



## Nano Shield SC1

### Product Description

Nano Shield is an aqueous dispersion formed by different types of solid insulating particles, vehicle, additives and water, where the dimensions of its ingredients are between 14nm and 12mm. When applied on an appropriate substrate, it becomes a solid film, given the evaporation of the volatile component through chemical reaction, with a high resistance to abrasion.

### Benefits

- Nontoxic and non-flammable making it safe around humans and in closed enclosures.
- Water as a solvent.
- Ambient curing material.
- Adhesion to most surfaces with minor surface preparation.
- Sprayable application and ease of maintainability.
- Will function with direct (impinging flame) or indirect heat.
- Adapts to complex geometries due to high viscosity and adhesion properties.
- Improved thermal properties at higher temperatures. Emissivity will account for more heat transfer at temperatures above infra-red spectrum.
- Non-sacrificial operating temperatures up to 1800°C with minimal added weight
- Between 200 to 1200°C, it outperforms competing products with its ease of application and superior technical performance.

### Specifications

Color	Light Gray
Appearance	High thickness emulsion
Aspect	Gray or slightly Gray
Odor	There is no predominant odor.
PH	8-9

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Fusion point	Not applicable
Freezing point	0°C
Initial boiling point	100°C
Evaporation Rate	<1
Flash point	Not applicable
Flammability	Nonflammable
Lower / Upper Flammability and Explosive Limits	Not applicable
Vapor pressure	Between 45 & 90 kPa (Between 337.5 & 675 mm Hg) at 50°C
Vapor density	(Air = 1 ) 3 to 4
Relative density	between 1100 & 1350 kg/m <sup>3</sup> (between 1.00 & 1.25 g/cm <sup>3</sup> density) a 15°C
Non-volatile solids	66%
Solubility in water	Soluble in water
Auto-ignition temperature	Not applicable
Decomposition Temperature	>1450°C
Viscosity	Kinematics: <7 mm <sup>2</sup> /s (<7 cSt) a 40°C

## Applications

It can be used as thermal insulation and fireproof when the application requires high resistance to abrasion. Nano Shield SC1 can be used in projects and/or equipment that operate in a temperature range of 200 to 1,800°C continuously. A key benefit of this product family, however, is its use in temperatures above 1,000°C, where currently there are no commercial products that satisfy the conditions of performance, application and durability.

All products in the Nano Shield family are resistant to direct flame and radiated at temperatures above 1,400°C. Within this family there are products that can be heated and cooled immediately quenched in water without cracking.

## Packing and Handling

### Delivery Form

Beige/Grey aqueous dispersion

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## **Packaging**

Generally, the product is packed in plastic bucket containers with 14.4Kg, but can be packed in different volumes/mass quantities at the request of the client.

## **People**

Nontoxic and non-flammable making safe around humans in closed enclosures

## **Planet**

High material efficiency and minimized waste in production through recycling of raw materials

## **Performance**

Joint developments with customers on formulations.

Consistent high-quality production.

## **Safety**

For regulatory such as the classification and labeling as dangerous substances of goods please refer to our corresponding Material Safety Data Sheet.

## **Contact Us**

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