

Paints and Coatings

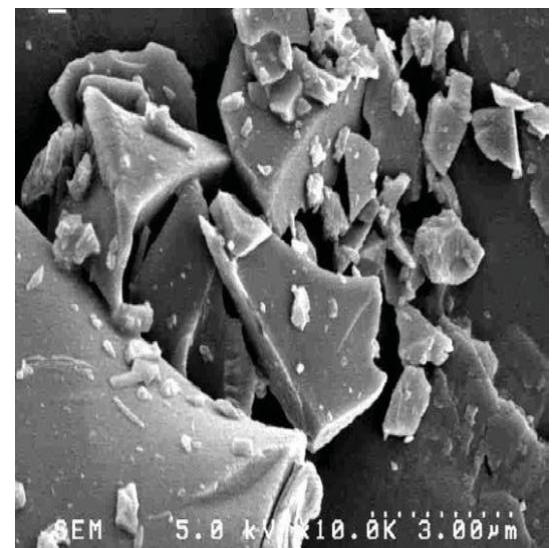
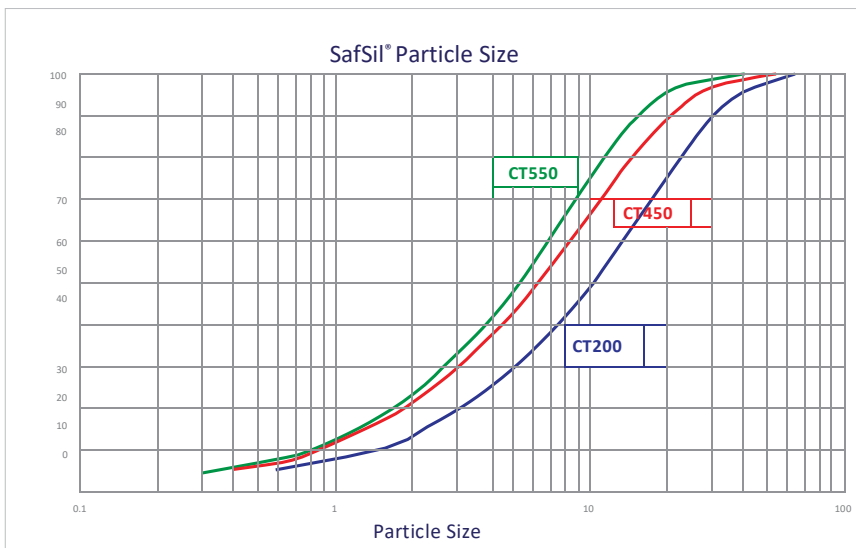
CR Minerals SafSil® and Navajo Brand® pumice grades are widely used in the paint and coatings industry. The low density and unique particle morphology of the vitreous pumice imparts many desirable properties to paint formulations.

SafSil® Products

SafSil® products are high performance functional fillers that contain less than 0.1 % respirable crystalline silica. SafSil® may be used successfully to replace many common fillers such as ground silica, nepheline syenite, calcium carbonate, and talc. “Green” paints may be produced with SafSil® because it is an all-natural material. SafSil® is used in both water and solvent borne systems.



Chemical and Physical Properties of SafSil® Pumice



	CT200	CT450	CT550
Median Particle Size (Microns)	12	7	5
Hegman Grind	2	4.5	5.5
Oil Absorption (ASTM D281)	26	27	29
GE Brightness	78	79	80
Specific Gravity	2.34	2.34	2.34
Wt./Gal	19.5	19.5	19.5
Hardness, Mohs Scale	5.5 - 6.0	5.5 - 6.0	5.5 - 6.0
Refractive Index	1.5	1.5	1.5
pH (10% in Water)	9	9	9
Moisture Content	<1%	<1%	<1%

Paints and Coatings (cont.)

Chemical Analysis

		wt. %
Silicon Dioxide	SiO ₂	73
Aluminum Oxide	Al ₂ O ₃	12
Potassium Oxide	K ₂ O	<4
Sodium Oxide	Na ₂ O	<4
Calcium Oxide	CaO	<2
Magnesium Oxide	MgO	<2
Titanium Dioxide	TiO ₂	<2
Ferrous Oxide	Fe ₂ O ₃	<2



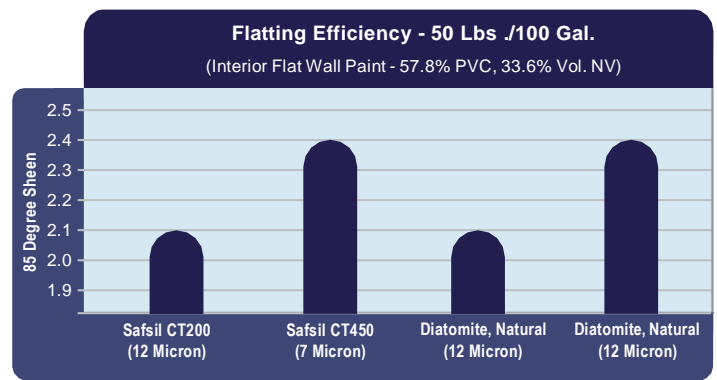
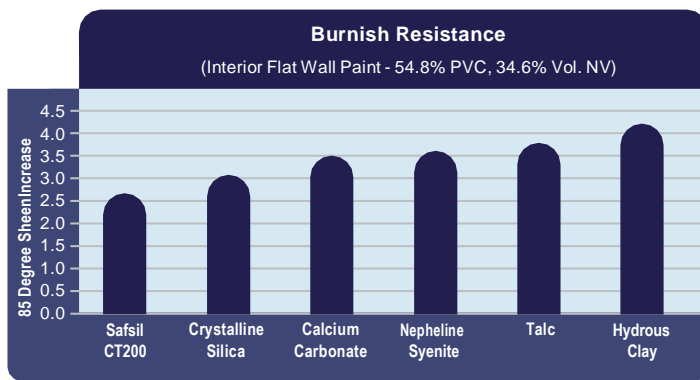
Interior Paints

SafSil® pumice provides enhanced qualities in interior paints. By proper choice of pumice particle size, the following properties can be improved:

- Burnish resistance
- Flatting
- Abrasion resistance
- Touch-up

The larger particle sizes of SafSil® CT200 and CT450 contribute most to improving these properties.

SafSil® has also demonstrated excellent efficiency replacing natural diatomite in many paints.



The finer SafSil® CT450 and CT550 grades are a natural for use in paints with higher sheen/gloss requirements. Excellent satin and eggshell paints are being produced with these pumice materials.

Paints and Coatings (cont.)

Exterior Paints and Stains

SafSil® is used to formulate exterior paints, primarily to improve the following properties:

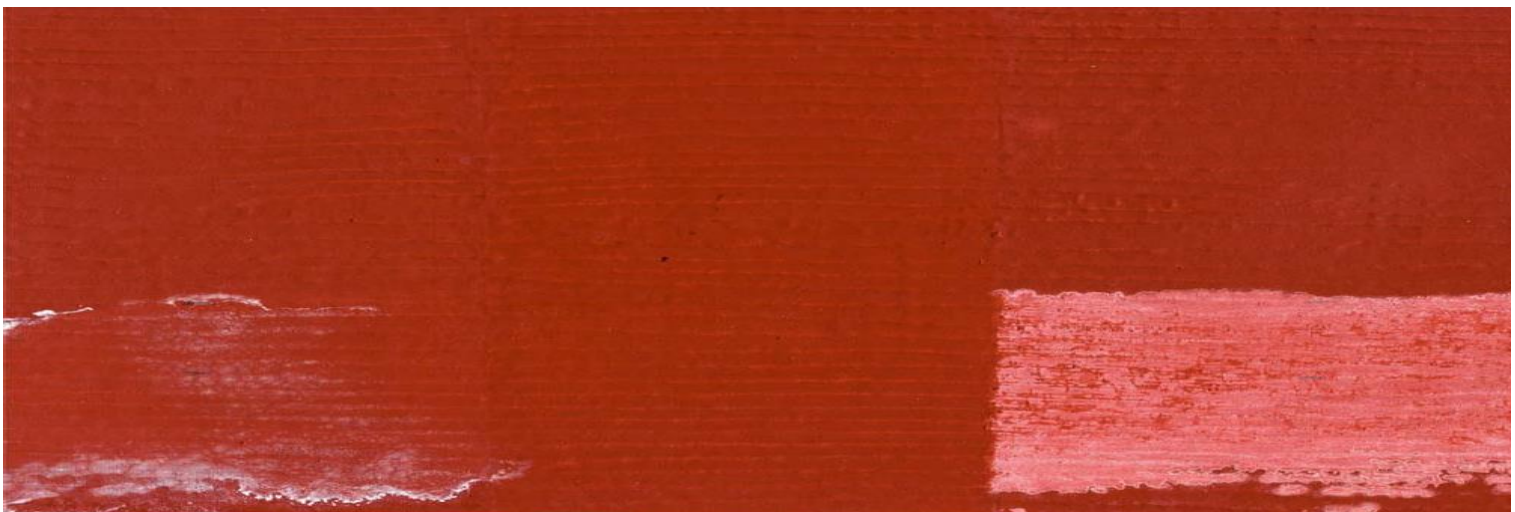
- Tint retention
- Frost resistance



Paint #1 Diatomite, Calcined- 11 microns
 Paint #2 Diatomite, Calcined- 9 microns
 Paint #3 Diatomite, Natural- 11 microns

Paint #4 Diatomite, Natural- 9 microns
 Paint #5 SafSil CT 200- 12 microns
 Paint #6 SafSil CT 450- 7 microns

Exterior Flat – Neutral Base Spot Test 5% Sulfuric Acid



Nepheline Syenite

SafSil

CaCO₃

Floor Paints

The hardness, chemical resistance, and abrasive qualities of SafSil® pumice make it an ideal candidate for floor and deck coatings. SafSil® can also be used in driveway sealers. The material contributes to rheology and helps film reinforcement. Larger particle size Navajo Brand® pumice grades are used for non-skid floor coatings. Grades such as Grade ½ and Grade 3 have been used successfully.

Texture Paints

Navajo Brand® pumice such as Grade 0-1/2, Grade ½, and Grade 3 are ideal candidates for texture paints. The choice of the grade will depend on the profile desired. Some end users combine several grades to achieve the effect they want.

Primers and Undercoats

SafSil® is used for both architectural and industrial primers. The low soluble salt content of SafSil®, as measured by the ASTM D2448 Test Method, imparts improved corrosion properties to maintenance primers. Primers containing SafSil® demonstrate excellent “tooth” for subsequent topcoat adhesion. Even though SafSil® is a relatively hard material, with a Mohs hardness of 5.5-6.0, primers produced with SafSil® exhibit very good sanding qualities.

Industrial Maintenance Finishes

SafSil® CT550 is an excellent candidate for OEM finishes.

Powder Coatings

SafSil® pumice is used successfully in powder coatings. The finer CT 450 and CT 550 grades are beneficial for systems with higher gloss and angular sheen, and the coarser CT200 and CT 450 grades work well for gloss control. SafSil® possesses greater Mohs Hardness than the more commonly used fillers in powder coatings. Dosages less than ten percent have increased film hardness and scratch resistance. Although SafSil® is relatively hard, it does not present any equipment wear issues. The exterior performance of SafSil® is well proven. Color and gloss retention are positive attributes of the material.

Tennis Court Coatings

SafSil® is used successfully in tennis court systems. The material provides film reinforcement, sheen control and outstanding tint retention.

Traffic Paint

SafSil® is efficacious for traffic paints. The hardness and abrasion resistance of the material makes it ideal for replacing some of the calcium carbonate in most systems. SafSil® can replace diatomite used by some formulators for flattening. Improved performance will occur due to the obtaining increased “free binder”.

Additional Information at www.CRMinerals.com

To place an order or obtain additional information, please contact CR Minerals at 505-428-2940, or contact your local distributor.

CR Minerals is a worldwide supplier of pumice products to many diverse markets. It operates a state of the art processing facility in Ohkay Owingeh, New Mexico.

Although the information and suggestions in this publication are believed to be correct, CR Minerals makes no representations or warranties as to the accuracy or completeness of this information.