



 **zircosil[®]**



 ENDEKA



Endeka is one of the world's largest suppliers of zircon opacifier and the world renowned Zircosil® brand has been in production since 1950.

The products has outstanding properties in terms of high refractoriness, refractive index, thermal conductivity, hardness and density as well as low chemical reactivity and thermal expansion and are used in foundry cores and mould for precision castings, weld rod coatings, refractories and ceramic frits for a wide range of domestic appliances.

Zircosil® is a critical component of ceramic glazes as an opacifier for tiles, tableware and sanitaryware. It is also used as a powerful whitener for the body of porcelain tiles.



Origins

Zircon is a naturally occurring mineral and its composition depends on the geological history of the parent deposit. In its raw state, zircon sand is found associated with titanium. Zircon is separated from these minerals using special ore dressing techniques. When it arrives at the plant of Endeka it is processed and milled to a variety of particle sizes by a number of different production sequences.

Product Range

The extensive range of Zircosil® products is so well established that world market leadership has been achieved. Reputation for quality products has been acquired by many years of research, development and customer involvement. Endeka is able to source the best quality raw materials for its products from ecologically certified suppliers and offers great flexibility in supply by having manufacturing sites in seven countries.



	USAGE	BRAKE LININGS	FOUNDRIES	FRITS	GLAZES	GLASS	ELECTRICAL INSULATORS	PRECISION CASTING	REFRACTORIES	SANITARYWARE	TILES & PORCELAIN STONEWARE	TABLEWARE
zircosil S		●	●				●		●			
zircosil D		●	●	●		●		●				
zircosil 200								●				
zircosil 200M		●	●					●				
zircosil 300M		●	●					●				
zircosil ten				●	●						●	●
zircosil five					●					●	●	●
zircosil one										●	●	●



Ceramics

Opacity in glazes results from the reflection and refraction of incident light by finely divided particles in the clear matrix. Zircon is milled to ultrafine powders for opacification use and the combination of fine particle size, insolubility in the glaze and high refractive index make it a uniquely effective opacifier.

The ceramics industry uses Zircosil® in glazes for wall and floor tiles, in the body of "porcellanato" tiles, sanitaryware and tableware. The most popular product in the micronised range is the world renowned Zircosil Five® because of its consistent fineness, purity and effective opacification.

Endeka maintains high standards of products supplied to this industry by:

- multiple sourcing of high grade raw materials
- consistency in production and testing
- manufacturing to the highest standard
- customer consultation

Products available are:

Flours for frits

zircosil 200

zircosil D (325 Mesh)

Micronised zircon for body and glazes

zircosil ten

zircosil five

zircosil one



Investment Casting

Zircosil® products are used in investment casting where their excellent refractory properties enable strong ceramics shell moulds to be produced with a fine texture. Since the cast metal does not stick to the mould even at high kiln temperatures, easy separation is facilitated and the casting needs a minimum of after-treatment for the required finish. Endeka has developed specialised grades of Zircosil®, employing dedicated plant, to satisfy the needs of precision casters. The controlled impurity levels meet the exacting requirements of precision casting in the aerospace industry.

The casting produced using zircon moulds vary from turbine blades and automotive parts to prosthetics and golf club heads.

Endeka products for Investment Casting

The product range for investment casters has been developed in cooperation with customers and industry specialists consultancy firms.

Our membership of and participation in BICTA keeps Endeka at the forefront of new technology in investment casting.

Endeka is now leading the world in the supply of zircon products to this industry

Products available are:

Primary dip slurry

zircosil 200M

zircosil 300M

zircosil 200

zircosil D

Primary stucco coating

zircosil S

zircosil S calcined





Refractories

Zircosil® has unique and outstanding properties as a refractory material. It has no definite melting point and dissociation into zirconia and silica begins at 1550°C with little physical change apparent until 1700°C. Its favourable thermal expansion properties and lack of crystalline inversion give it a higher thermal endurance than other materials.

One of the major uses of zircon refractories is in the glass making industry.

Endeka Zircosil® products can be used in most refractory shape production processes such as pressing, ramming and slip casting.

Endeka products for Refractories

Endeka Zircosil® products are manufactured to a consistently high standard using carefully selected sources of raw material.

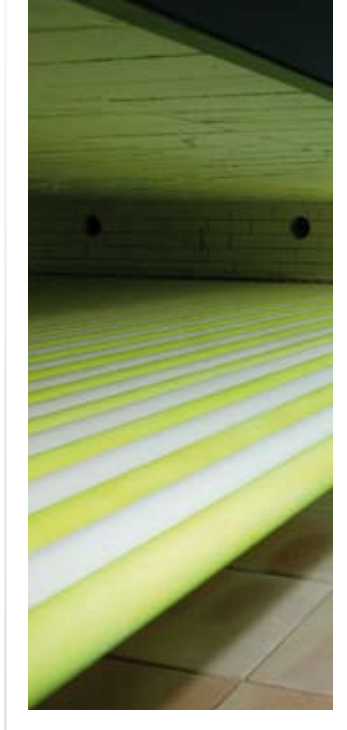
These criteria ensure refractory production of outstanding quality. A variety of particle sizes can be supplied to give manufacturers the optimum range of mixes for their operations.

Products available are:

zircosil S used for foundry cores and moulds, permanent ceramic moulds, furnace linings, refractory shapes.

zircosil 200/D used as a fine constituent in mixtures for refractory shapes

zircosil ten/five used as an ultra fine constituent in pressing and slip casting mixes.



Foundry Coatings

Traditionally, companies producing foundry coatings – especially for the steel industry – use zircon. Quality of raw materials, coupled with consistent processing standards has popularised Zircosil® flour for foundry coatings. Zircosil 200 and D are the most commonly used due to consistency of fineness and low levels of impurities. Their tightly particle size distributions result in a uniform seal, ultimately giving a smoother casting surface.

Endeka have extensive experience of supplying this industry.

The benefits include:

- Products expertly manufactured
- Low impurity levels
- Responsibility to customers for supply and manufacture

Products available are:

Primary dip slurry

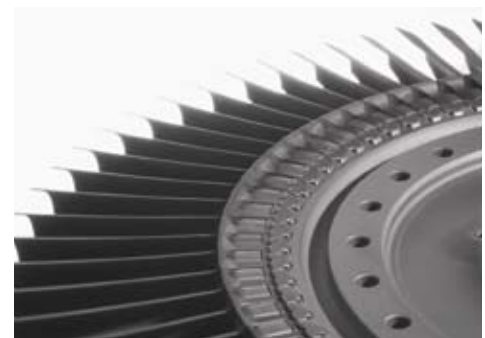
zircosil S

zircosil 200

zircosil D

Glass & other Industries

Zircosil® flour is added as a batch ingredient to optical and TV glasses. It stabilises the glass composition, adds chemical resistance and shields against harmful X-rays. Zircosil® is also used as a filler for various resins, plastics and silicone rubbers. Its hardwearing abrasive nature makes it suitable for use in the production of clutch linings, brake shoes and brake pads.





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