



LINYI KEMELE CO., LTD

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TECHNICAL DATA SHEET

Densified Microsilica, is a very fine pozzolanic material. This product comprises microscopic particles collected by filters downstream from the smelting process in silicon or ferrosilicon alloys. Adding it to concret and other materials, increases their density and wear resistance, which extends the life of structures. Microsilica stands' average diameter is between 0. 1um and 0. 15um. Its specific surface area is between 15 m/g and 27 m/g, which have superpower surfactivity.

Microsilica can be used in a variety of cementitious products such as concrete, grouts and mortars as well as refractory, ceramic, etc. applications.

SANYUAN DENSIFIED MICROSILICA' S PROPERTIES& SPECIFICATIONS:

PROPERTIES	
Product Description	Densified Microsilica GSM-94D
Color	Grey to medium grey powder
Bulk density-Full Densified	650-720KG/M3
SPECIFICATIONS	
Silicon Dioxide (SiO ₂)	94%
Moisture Content	0.8%-2.0%
Loss on Ignition (LOI)	1.6%-3.0%
Oversize percent retained on 45 -um (325	Max.8.0%
Specific Surface	18 m/g-27 m/g
Activity index %	≥105@7d ≥95@28d
Water demand	≤115%

APPLICATIONS OF MICROSILICA

1. MICROSILICA IN CONCRETE

High Performance Concrete (HPC) containing microsilica – has been identified as one of the more important advanced materials necessary in the effort to rebuild the nations infrastructure. In addition to increased strength



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and enhanced durability, HPC produced with microsilica delivers increased toughness; increased resistance to abrasion, corrosion and chemicals; and placement and life-cycle cost efficiencies.

Highway bridges, parking decks, marine structures and bridge deck overlays are subject to constant deterioration caused by rebar corrosion current, abrasion and chemical attack. Microsilica will protect concrete against deicing salts, seawater, road traffic and freeze/thaw cycles. Rebar corrosion activity and concrete deterioration are virtually eliminated, which minimizes maintenance expense.

Mainly key benefits include:

- Very low permeability to chloride and water intrusion.
- Extremely high electrical resistivity (20 to 100 times greater than ordinary concrete).
- Increased abrasion resistance on decks, floors, overlays and marine structures.
- Superior resistance to chemical attack from Chlorides, Acids, Nitrates and Sulfates.

2. MICROSILICA IN REFRACTORY AND CERAMICS

The use of microsilica in refractory castables provides better particle packing. It allows for less water to be used while maintaining the same flow characteristics. It also promotes low temperature sintering and the formation of mullite in the matrix of the castable. This produces a castable that has a low permeability to avoid gas, slag and metal penetration. Castables incorporating microsilica are stronger than microsilica containing castables especially at high temperatures with higher density they attain lower porosity and are more volume stable.

3. MICROSILICA IN REPAIR PRODUCTS (MORTARS & GROUTS)

Microsilica is used in a variety of cementitious repair products. Mortars or grouts modified with microsilica can be tailored to perform in many different applications—overhead and vertical mortars benefit from microsilica's ability to increase surface adhesion. Microsilica dramatically improves cohesiveness making it ideal for use in underwater grouts, decreases permeability in grouts used for post-tensioning applications and increases the resistance to aggressive chemicals.

Superior performance characteristics are:

- Non-bleeding and non-segregating
- Low permeability
- Lightweight
- Increased resistance to attack from chlorides, acids, nitrates and sulfate

04. MICROSILICA IN SHOTCRETE



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Microsilica Shotcrete – delivers greater economy, greater timesavings and more efficient use of sprayed concrete. Microsilica produces superior shotcrete for use in rock stabilization; mine tunnel linings, and rehabilitation of deteriorating bridge and marine columns and piles.

Superior performance characteristics are:

- Reduction of rebound loss up to 50%
- Improved production time
- Increased cohesion
- High electrical resistivity and low permeability
- High compressive and flexural strengths

5. MICROSILICA IN OIL WELL GROUTING

Whether used for primary (placement of grout as a hydraulic seal in the wellbore) or secondary applications (remedial operations including leak repairs, split, closing of depleted zones), the addition of microsilica enables a well to achieve full production potential meanwhile effect oil well grout blocking that prevents gas migration.

It provides these advantages.

- Improved flowability
- Reduced permeability better gas leakage control
- Increased durability and compressive strength
- Lightweight