

# Microsil 90 Grigio

Selected and thickened grey silica fume



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.

**CUSTOMS CODE:** 2811 2200

**COMPONENTS:** Single-component

**APPEARANCE:** Powder

**AVAILABLE COLORS:** Gray

**PACKAGING AND DIMENSIONS:** Bag 20 kg - Big bag 1000 kg - Pallet: 50 x (Bag 20 kg)

## OBTAINED CERTIFICATIONS AND REGULATIONS



## FEATURES AND BENEFITS

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  $\text{SiO}_2$  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  $\mu\text{m}$ , 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.

## 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.

## ALLOWED SUPPORTS

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



## MODE OF 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.

## APPLICATION METHODS

To be added to other components

## TECHNICAL SPECIFICATIONS

Specific surface **23 m<sup>2</sup>/g**

Density **450 - 650 kg/m<sup>3</sup>**

Maximum relative humidity **0.5 %**

Residual particle size at the passer-by of 45 µm **< 5 %**

pH **7.5**

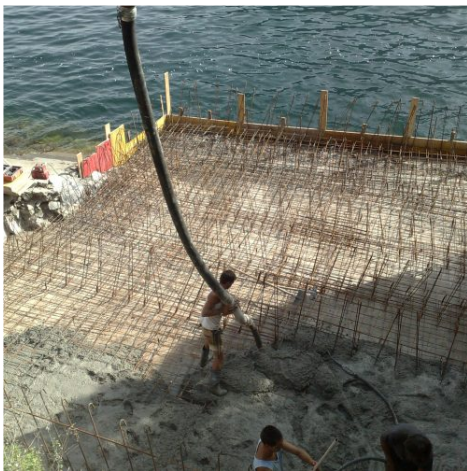
## CONSUMPTION

From 10 to 30 kg of Microsil 90 Grigio for each cubic metre of concrete to be made.

## STORAGE AND CONSERVATION

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

## PHOTO GALLERY



Produced and distributed by **AZICHEM srl**  
Via Giovanni Gentile, 16/A - 46044 Goito (MN), Italy  
Tel: +39 0376.604185 / 604365  
Fax: +39 0376 604398  
[www.azichem.com](http://www.azichem.com) - [info@azichem.com](mailto:info@azichem.com)

Update of **05-07-2022**  
Terms of sale and legal notices available at  
<https://www.azichem.com/general-sales-conditions>  
**Total pages of this document: 4**

## SPECIFICATION ITEM

The concretes, the mortars, grouts etc. will have to be characterised by high values of intrinsic waterproofing, resistance to sulphates, chlorides, to anti-leaching waters, etc., for this purpose the mix design will provide for the addition of MICROSIL 90 by AZICHEM srl, by reason of ..... % with respect to the weight of the cement. To restore the necessary workability, the specific superlubricant Fluid S by AZICHEM srl must also be provided, dosed by reason of 1% on the sum of the weight of binders and of MICROSIL 90 by AZICHEM srl.

## ADDITIONAL CONTENT



## 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%**
  - 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 AND PRECAUTIONS

Protect and dampen the mixtures obtained. 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.

