

## 1. PRODUCT DESCRIPTION

**Metakaolin** is a product with highly pozzolanic properties obtained by thermal activation of kaolin clays (calcining at controlled temperature in a rotative kiln) and subsequent micronising or ultrafine grinding process of the obtained product.

**Metakaolin** is a dehydroxylated aluminium silicate. Its general formula is  $2\text{SiO}_2 \cdot \text{Al}_2\text{O}_3$ , with an amorphous non-crystallised structure, constituted of lamellar particles.

## 2. PRODUCT USE

**Metakaolin** is mainly used as **pozzolanic additive for concretes, mortars and coatings made from Portland cement or lime.**

**Metakaolin** chemically combines with water and calcium hydroxide, a normal cement hydration by-product, to produce silicates, aluminosilicates and additional cementitious compounds that result in a denser, higher strength concrete. The rapid pozzolanic reaction of metakaolin stabilises the calcium hydroxide as a cementitious product which reduces porosity and permeability. Concrete density is also increase by the small, finely divided particles of metakaolin which act as micro aggregates.

**Metakaolin** improves the properties of concrete and cement products considerably by increasing their compressive and flexural strenght while resisting chemical attack, reducing permeability, efflorescence and shrinkage, preventing alkali-silica reactions and corrosion and improving durability.

*Typical dosage:* Generally Metakaolin is used at 5 – 25 % replacements levels by weight of cement.

## 3. PHYSICO-CHEMICALS PROPERTIES AND SIZE DISTRIBUTION

### Physical properties

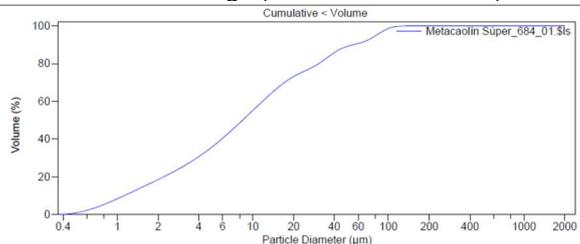
Apperance/Color.....	White to light beige powder
Loss on ignition.....	< 2 %
Pozzolanic Index (Chapelle test)...	700-1000 mg Ca(OH) <sub>2</sub> /g
Bulk density:	
– Loose.....	439 kg/m <sup>3</sup>
– Tamped.....	706 kg/m <sup>3</sup>
Specific gravity.....	2,55 g/cm <sup>3</sup>

### Chemical Analysis

% SiO <sub>2</sub> + Al <sub>2</sub> O <sub>3</sub> .....	94.69
% CaO libre.....	< 0.1
% MgO.....	0.11
% Na <sub>2</sub> O + K <sub>2</sub> O.....	< 1.6

### Particle size distribution

Ultrafine, average particle size, d<sub>50</sub> = 8 µm



## 4. Packaging

- Big – bags: 500 kg and 1.000 kg.
- Paper bags of 20 kg on pallet / Pallet: 1.000 kg

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# METAKAOLIN SUPER



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