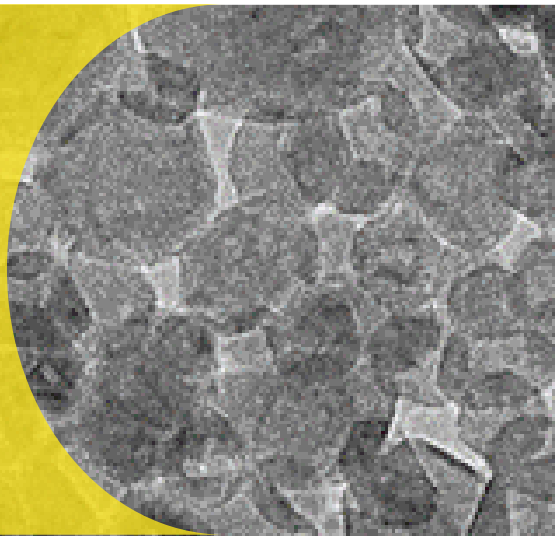
MATHYM

INNOVATIVE NANOMATERIALS

CaF_2

Calcium fluoride datasheet



MATHYM
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CaF_2 – Calcium fluoride nanoparticles in suspension

Our offer

We offer calcium fluoride nanoparticles dispersed in a variety of media. They can be used as durable remineralizing agents in dental composites and dental varnishes where their bioactivity is due to calcium and fluoride ion release. They are compatible with all dental monomers.

Our calcium fluoride dispersions can also be used to produce low refractive index coatings with high light transmission and mechanical resistance. The refractive index of calcium fluoride is significantly lower than that of metal oxides, and its optical window is considerably wider.

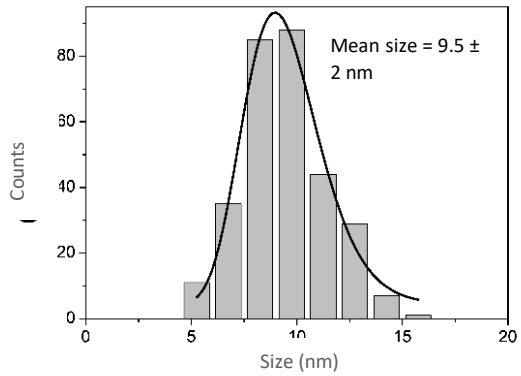
Main benefits

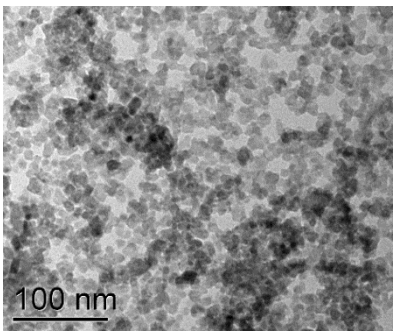
- Smallest CaF_2 particles on the market
- High solid content
- High transparency of dispersions
- High translucency of dental composites
- High depth of cure of dental composites

Main properties

Chemical formula	CaF_2
Crystal structure	Cubic
Morphology	Spherical or cubic
Average particle size	10 and 20 nm
Density (theoretical)	3.2 g/cm^3
Refractive index (theoretical)	1.43
Dispersion solid content	Up to 50 wt.% depending on dispersion medium
Dispersion medium	Water, alcohol, acetone, methacrylate-based dental resin, customer specific monomer mixture
Type of functionalization	Depends on dispersion medium and application requirements
Viscosity (example 1)	CaF_2 in UDMA (20wt.%): 200 Pa.s (shear rate: 0.1s^{-1})
Viscosity (example 2)	CaF_2 in TEGDMA (30wt.%): 40 Pa.s (shear rate: 0.1s^{-1})

Example of size distribution





Samples and Safety Data Sheet are available.

Provided data are typical values, they are not contractual.

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