

ViCALity™ Light

USP / FCC Precipitated Calcium Carbonate

ViCALity™ PCC Products:

ViCALity™ Light Precipitated Calcium Carbonate (PCC) is one of a family of low lead calcium carbonates available in a wide variety of sizes and shapes to meet the needs of formulators of foods, drugs, nutritionals and personal care products. Containing less than 500 ppb lead, the ViCALity™ PCCs are suitable for many applications that must meet the lead requirements of California Proposition 65.

ViCALity™ PCCs meet and exceed the requirements for Calcium Carbonate of the United States Pharmacopeia 24 and of the Food Chemicals Codex, Fourth Edition. All are certified as Kosher. Calcium carbonate is Affirmed GRAS (Generally Recognized As Safe) by the US FDA (21 CFR 184.1191) with no limitations other than good manufacturing practices. This allows the use of calcium carbonate as both a direct and indirect food additive. ViCALity™ PCC products are manufactured in the Specialty Minerals plant in Adams, MA under stringent quality assurance procedures and good manufacturing practices.

ViCALity™ Light PCC:

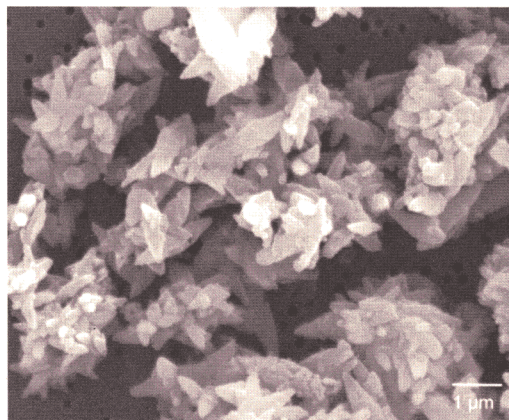
ViCALity™ Light PCC is one of three open structured scalenohedral calcites which were developed to yield a range of low powder densities. ViCALity™ Light PCC is the middle of the three products, a 1.9 micron particle, with high surface area and high oil absorption.

There is no exact ultra-low lead equivalent to ViCALity™ Light PCC; CalEssence® 160 PCC provides the closest match.

Characteristics:

- Low density
- High oil absorption
- High surface area
- Builds viscosity in liquids and pastes
- Less than 500 ppb lead
 - Good for most Proposition 65 uses
- High elemental calcium level
 - ~40% calcium
- High bioavailability - equal to milk calcium
- Economical in use
- No calories, carbohydrates or fats
- Non-dairy, lactose-free

Scanning Electron Micrograph:



magnification: 10,000X

Applications:

Because of the open structure and high surface area of the three scalenohedral ViCALity™ PCC products, they are excellent where there are needs for absorbing liquids and oils, producing thick masses or high viscosity liquids, and for low density powders. The high surface area helps maximize reaction rates and uniformity when used as a raw material in synthesis.

Some uses for ViCALity™ Light PCC are:

- Viscous personal care cream and lotion products
- Powdered beverage mixes
 - Soy, milk, chocolate, sport
- Clear beverages, when pre-reacted with a food acid
- Flavor absorbent or carrier

Typical Physical Properties

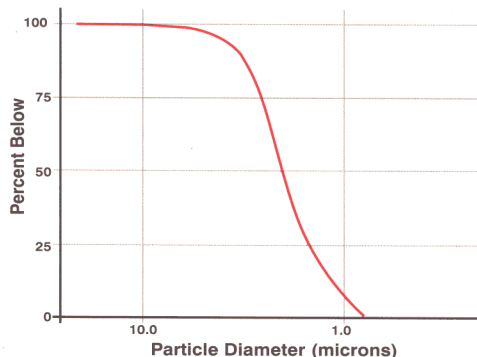
Crystal habit	Calcite
Particle Shape	Scalenohedral
Particle Size, median, microns	1.9
mode, microns	2.0
Surface Area, meters ² /gram	7.8
Oil Absorption, grams oil/100 grams	76
Tapped Density, grams/cc	0.46
pounds/ft ³	28.7
Bulk Density, grams/cc	0.25
pounds/ft ³	15.6
Specific Gravity	2.71
pH	9.8
Moisture, %	0.2
Dry Brightness Hunter Y, Rd value	.97
Lead, parts per billion	< 500
Solubility, in water, pH 7	Insoluble
in acid	Soluble

Note:

These are typical values, and should not be used to set specifications.

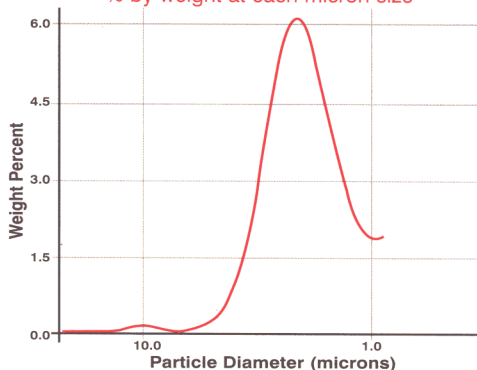
Cumulative Particle Size Distribution

Total % by weight below each micron size



Particle Size Distribution

% by weight at each micron size



Dispersion and Slurry Viscosity:

High shear should be applied to a high solids suspension in order to achieve the smallest particle size in a dispersion.

After high shear dispersion for 10 minutes, the Brookfield RVT viscosity of a slurry in water, measured at 20 rpm, is:

- 30% solids375 cps
- 40% solids2,700 cps
- 50% solidspaste

If problems are encountered in preparing high solids slurries, an appropriate pigment dispersant should be used.

Product Code: 100-0490-3

Packaging:

ViCALity™ Light PCC is packaged in 50 pound, three-ply kraft bags. The standard shipping unit is a 54" x 42" 2-way pallet of 50 bags, a total of 2,500 pounds. Pallets include slipsheets and shrinkwrap. Semi-bulk packaging, typically in 2,000 pound sacks, is also available. Contact Inside Sales or your SMI Representative for details.

FDA Codes:

The Specialty Minerals plant in Adams, MA is registered with the US FDA as a Drug Establishment. The registration number for the plant is 1214544. The National Drug Code (NDC) for ViCALity™ Light PCC is 053004-0490-3 for product supplied in 50 pound bags.

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