



MicaFort

World class micas for Polymers & Coatings

MicaFort

World class Micras

LKAB Minerals' MicaFort is a range of high quality, high aspect ratio mica products. An extensive portfolio has been tailored for use in a variety of applications.



Anti-corrosion application

Barrier properties of MicaFort support superior corrosion protection.

The mineral

Mica is a naturally occurring mineral composed of very high aspect ratio particles, with a platy structure that is preserved and enhanced through our manufacturing process. Mica is a group of lamellar silicate minerals with Muscovite, the most common type, being a hydrated silicate of potassium and aluminium and Phlogopite additionally including magnesium.

Applications

Coatings

MicaFort has been designed to fulfill the demanding requirements of industrial coatings and decorative paints.

It reinforces the paint film during drying and curing. This effect significantly reduces cracking and shrinkage of the film and results in improved adhesion for the coating.

Mica particles naturally overlap and align parallel to the substrate upon application to form a barrier. This barrier ensures low water vapour permeability and makes it very effective in anti-corrosive applications. MicaFort can also be used in coatings regularly exposed to heat or for fire-resistant applications.

Polymers

MicaFort's high aspect ratio contributes to making the mineral an excellent reinforcing filler in a variety of polymer systems.

The alignment of the mica particles in the polymer matrix during extrusion and moulding produces a finished product with excellent dimensional stability, increased flexural modulus, lower coefficient of linear thermal expansion (CLTE) and decreased warpage. In polymer systems MicaFort provides an excellent balance of mechanical, thermal and dimensional properties.

Construction

MicaFort is used in the production of wall boards and cladding to improve dimensional stability, reduce shrinkage, lower weight, increase fire resistance and thermal insulation properties. Sprayable cements utilise MicaFort as an anti-cracking agent.

Standard grades

MicaFort is available in a wide variety of particle sizes.

	Grade	D ₅₀ (µm)	D ₉₈ (µm)	Properties
Phlogopite grades	<i>Dry ground</i>			
	PD900	650	-	Flakes
	<i>Wet ground</i>			
	PW80 (S)	35	140	very high aspect ratio
PW30 (S)	18	50		
Muscovite grades	<i>Dry ground</i>			
	MD500	200	780	
	MD250	150	400	
	MD150	80	230	
	MD100	45	140	
	<i>Wet ground</i>			
	MW150 EW	45	150	very high aspect ratio
	R120	35	140	
	R90	35	115	
	P66	26	100	
	<i>Micronised</i>			
	MM75	16	75	
SX300	14	40		
SX400	11	35		

LKAB Minerals are able to offer sterilisation on most of the products detailed above. In addition the PW grades are available with a silane coating.

D₅₀ measured by Malvern Laser Diffraction

Origin

LKAB Minerals have a long history in processing and supplying mica to many different markets. Our long lasting commitment to the mica industry, our experience and high technical competence ensures that we remain focussed on supplying micaproducts of the highest quality. MicaFort is produced at our dedicated European plants with raw material sourced from both our own and strategic reserves of high purity mica, specifically selected for their very low levels of silica.

LKAB Minerals is committed to being a sustainable, global

supplier of world class mica produced to the highest international standards of quality assurance.

Special properties

The advantages of MicaFort are:

- high aspect ratio plate-like particles
- chemically inert
- parallel particle alignment and overlapping platelets form a barrier
- excellent brightness and whiteness for Muscovite grades
- high thermal stability (to 1000°C)
- electrical insulation and high dielectric strength

Physical properties

Specific gravity (g/cm ³)	2.8
Refractive index	1.58 - 1.6
Hardness (Moh's)	2 - 3
pH (ISO 787-9)	8 - 9



MicaFort in polymer compounds
MicaFort provides an excellent balance of mechanical, thermal and dimensional properties in thermoplastic applications.

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.

