

Microsilica

Densified Silica-Fume Admixture

DESCRIPTION

Microsilica is a densified powder admixture with pozzolanic action, to be used in combination with plasticizers and superplasticizers for high-quality mortars, grouts and concrete.

Microsilica complies with the provisions and specifications of ASTM C1240 and AASHTO M307.

Microsilica is an amorphous silicon dioxide (silica) consisting of sub-micron spherical primary particles and agglomerates of these. The material is highly reactive in cementitious and ceramic bond systems.

The average diameter of a *Microsilica* sphere is about 0.15 micron. Although some of the spheres exist as single entities, most of them form primary agglomerates. The size of these may vary between 0.1 and 1 micron. This rather wide particle size distribution contributes to high packing efficiency.

WHERE TO USE

- High-performance concrete
- Steel and foundry: Blast furnace troughs and runners, ladle linings, sliding gates, etc.
- Cement: Preheater linings, lining in the chain system, and lining of inlet and outlet zones of rotary kilns
- Glass and ceramics: Kiln furniture
- Parking ramps
- Bridge decks

ADVANTAGES

- Improves concrete's density and impermeability
- Improves concrete's durability
- Improves concrete's strength, both early and ultimate

MIXING

Pour *Microsilica* into the mixer together with the other concrete ingredients and properly mix to obtain maximum dispersion of its granules.

DOSAGE

In order to give the best results, *Microsilica* should be used in quantities of 3% to 8% of the total dry mix's weight. When optimum particle packing is applied, the water demand is normally 4% to 5% of the total dry weight, depending on the *Microsilica* quantity. It is recommended to use *Microsilica* in combination with a plasticizer or a superplasticizer.

COMPATIBILITY WITH CEMENT AND OTHER PRODUCTS

Microsilica is compatible with most Portland cements. It is especially compatible with:

- Water-reducing admixtures manufactured by MAPEI.
- High-range, water-reducing admixtures manufactured by MAPEI.
- MAPEI-approved air-entraining admixtures.
- MAPEI-approved non-chloride accelerators.
- MAPEI-approved retarders and slump extenders.
- MAPEI-approved viscosity-modifying admixtures.
- MAPEI-approved form-release agents.

STORAGE

Store *Microsilica* for 2 years in a dry environment in its original, unopened packaging.

Product Properties

Consistency	Powder
Color	Gray
Density	Approx. 19.2 lbs. per U.S. gal. (2.3 kg per L)
Loose bulk density	41 to 48 lbs. per cu. ft. (655 to 770 kg per m ³)
Silicon dioxide (SiO ₂)	Minimum 85% (typically > 90%)
Primary function	Pozzolanic
Corrosivity	Non-corrosive. <i>Microsilica</i> does not contain calcium chloride or other chloride-based components. Its use will not contribute to the increased corrosion of reinforcing steel in concrete.

ADDITIONAL INFORMATION

Refer to the SDS for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com. **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

CONTACT INFORMATION

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For the most current product data and BEST-BACKEDSM warranty information,
visit www.mapei.com.
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