

## ViCALity™

### USP / FCC Precipitated Calcium Carbonates

#### ViCALity™ PCC Products:

ViCALity™ Precipitated Calcium Carbonates (PCCs) are a family of low lead calcium carbonates which have long set the standard for high purity and performance in foods, pharmaceuticals, nutritionals, personal care, medical rubber goods, and other uses.

The “ViCALity” name is now used to designate products formerly known as USP PCC.

ViCALity™ PCC products contain less than 500 parts per billion lead, at the 99% confidence level, based on a 10-year statistical study. Thus

they are proving useful for many of the products governed by California Proposition 65 lead-in-calcium regulations.

The eight ViCALity™ PCC grades not only vary in particle size, from 0.7 micron up to 12 microns, but come in a variety of particle shapes, as well. Together these result in calcium carbonates with a broad spectrum of physical properties such as surface area, tapped density and oil absorption, which can aid in optimizing the performance and sensory qualities of the consumer product in which they are used.

#### Typical Properties ViCALity™ Precipitated Calcium Carbonates

Grade	ALBAFIL™	ALBAGLOS®	Extra Light	Light	Medium	Heavy	Extra Heavy	Ultra Heavy
Particle Shape	Prismatic	Prismatic / Cubic Blend	Scaleno-hedral	Scaleno-hedral	Scaleno-hedral	Cubic	Cubic	Semi-regular Prismatic
Median Particle Size, microns	0.7	0.8	1.8	1.9	2.6	3.0	4.5	12.0
Surface Area, meters <sup>2</sup> /gram	7.0	6.4	8.5	7.8	6.9	3.3	2.4	0.7
Tapped Density, grams/cc	0.60	0.57	0.43	0.46	0.55	0.85	1.00	1.50
Lead, parts per billion	<500	<500	<500	<500	<500	<500	<500	<500

#### Characteristics:

- Low lead - less than 500 ppb
  - Good for most Proposition 65 uses
- Consistent, reliable global supply
- Formulating flexibility - many sizes and shapes
- High calcium content: ~40%
- Low loadings to achieve desired fortification level
- High bioavailability
- Economical in use
- No calories, carbohydrates or fats
- Non-dairy, lactose-free

#### Applications:

- Nutritional supplements
- Chewable and swallowable tablets, soft chews, lozenges, effervescent, gums
- Beverages, liquid supplements, powdered drink mixes - Soy or milk-based
- Cereals, baked goods, breakfast foods
- Snack foods, nutrition bars, crackers
- Dairy products, milk, ice cream, yogurt
- Vitamin / mineral premixes
- OTC and proprietary pharmaceuticals
  - Antacids at lower dosage levels
- Natural rubber detackification
  - Surgical gloves, condoms, slab dip, crumb

### Which Grade To Choose?

The super dense Ultra Heavy or high density Heavy and Extra Heavy grades are chosen to minimize tablet size of antacids, calcium supplements and other nutritional formulas. They are the grades for high concentration granulations. To make soft chew forms or effervescent, or if a large tablet is desired, the ALBAFIL™, ALBAGLOS® or Extra Light PCC grades are recommended. These latter three are also often the choice in beverages, ice creams and liquid milk or soy products because of their small size.

Foods, including baked and formed goods such as cereals, snack bars, crackers, cookies, waffles and pancakes, usually employ one of the moderately large grades, such as Heavy or Extra Heavy, as better taste tends to result from the use of larger particles in solids. Extra Light is best in redispersible powders because of its open structure and rapid dispersibility.

More detailed properties, characteristics and applications for each of the ViCALity™ low lead Precipitated Calcium Carbonate products are given in the individual data sheet for that grade. Each data sheet includes a scanning electron micrograph showing the particle shape. An Information Sheet (IS-1102) showing all of the particle shapes and comparing their properties is also available. Contact Inside Sales at the number below for copies.

### Packaging:

ViCALity™ PCCs are packaged in 50 pound, three-ply kraft bags. The standard shipping unit is a 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 for details.

### Regulatory Status:

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.

#### Requirements For Calcium Carbonate: U.S. Pharmacopeia 24 and Food Chemicals Codex 4<sup>th</sup> edition

	USP 24	FCC 4
Calcium Carbonate	> 98.0 %	> 98.0 %
Magnesium & Alkali Salts	< 1.0 %	< 1.0 %
Acid Insolubles	< 0.2 %	< 0.2 %
Loss On Drying	< 2.0 %	< 2.0 %
Lead	< 3 ppm	< 3 ppm
Arsenic	< 3 ppm	< 3 ppm
Barium	Negative	Negative
Fluoride	< 0.005%	< 0.005%
Heavy Metals (as Pb)	< 0.002 %	< 0.002 %
Iron	< 0.1 %	—
Mercury	< 0.5 ppm	—

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.

The ViCALity™ PCC products are manufactured in the Specialty Minerals plant in Adams, MA under stringent quality assurance procedures and good manufacturing practices.

This plant is registered with the US FDA as a Drug Establishment. The facility registration number is 1214544. The National Drug Code (NDC) for each of the grades is given on the data sheet for that grade.

**Specialty Minerals Inc.**  
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**For order placement:**  
Customer Service – toll free: 877-684-7627  
Direct dial: 610-997-8306  
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**Visit Our Website:**  
[www.mineralstech.com](http://www.mineralstech.com)

**For Information and Samples:**  
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