

Calcium Carbonates



18 May 2008

Imerys is a leading producer of CaCO_3

- Calcium carbonates are composed of the crystalline mineral calcite
 - Occurs as chalk, marble or limestone
- Chalk is usually finely textured and relatively impure
 - Imerys has deposits in the UK and France
- Marble deposits are re-crystallised limestone
 - Requires conditions of extreme heat & pressure
 - Pure marble is exceptionally bright
 - Imerys has deposits in Italy, France, Turkey and North Africa
- Calcium carbonates are widely used as extenders in a variety of coatings
 - Add volume and reduce formulation cost

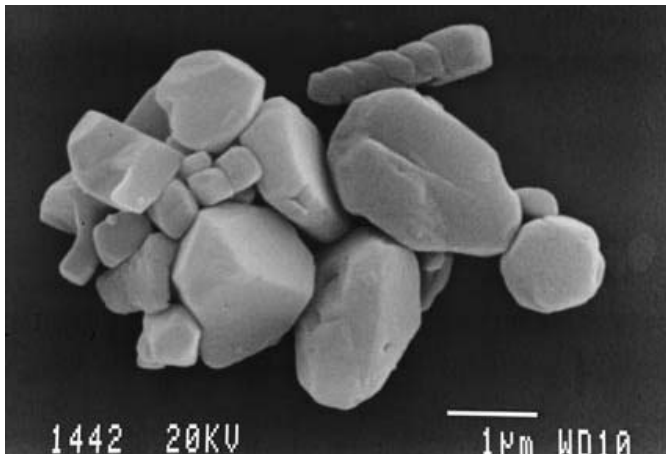


IMERYS is a leading producer of high quality calcium carbonates and has production sites throughout the world

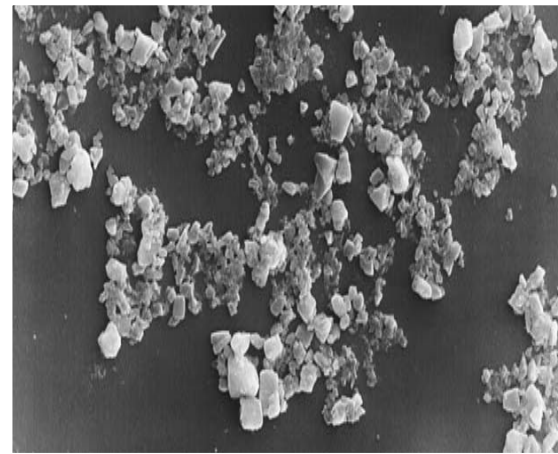
Calcium Carbonate Properties

- Particle shape: nodular
- Specific gravity: 2.7
- Refractive index: 1.65/1.48 (birefringent)
- Moh's hardness: 3
- Oil absorption: 17-20 g oil/100g

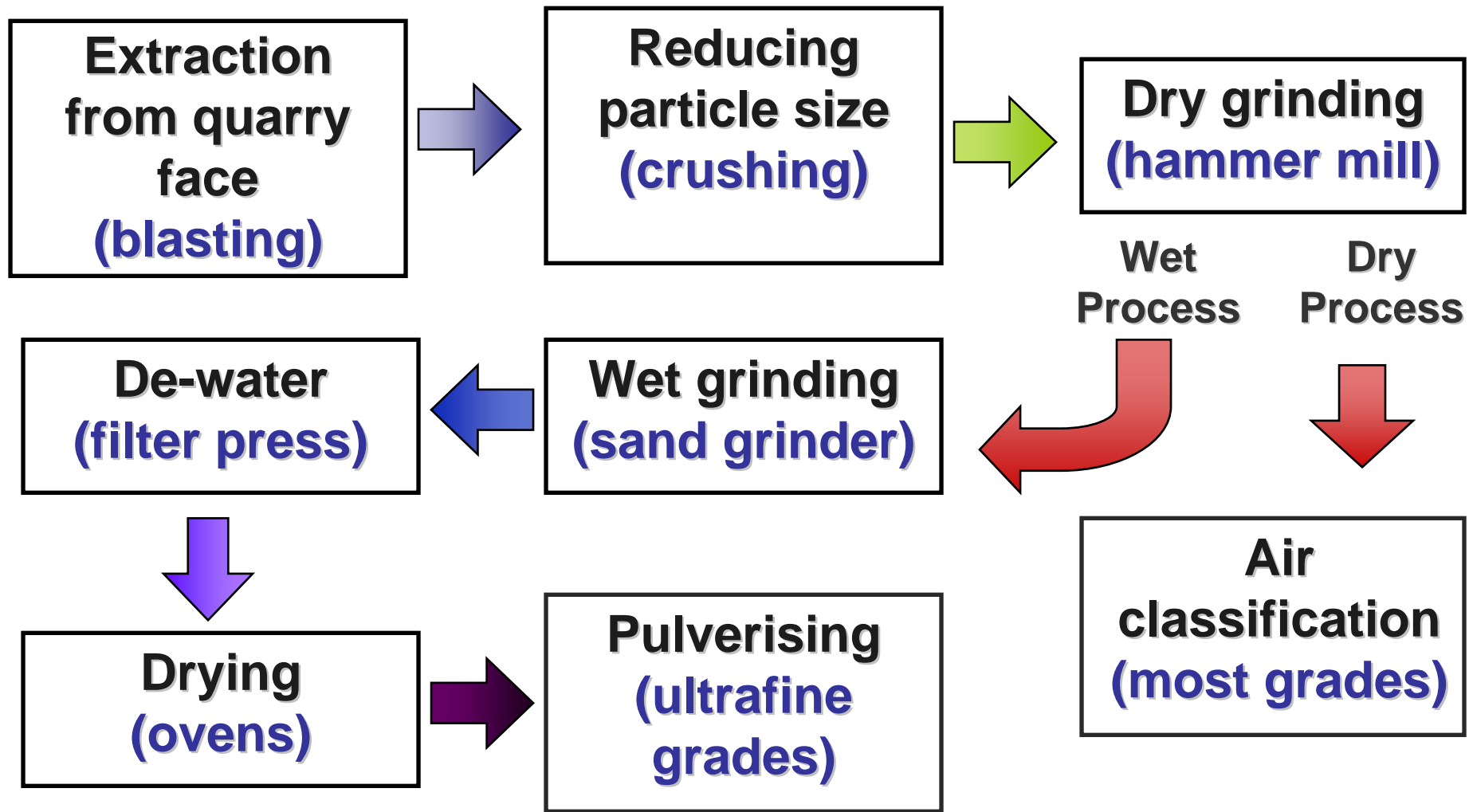
Chalk



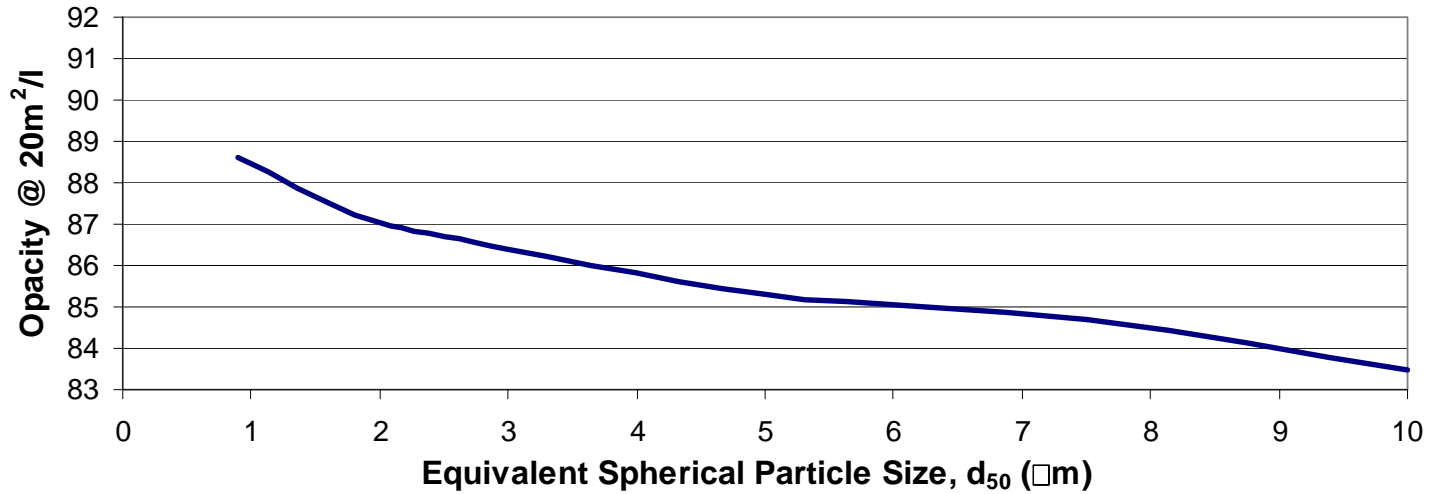
Marble



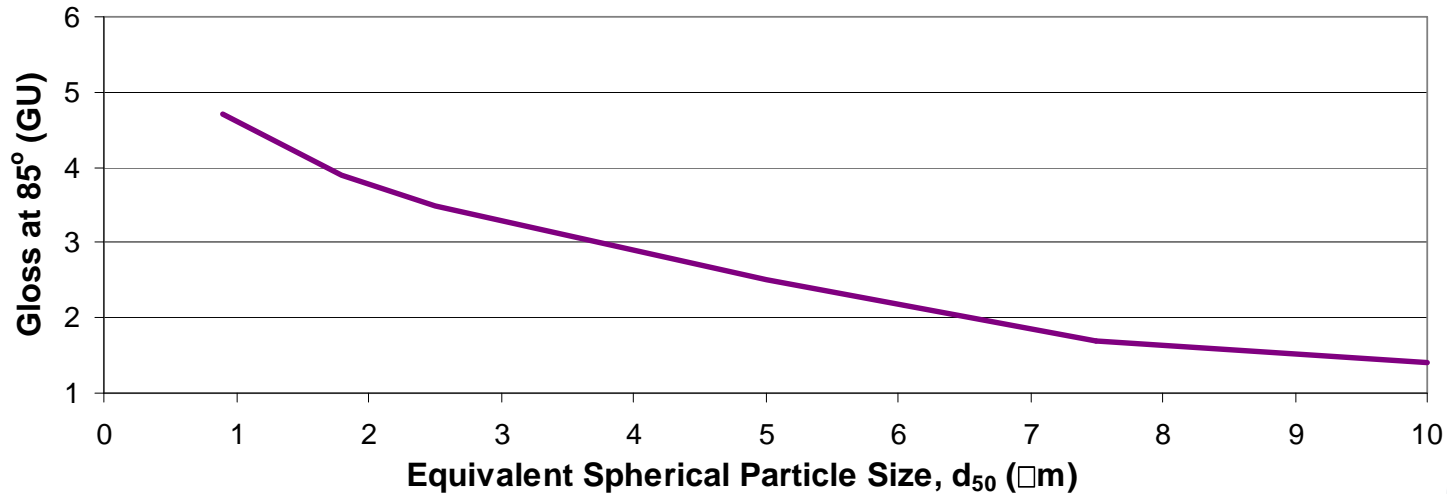
Extraction & Processing of CaCO₃



Effect of CaCO₃ Particle Size on Opacity



Effect of CaCO₃ Particle Size on Gloss



Comparative effect of 10% CaCO₃ as tested in a 70% PVC Styrene Acrylic matt emulsion containing 10% TiO₂

CaCO₃ from UK, Italy & Belgium

	Water based Decorative Paints					Solvent based Decorative Paints					Protective & OEM Coatings			Ink	Typical Properties					Benefits
	Gloss	Semi-gloss & Eggshell	Matt - Exterior	Matt - Interior	Undercoats	Gloss	Semi-gloss & Eggshell	Matt	Undercoats	Primers	Metal Primers	Powder Coatings	Traffic Markings	Printing Ink	Brightness ISO	% + 10 microns	% - 2 microns	Mean Particle Size (d ₅₀)	Oil absorption, g oil/100g	
CHALK																				
Polcarb 90	✓	✓		✓	✓	✓	✓	✓	✓		✓			✓	87.0	0.5	88	0.9	22	General purpose fine extender, Beverley UK
Micronic S		✓	✓	✓	✓		✓	✓	✓		✓				81.0	8	34	2.5	19	General purpose extender, Villiers France
Queensfil 25		✓	✓	✓	✓		✓	✓	✓		✓				83.0	12	40	3.5	18	General purpose extender, Beverley UK
MARBLE																				
Carbital 110	○	✓	✓	✓	✓	○	✓	✓	✓	○	✓	✓			95.0	0.5	52	2.0	18	High whiteness, good gloss
Carbital 115		✓	✓	✓	✓		✓	✓	✓	○	✓	✓			94.0	9.0	40	3.2	18	High whiteness, good opacity
Carbital 120		✓	✓	✓	✓		✓	✓	✓	○	✓	✓			94.0	25.0	32	4.3	16	High whiteness, low oil absorption
Carbital 130		○	✓	✓	✓		○	✓	○		✓	✓			93.5	30.0	28	5.0	16	High whiteness, gloss reduction
Carbital 140			✓	✓	✓			✓			✓	✓			92.5	50.0	15	10.0	17	High whiteness, excellent matting properties
MARBLE																				
ImerCarb 1L	✓	✓	✓	○	✓	✓	✓	✓	✓	○	✓	✓			93.5	1.0	55	1.8	21	High whiteness, good gloss, TiO ₂ spacing
ImerCarb 2L		✓	✓	✓	✓		✓	✓	✓	○	✓	✓			93.0	1.5	40	2.5	19	High whiteness, good opacity
ImerCarb 5L			✓	✓	✓		✓	✓	✓	○	✓	✓			92.0	25.0	22	5.0	16	High whiteness, gloss reduction
ImerCarb 10L			✓	✓	○			✓	○		✓	✓			92.0	30.0	16	7.5	15	High whiteness, excellent matting properties
SLURRY																				
Aquacarb 402 PE		✓	✓	✓	✓										94.5	15.0	40	3.0	-	75% solids, good opacity and good mechanical performance

- ✓ Recommended
- Can be Used

PERFORMANCE MINERALS

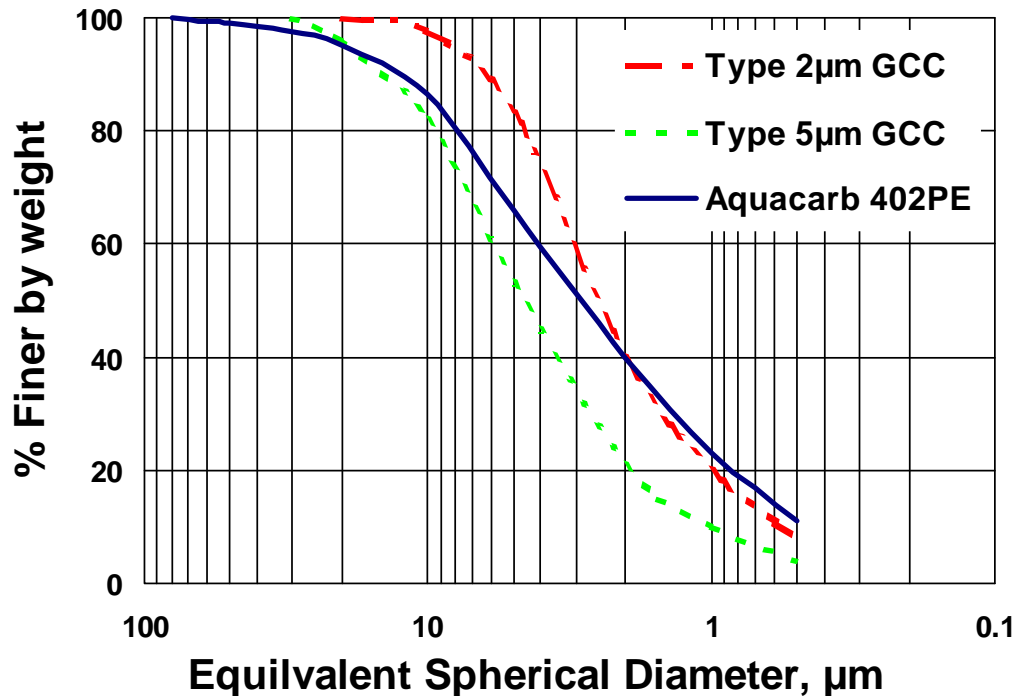


The data quoted are determined by the use of IMERYS Minerals Ltd Standard Test Methods, copies of which will be supplied on request. Every precaution is taken to ensure that the products conform to our published data, but since the products are based on naturally occurring raw materials, we reserve the right to change these data should it become necessary. Sales are in accordance with our 'Conditions of Sale', copies of which will be supplied on request.

Imerys Calcium Carbonate Slurries

Aquacarb 402

- ‘wet’ processed marble slurry
- 75wt% solids



Value propositions in coatings

- improved plant capacity & flexibility
- lower investment & processing costs
- improved working conditions
- improved paint performance
- lower formulation cost

Imerys Performance Minerals

- We aim to
 - Work actively with our customers to develop new and unique solutions to their problems and technical challenges
- We offer a complete range of
 - Calcium carbonate, kaolin & mica



All our products are backed-up by a high standard of technical service, product development research from a team of highly experienced scientists and industry specialists.