

Chalk

A high quality calcium carbonate

Chalk

Fine soft calcium carbonate

LKAB Minerals manufacture our range of Chalk products in the UK from a local high quality soft white chalk deposit. This unique deposit is free from the abrasive flints normally associated with chalk whiting.

Applications

Chalk is a versatile mineral filler with attributes that make it valuable for use in paints, powder coatings, textured coatings, dry wall compounds, sealants and mastics. Rigid and flexible PVC, epoxy compounds, adhesives, rubber, printing inks and paper products can benefit from the addition of Chalk.

Paints and coatings

Chalk is extensively used as an extender in a variety of paint and coating applications as a viscosity adjuster or thickener, the particle shape of Chalk improves opacity as the mineral has good hiding power in coatings. An advantage of Chalk is the ability to adjust the sheen of a paint; the gloss effect can be enhanced or reduced using varying addition levels. Stearate coated grades improve dispersion in powder coatings which reduces Chalk's inclination to absorb moisture.

Rubber and plastics

As a general purpose filler in rubber and plastics Chalk will reduce overall costs and enhance polymer properties. The low abrasive flints with our Chalk ensures the mineral can be used in a variety of thermoplastic applications providing impact modification, gloss and whiteness to the final product. Coated grades of Chalk will reduce plasticiser demand, assist with dispersion, aid bonding and act as a processing aid in PVC applications. Within rubbers and elastomers Chalk will assist with controlling the flow properties essential for moulding products.

Sealants and adhesives

Chalk is widely used in caulks, sealants and adhesives for rheology modification, for whiting and to improve the mechanical properties of the final product. Uncoated Chalk products are an effective extender for titanium dioxide in acrylic sealants with the colour and opacity being maintained. Coated products improve dispersion properties and reduce plasticiser demand in non water based sealant systems.



Chalk in pipes

A typical loading level of 15 to 20% chalk in uPVC drain pipe will reduce raw material costs whilst achieving a glossy white finish.

Standard grades

Typical properties of the Chalk grades LKAB Minerals manufacture are as follows

Grades	D ₅₀	Coating level (%)	Colour L*
<i>Uncoated grades</i>			
MC5	2.5µm	-	94.5
MC40	2.8µm	-	94.5
MC20H	2.65µm	-	94.8
MC40H	2.8µm	-	94.8
<i>Coated grades</i>			
ST10	3.7µm	0.7 - 1.3	93.9
ST10H	3.7µm	0.7 - 1.3	94.3

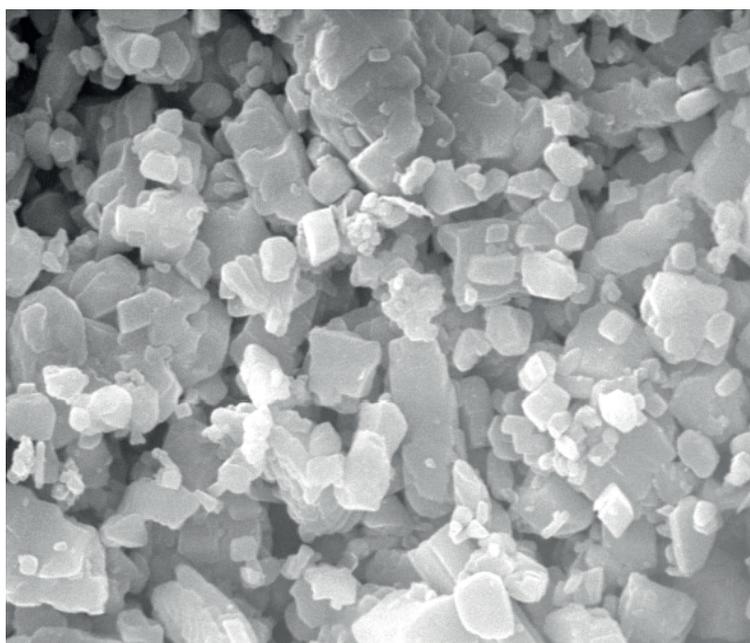
D₅₀ measured by Malvern

Special properties

Chalk, a calcium carbonate, is comprised of very fine calcite crystals each less than 1 micron in diameter. These crystals are derived from the disintegration of complex ring like structures. The structures are calcareous skeletal remains of minute marine organisms known as coccoliths. The fine soft nature of our Chalk products coupled with a smooth round particle shape and carefully controlled particle size distribution make it an ideal filler. The main advantages of Chalk are its good colour, high brightness, low oil absorption, good temperature stability and ease of mixing.

Physical properties

Specific gravity	2.7
Oil absorption	16 - 18ml/100g
Refractive index	1.5
Moisture	0.25%
<i>Uncoated grades:</i>	
Loose bulk density	0.5kg/ltr
Compacted bulk density	1.0kg/ltr
<i>Coated grades:</i>	
Loose bulk density	0.7 - 09kg/ltr
Compacted bulk density	1.1kg/ltr



Chalk under the SEM

Under the microscope the smooth rounded particles of Chalk are clear to see (MC20H grade pictured)



An essential ingredient

The high brightness, whiteness and opacity of Chalk make it a must in many adhesive and sealant formulations.

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LKAB Minerals is an international industrial minerals group with a leading position in a number of product applications. We develop sustainable mineral solutions in partnership with our customers, supplying natural minerals engineered for functionality and usability. LKAB Minerals is part of the Swedish company LKAB, one of the world's leading producers of highly upgraded iron ore products and other related mining services and products.

Value driven

We are proud and passionate about what we do – this is reflected in our values Committed, Innovative and Responsible.

Our promise

In line with our vision, we promise to deliver Mineral Solutions for Our World. 'Mineral Solutions' meaning we together with you identify or develop the right service and product for your application and operations.

For 'Our World' our focus will be on selected applications where we have developed extensive expertise and where we can use our mineral technology and processing skills to generate more customer value. 'Our World' also meaning that we accept responsibility for the environment and our surrounding societies and that we therefore operate with a clear sustainability focus.



Information presented is intended for guidance only and given in good faith but without guarantee.

Version Chalk Product Brochure 06-01EN, 14-10.