

TECHNICAL DATA SHEET (TDS)

Sileto Capella Engineered Aggregate

Silicon dioxide
CAS# 7631-86-9
White powder

Description

Sileto Capella Engineered Aggregate is an engineered silica aggregate composed of more than 90% silicon dioxide (SiO_2). Derived from natural quartz mineral sources, the aggregate is processed and engineered to provide consistent particle characteristics for use in **Sileto Concrete**.

The material's high hardness, chemical inertness, and stable physical properties contribute to the production of durable, sustainable concrete with excellent mechanical properties. These characteristics also make **Sileto Capella Engineered Aggregate** suitable for a range of commercial applications where a high-quality silica aggregate is required.

Technical Data	
Chemical Name, Formula	Silicon Dioxide, SiO_2
Appearance	White powder or crystalline solid
Color	White to colorless
Odor	Odorless
Density	2.2–2.65 g/cm^3
Melting Point	1,710 °C
Boiling Point	2,230 °C
Solubility in Water	Insoluble
pH	Neutral
Refractive Index	~1.46 (fused silica)
Mohs Hardness	7
Thermal Conductivity	1.3–1.4 W/m·K
Chemical Stability	Stable under normal conditions
Shelf Life	Indefinite when stored properly

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Properties	
High Purity	Contains at minimum 98% SiO_2 with wide range of industrial applications.
Resistant to Abrasion and Chemicals	With a Mohs hardness of 7, along with high weather resistance and chemical stability, Sileto Capella exhibits excellent resistance to abrasion and chemical attack.
High Heat Resistance	Melting point is greater than 1600°C.
Low Moisture Content	Shipped with low moisture content of less than 0.3%

Applications

Silicon Dioxide is used as an engineered aggregate in composite materials to enhance mechanical strength, hardness, wear resistance, and dimensional stability. Common applications include polymer composites, cast polymer products, engineered stone, synthetic stone, polymer concrete, industrial flooring systems, architectural surfaces, adhesives, sealants, grouts, and other resin-based composite formulations.

Packaging Information

Sileto Capella is available in 22.7 kg (50 lb) multi-wall bags with moisture-resistant liners, or bulk shipment via dry bulk tanker. Packaging materials are designed to protect the product from moisture and contamination during storage and transportation.

Storage and Transportation

This material should be stored in a dry environment in tightly closed containers. Protect the material from moisture, direct contact with water, and environmental contamination. When stored under recommended conditions, the product has an unlimited shelf life.

Minimize excessive handling and vibration during transport to reduce particle-size segregation. Store on pallets and under cover to maintain product consistency.

Appropriate personal protective equipment (PPE), including safety goggles and dust masks or respirators, should be worn during handling to minimize exposure to airborne dust. Good industrial hygiene practices should be followed at all times.

Health and Safety

This material is inert and non-flammable. Contains crystalline silica that can be respirable. Avoid prolonged exposure due to the risk of silicosis. This material is non-toxic to the environment as it is a natural mineral.

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