

PRODUCT DATA SHEET

Sikacrete® M-100

Metakaolin Powder

PRODUCT DESCRIPTION

Sikacrete® M-100 is highly reactive metakaolin pozzolan for portland cement concrete, grouts and mortars applications. Sikacrete® M-100 meets the chemical requirements of ASTM C-618, Class N pozzolan.

USES

Sikacrete® M-100 is recommended for all high performance, high strength concrete and cementitious applications. Sikacrete® M-100 is highly beneficial for concrete that needs to resist water and chemical ingress and concrete required to resist mechanical abrasion. Due to its cream white color, Sikacrete® M-100 is also suitable to produce colored concrete and architectural precast concrete products.

CHARACTERISTICS / ADVANTAGES

How it works: Sikacrete® M-100 is a pozzolanic material, it is produced by thermally activating kaolin clay to produce an amorphous and chemically reactive material. Unlike other supplementary cementitious materials like flyash, slag and silica fume, Sikacrete® M-100 is not a by-product, it is specifically manufactured to its specification that improve the properties of concrete. The average particle size of Sikacrete® M-100 is 5 µm.

Pozzolanic action: Sikacrete® M-100 reacts with the free lime, Ca (OH)₂ produced during the hydration process of cement to produce Calcium Aluminates and additional Calcium Silicate hydrates which is responsible for the strength of the cementitious mixture or concrete.

PRODUCT INFORMATION

Void Reduction: The fine particles of Sikacrete® M-100 fill the tiny voids and capillary pores within the cement matrix and significantly reduce porosity to produce an extremely dense and impermeable concrete.

Advantages:

- Increased early and later age compressive and flexural strength, which allows flexibility in structural design and allows early stripping of forms.
- Increased resistance to bleeding and segregation.
- Improved abrasion and erosion resistance, which increases concrete durability in hightraffic areas
- Reduced permeability, which increases durability, resists chemical attack and increases service life of concrete.
- Improved corrosion resistance, due to reduced chloride ingress in concrete.
- Improved concrete performance in freeze thaw conditions.
- Reduced deleterious expansions in concrete due to alkali-silica reaction.
- Produces lighter color concrete due to its creamy white color.
- Reduced efflorescence.

Sikacrete® M-100 does not contain any calcium chloride nor any other intentionally added chloride containing ingredients.

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| Packaging | Sikacrete® M-100 is available in 40 lb. (18.1 kg) repulpable bags, 2200 lb. (1000 kg) super sacks and bulk delivery. |
| Appearance / Color | Creamy White |
| Shelf Life | Shelf life when stored in dry warehouse conditions above 35 °F (2 °C) is 24 months. |
| Storage Conditions | Sikacrete® M-100 should not be exposed to wet or moist conditions, this can cause hardening of the material. Once hardened, the material is not suitable for use in concrete. |
| Specific Gravity | Approx. 2.6 |

APPLICATION INFORMATION

Recommended Dosage Typical dosage rates range between 7 to 15 % of the total cementitious mass. Higher dosages up to 25 % may be used for improved performance or to meet specific project requirements. Sika strongly recommends that trial batches be performed using project materials in order to determine the optimum dosage for specified project requirements.

Mixing Sikacrete® M-100 may be stored in bulk storage in a cement silo and be batched in the same manner as bulk cement. The 40 lb. bags of Sikacrete® M-100 are repulpable or shredable bags, these bags are intended to be added directly to central or truck mixer without opening. The bags are designed to disintegrate through a combination of wetting and grinding the paper during concrete mixing.

Limitations: Do not introduce repulpable bags into concrete mixes with low water cementitious ratios and smaller size aggregates as these mixes may not develop sufficient mixing energy to fully repulp the bags. Always determine repulpability of bags by pretesting mix designs and batch sequence. Please contact your local Sika representative for more information and assistance.

Compatibility with cement and other admixtures: Sikacrete® M-100 is compatible with all known portland cements manufactured under ASTM specifications. The low water cement ratios typically specified for concrete containing metakaolin make the use of a high range water reducer, such as a ViscoCrete® or a Sikament® product essential in most applications. Sika recommends the use of Sika air entraining admixtures where air entrained concrete is required.

Workability and Finishing: Sikacrete® M-100 may affect the finishing characteristics of the concrete, particularly where warmer ambient conditions are encountered. The amount of bleed water from the concrete also may be reduced and Sika recommends the use of a finishing aid and evaporation retarder such as SikaFilm® to aid finishing.

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

OTHER RESTRICTIONS

See Legal Disclaimer.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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