



ADX.0079

## MICROSIL 90

Selected and thickened silica fume

### Customs Code

2839.9000

### Dosage

12 - 25 kg /m<sup>3</sup>  
(Recommended: 20 kg /m<sup>3</sup>)

### Packaging

- Bag 20 kg  
- Pallet: 60 x (Bag 20 kg)

### Application

- To be added to other components



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Family  
Admix

Product Lines

- Aqua
- Infratech

Type

Powder additives for concrete, mortars and grouts

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 "in situ"
- 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

Silica fumes for concrete

## General description

Selected 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 consists of high purity (greater than 90%) silica fumes, selected, processed and bagged. Silica fume, the only component of MICROSIL 90, 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.

## 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.

## Available colours

- Black

## Basic features



Highlighted product



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



Nonflammable



Shelf-life:  
12 months



Solvent-free

## Technical specifications

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

## Applicable on

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

## Instructions for use

MICROSIL 90 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%**
- to sulphates: = **S.C.R.**
- to chlorides: **50 - 100%**
- to anti-leaching water **300%**



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- 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

Technical and performance data outlined in this document are the result of laboratory testing conducted in a conditioned environment, as such they can result as considerably changed from operating and application conditions. The need follows to carry out preliminary tests in actual use conditions.

The user is required to check the product's most recent Material Safety Data Sheet, reporting physical-chemical and toxicological data, risk phrases and other useful information on how to safely transport, use and dispose of the product and its packaging. It is also reminded that the product and its packaging must not be dispersed in the environment for any reason.

Protect and damp harden the mixtures obtained.

*MICROSIL 90 is produced/distributed by*



Via Giovanni Gentile, 16/A - 46044 Goito (MN), Italy  
info@azichem.com Tel. +39 0376.604185 /604365 Fax +39 0376 604398



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