

CalEssence® 300 Enhanced Purity

USP / FCC Precipitated Calcium Carbonate

CalEssence® PCC Products:

CalEssence® 300 Precipitated Calcium Carbonate (PCC) is one of a family of enhanced purity, ultra-low lead calcium carbonates developed for those needing to meet the lead requirements of California Proposition 65. CalEssence® PCC products contain less than 125 parts per billion lead.

CalEssence® 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 makes calcium carbonate suitable for both direct and indirect food applications. CalEssence® PCC products are manufactured in the Specialty Minerals plant in Adams, MA under stringent quality assurance procedures and good manufacturing practices.

CalEssence® 300 PCC:

CalEssence® 300 PCC is an ultra-low lead calcite which is a 3 micron clustered cubic particle. It has a moderately high oil absorption, similar to that of the smaller CalEssence® 70 and 80 PCCs, but has a higher powder density.

CalEssence® 300 PCC is the ultra-low lead equivalent of ViCALity™ Heavy PCC.

Characteristics:

- 3 micron particle size
- Higher density
- Moderately high oil absorption
- Less than 125 ppb lead
 - Good for all Proposition 65 uses
- High elemental calcium level
 - ~40% calcium
- Low loadings to achieve desired calcium fortification level
- 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:

CalEssence® 300 PCC fits in the middle of the CalEssence® PCC family, in terms of particle size, density and oil absorption. It has a small enough particle size to work well in foods, with the 3 micron particle size being well below the taste's size-detection limit. In solids, taste tends to improve as particle size increases.

The 300 grade has a high enough density to reduce the volume occupied by a given amount of calcium. But for the smallest possible tablets, the CalEssence® 1500 PCC should be chosen.

Some of the uses for CalEssence® 300 PCC are:

- Cereal fortification
 - In batter, flavor bit, coating or dry blend
- Snack bars, energy bars, diet bars
- Baked goods
 - Cookies, crackers, pancakes, waffles, cakes
- Snack foods
- Flour enrichment
- Dry food mixes
- Vitamin and mineral premixes
- Antacid tablets with a medium tablet size
- Calcium dietary supplements with a medium tablet size
- Low lead calcium salt manufacture

Typical Physical Properties

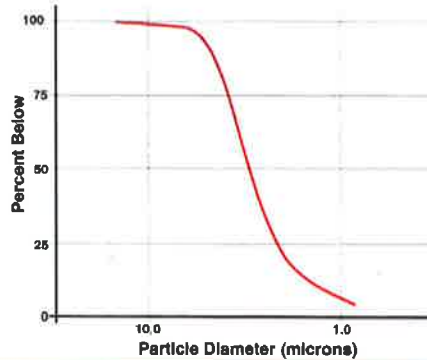
Crystal habit	Calcite
Particle Shape	Cubic
Particle Size, median, microns	3.0
mode, microns	3.2
Surface Area, meters ² /gram	3.0
Oil Absorption, grams oil/100 grams	35
Tapped Density, grams/cc	0.87
pounds/ft ³	54.3
Bulk Density, grams/cc	0.44
pounds/ft ³	27.5
Specific Gravity	2.71
pH	9.8
Moisture, %	0.2
Dry Brightness Hunter Y, Rd value	96
Lead, parts per billion	< 125
Solubility, in water, pH 7	Insoluble
in acid	Soluble

Note:

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

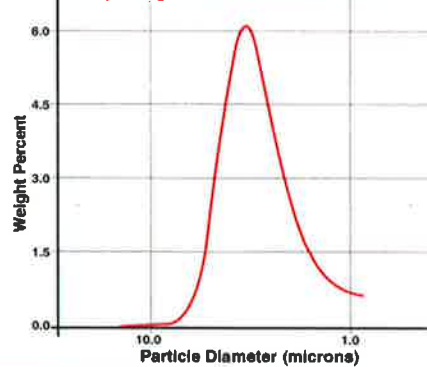
Cumulative Particle Size Distribution

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% solids75 cps
40% solids250 cps
50% solids1000 cps

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

Product Code: 100-0580-3

Packaging:

CalEssence® 300 PCC is packaged in 50 pound, three-ply kraft bags. The standard shipping unit is a 48" x 40" GMA 4-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 CalEssence® 300 PCC is 053004-0580-3 for product supplied in 50 pound bags.

Specialty Minerals Inc.

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For order placement:

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Direct dial: 610-997-8306
Fax: 610-861-5179

Visit Our Website:

www.mineralstech.com

For Information and Samples:

Inside Sales – toll free: 877-229-9653
Direct dial: 610-882-8542
Fax: 610-882-9846
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