> 300 μm) following ISO 5794-1F | % | ≥ 80 |
| SA Ro-Tap (< 75 μm) following ISO 5794-1F | % | ≤ 10 |
| Electrical conductivity 4 % in water following ISO 787-14 | μS/cm | ≤ 1000 |
| SiO ₂ content ¹⁾ following ISO 3262-19 | % | ≥ 97 |

1) based on ignited substance (2 h/1000°C)
*) The given data are typical values. Specifications on request.

Chemical description

SiO₂, synthetically produced amorphous silicon dioxide

Registration

ULTRASIL® 5000 GR

| | |
|---------------------------------------|-------------|
| CAS-No. | 112926-00-8 |
| C&L inventory (Europe) | notified |
| EC (Europe) | 231-545-4 |
| REACH (Europe) | registered |
| ENCS (Japan) | registered |
| KECI (Korea) | registered |
| NZIoC (New Zealand), AICS (Australia) | registered |
| PICCS (Philippines) | registered |
| IECSC (China) | registered |
| DSL (Canada), TSCA (USA) | registered |

Due to the low specific BET surface area of approximately 115 m²/g the highly dispersible ULTRASIL® 5000 GR combines excellent hysteresis performance and high reinforcement with improved processing behavior in passenger car tire tread compounds. This silica is especially suited to high filler loadings for the optimization of wet and winter properties.

Properties and applications

ULTRASIL® 5000 GR is a mechanically compacted granulate. On account of the granulation process it leads to less dust development during mixing. Compared to standard silicas with a specific surface area of approximately 160 m²/g ULTRASIL® 5000 GR provides lower compound viscosities, i.e. an improved processing behavior at equal loading. Furthermore, lower dynamic stiffness at low ambient temperatures and improved rolling resistance are achieved for tire tread compounds. Higher silica loadings will improve wet traction properties and allow to optimize winter properties. Bifunctional organosilanes like Si 69°, Si 75°, Si 266° or Si 363° are required for the use of ULTRASIL® 5000 GR in tire tread compounds. The use of diethylene glycol, triethanolamine or other alkaline accelerators might be necessary in order to achieve optimum in-rubber data.

Application fields are: 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 extremely stable chemically. 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, and removed 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 its exceeding the specified moisture content. For this reason, our recommended use-by date is 24 months after date of manufacture. Product more than 24 months old 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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