



ADX.0079

## MICROSIL 90 GRIGIO

Selected and thickened grey  
silica fume

### Customs Code

2811 2200

### Packaging

- Bag 20 kg
- Big bag 1000 kg
- Pallet: 50 x (Bag 20 kg)

### Application

- To be added to other  
components

Family  
Admix

Type  
**Thickened micro silicates to improve the performance of  
concrete, mortar and slurry**

Product Lines

- Aqua
- Infratech
- Floor

Functional Categories

- **Improvement of mechanical and/or rheological performance of newly manufactured mortars, plasters and concretes**
- **Construction of high performance industrial concrete floors**
- **Manufacturing plasters and mortars**
- **Construction and maintenance interventions on airport runways and quays**
- **Structural maintenance of dams, reservoirs, ducts and water ducts**
- **Structural maintenance of bridges and viaducts**
- **Structural maintenance of tunnels**
- **Improvement of waterproofing capacity and/or impermeabilisation of mortars, plasters and concretes**
- **Construction of underground works in high performance waterproof concrete**
- **Construction of spritz-beton**
- **Prefabrication**

Components  
Single-component

Appearance  
Powder

## Certifications and legislations



**EN 13263-1:2005 + A1:2009**

Silica fumes for concrete

## General description

Selected grey silica fume for the production of high density and high performance conglomerates (waterproofness, chemical stability, mechanical strength etc.), for packaging sulphate-resistant, anti-leaching mortars, plasters, grouts and concretes.

## General features

MICROSIL 90 GRIGIO consists of high purity (greater than 90%) silica fumes, selected, processed and bagged. Silica fume, the only component of MICROSIL 90 GRIGIO, is created spontaneously during the production of silicon steel (special and limited production). For all intents and purposes, therefore, silica fume is nothing more than particles of SiO<sub>2</sub> released during machining processes of silicon metal and iron-silicon alloys, in the form of very fine powder with vitreous structure (amorphous silica at 90-95%).

These micro-granules, purified and selected, have a variable size between 0.01 and 1 µm, therefore much finer than cement granules, and are characterised by very high pozzolanic reactivity. Silica fume has been used now for over than 40 years all over the world for the fundamental improvement of rheological and performance characteristics of concretes, mortars and special plasters where they are introduced.

## Dosage

From 10 to 30 kg of MICROSIL 90 GRIGIO for each cubic metre of concrete to be made.

## Fields of application

Production of sulphate-resistant, sulphate-resistant, anti-leaching mortars, plasters, grouts and concretes, high performance in terms of watertightness, mechanical resistance, chemical resistance etc., in the realisation of civil engineering and hydraulic structures and works in marine, mountain, urban atmospheres etc.



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## Basic features



Highlighted product



Consumption (% by weight of binder):  
7-12 %



Nonflammable



Shelf-life:  
6 months



Available **colours**  
Black

## Technical specifications

Apparent density: ~ 600 kg/m<sup>3</sup>

Thickness (Blaine): 20 m<sup>2</sup>/g

## Applicable on

Plasters, Concrete, Cement-based or lime-based mortars

## Instructions for use

MICROSIL 90 GRIGIO must be poured into a concrete mixer subsequently to other solid components of the mixture: cement and aggregates. After mixing for about 30 - 45" add the mixing water, where possible with the addition of FLUID S, continue to mix until a strictly homogeneous mixture is obtained. Prepare test mixtures in order to determine the most suitable mix.

## Storage and preservation

Store the product in its original packing, in a fresh and dry environment, avoiding frost and direct sunlight.



## Chemical composition

SiO <sub>2</sub>	92+/-3%
Na <sub>2</sub> O	0.1 - 0.15%
CaO	0.67%
K <sub>2</sub> O	1+/-0.6%
Fe <sub>2</sub> O <sub>3</sub>	0.3 - 0.4%
P <sub>2</sub> O <sub>3</sub>	0.10%
Al <sub>2</sub> O <sub>3</sub>	0.2 - 0.25%
C (total)	1 - 1.10%
MgO	0.3 - 0.35%

## Fundamental performance for 10% dosage

Increments of strength and performance:

- mechanical strength **50 - 100%**
- to abrasion: **80 - 100%**
- to freeze/thaw cycles: **30 - 50%**



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- to sulphates: = **S.C.R.**
- to chlorides: **50 - 100%**
- to anti-leaching water **300%**
- resistivity: **500%**
- waterproofing **1000%**
- anticorrosive efficiency: **500%**
- carbonation speed (reduction): **70 - 100%**
- anti-leaching: **300 - 400%**
- pumpability: **300-400%**
- alkali-aggregate reaction: **practical inhibition**

granules of MICROSIL 90 per gram: **100,000**

## Warnings, Precautions and Ecology

The general information, along with any instructions and recommendations for use of this product, including in this data sheet and eventually provided verbally or in writing, correspond to the present state of our scientific and practical knowledge.

Any technical and performance data reported is the result of laboratory tests conducted in a controlled environment and thus may be subject to modification in relation to the actual conditions of implementation.

Azichem Srl does not assume any liability arising from inadequate characteristics related to improper use of the product or connected to defects arising from factors or elements unrelated to the quality of the product, including improper storage.

Those wishing to utilise the product are required to determine prior to use whether or not the same is suitable for the intended use, assuming all consequent responsibility.

The technical and characteristic details contained in this data sheet shall be updated periodically. For consultation in real time, please visit the website: [www.azichem.com](http://www.azichem.com). The date of revision is indicated in the space to the side. The current edition cancels out and replaces any previous version.

Please note that the user is required to read the latest Safety Data Sheet for this product, containing chemical-physical and toxicological data, risk phrases and other information regarding the safe transport, use and disposal of the product and its packaging. For consultation, please visit: [www.azichem.com](http://www.azichem.com).

It is forbidden to dispose of the product and/or packaging in the environment.

Protect and damp harden the mixtures obtained.

*MICROSIL 90 GRIGIO is produced/distributed by*



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