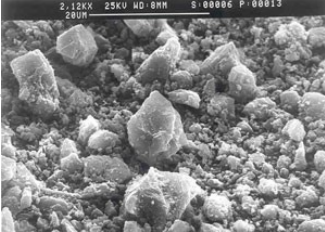


# Calcium Carbonate



Provençale SA, the 2nd European manufacturer of calcium carbonate offers to industrial users a full range of mineral products.

## Mikhart®

Extracted and converted from deposits of white marble from the Pyrénées Orientales in South of France, the range of grounded calcium carbonate Mikhart is characterized by its high brightness and chemical purity. Its physical and chemical properties allow it to be used in all CaCO<sub>3</sub> industrial applications. This range of product is also available in coated version. Some products come from recycling (ISO14021 certified by Bureau Veritas). ♻️

## Calgar®

Extracted and converted from deposits of marble from the Rhône Valley in South of France, the range of grounded calcium carbonate Calgar is suitable for all industrial applications that require a high chemical purity and an intermediate brightness.

## Criscal®

Based on the whitest marble deposits from Spain, the range of grounded calcium carbonate Criscal is characterized by its high level of brightness and its high chemical purity. This range is particularly suitable for all applications where a high level of brightness is required. Some products come from recycling (ISO14021 certified by Bureau Veritas). ♻️

## Calatem®

Calatem are high purity and brightness GCC. Their chemical & physical poperties allow them to be used in all industrial uses of CaCO<sub>3</sub>.This range is also available in coated version.

## Procarb®

Slurry of calcium carbonate specially designed for manufacture of emulsion paints.

## Addifil®

Extracted and converted from deposits of calcite from the Rhône Valley in South of France, the Addifil is a type I limestone addition conform to NF P 18-508 including alkali reactivity. Addifil is manufactured in our plants of Montpins (Pyrénées Orientales - France), Arboleas (Spain) and Pouzilhac (Gard - France). Some products come from recycling (ISO14021 certified by Bureau Veritas)

## Alica®

GCC for feed uses: Extracted and converted from deposits of white marble from South of France, Alica shows a high brightness and chemical purity. This allows a use in the field of animal feeding. This range is available from our plants Pouzilhac (Gard) and Cases de Pène (Pyrénées Orientales)

## AH Mikhart®

Extracted and converted from deposits of white marble from the Pyrenees Orientales in South of France, the range of grounded calcium carbonate AH Mikhart meets requirements of human food for the additive E170.

## Ycal®

Extracted and converted from deposits of marble from Yonne in France, the range of grounded calcium carbonate Ycal is suitable for all industrial applications that require a high chemical purity and an intermediate brightness.

## Calprec

Precipitated Calcium Carbonate (PCC)

# Decorative products

## Marble granulates

Provençale S.A offers a large range of natural granulates in various shades and particle sizes. Extracted from France (Var, Gard, Pyrénées Orientales) and from Spain, its colorful blue, red, yellow and white granulates can be used for several applications. The rosé de Brignoles marble is extracted from our pit of Candelon closed to Cote d'Azur in France. Roman master-builders noticed the outstanding qualities of the Rosé of Brignoles and used it extensively in their buildings, some of which have survived as Basilique Saint Pierre in Roma or Louvre Museum in Paris.



Blanc des Pyrénées

Blanc Pont du Gard

Blanc Cristal

Bleu

Rosé de Brignoles

Rouge Griotte

## Coloured sands & granulates

Produced out of pure silica sand with round particle, pyrite-free, 2K synthetic resins and pigments with high light-fastness, Coloritquarz is available in 5 standard grain-sizes (0.4-0.8mm, 0.7-1.2mm, 1.2-1.8mm, 2-3.5mm et 3-5mm) and over 700 shades (direct ou mixtures). The excellent abrasion fastness combined to its chemical stability and its high Mohs hardness of 7 allow these products to be used in coloured plasters, solid surface & engineered stones products made of PMMA, PU EP and in road marking.



## COLORITQUARZ

# Other minerals

(Some products may not be available from us in your country).

## Barite

## BARINIT, BARIFLOR, BARISTAR & BLANC ROC

**B a r i F l o r®**: BARIUM SULPHATE of high purity for use in systems where a high grade of brightness is not required, but which call for inertia and resistance to acids and atmospheric agents. The wide range of BariFlor® products satisfies the requirements of a great variety of industrial applications. High content of BaSO<sub>4</sub> is guaranteed by a system of enrichment which complies with the strict regulations in force for protection of the environment. The BariFlor® range complies with European EN–71, Part 3 regulations concerning migration of certain metallic elements.

**B a r i S t a r®**: BARIUM SULPHATE of high purity and excellent brightness. A modern, efficient production process enables us to supply a wide range of BariStar® products to satisfy the requirements of a great variety of industrial applications. High content of BaSO<sub>4</sub> is guaranteed by a system of enrichment complying with the strict regulations in force for protection of the environment. The BariStar® range complies with European EN–71, Part 3 regulations concerning migration of certain metallic elements.



**B l a n c R o c®**: NATURAL BARIUM SULPHATE of high purity and extraordinary brightness. Latest generation micronising processes give this product range the properties of Barium Sulphate precipitate, making it an excellent extender in systems requiring unsurpassable inertia and physical and chemical resistance. Blanc Roc® is an ideal product range to satisfy the requirements of the wide variety of industrial applications. High content of BaSO<sub>4</sub> is guaranteed by a system of enrichment complying with the strict regulations in force for protection of the environment. The Blanc Roc® range complies with European regulations EN 71-3 relating to the migration of certain metals.

## Talc

## TALKRON CLASSIC, ZERO, NATUR, STYL & PURE

**Talkron® CLASSIC** is a natural mix of talc and chlorite, with a lamellar structure. Its natural properties, together with the different particle sizes available, allow the user to regulate and adjust the gloss levels required. It also enables easier dispersion. The product is indicated for systems where a low level of brightness is required. Its laminarity guarantees a hydrophobic and barrier effect which is perfect for industrial, anticorrosion and decorative paints; it also provides dry hiding properties.

**Talkron® ZERO** is a Talc of high purity and lamellar structure, with a good grade of brightness.The double classified manufacturing process results in a de-dusted talc with low oil absorption and low surface area, making it ideal for use in high solids coatings and resulting in lower formulation costs. Anti-corrosive result due to its laminarity and purity, which provides hydrophobic properties and outdoor resistance due to its barrier effect. Its different particle sizes allow gloss regulation and adjustment.

**Talkron® NATUR** is a talc of high purity, with a good degree of brightness and lamellar structure. Its platy particles guarantee a barrier effect in interior and exterior coatings, as well as hiding power, gloss reduction and chemical stability. Thanks to its fineness and specific area it provides reinforcement for the different polymers, ensuring resistance and flexibility. Standard multifunctional filler, available in several particle sizes for multiple applications: decorative and industrial paints, plastics, etc.



**Talkron® STYL** Talkron® STYL is a Talc with a small part of double calcium carbonate and magnesium. This natural mix, with an excellent degree of brightness and mostly lamellar structure, is especially indicated in water-based systems. Using the correct manufacturing process for each product, we obtain the ideal particle size, whilst maintaining the lamellar structure and the absorption level for each application. Its different particle sizes allow gloss regulation and adjustment.

**Talkron® PURE** is a talc of high purity and excellent whiteness. It is produced by a new delaminating process, which ensures it is much more lamellar than other conventional talcs.

This confers a barrier and hydrophobic effect in indoor and outdoor coatings, and it provides the polymers with excellent resistance and flexibility. Thanks to its fineness and whiteness it is an excellent extender. Confers superior dry hiding properties and is also a suitable partial replacement for TiO<sub>2</sub>, enabling a reduction in formulation costs.

## Mica

## MICAFLOR & PHLOGOPITHE

### MUSCOVITE

Mica MICAFLOR is characterized by the following special properties:

-natural fine particle sizes	-marked lamellar structure	-high brightness	-high aspect ratio
-high purity	-extremely low heavy metals content		



those properties allow to improve the final product properties significantly in terms of:

-Better adhesion	-Better resistente to UV and IR	-Better chemical resistance	-Reduced permeability	-Better surface properties
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All those properties allow to use mica muscovite in all type of acquous paint, as well as for anti corrosion, industrial or road paints.

for plastics, mica muscovite has a major impact on :

-HDT	-Flexural modulus and strength	-Retraction	-Chemical resistente	-Permeability
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This product is also available untreated as well as with application-specific product modifications (e.g.surface treatment). Applications include especially thermoplastics polymers (e.g. PA,PBT,PP,PPS), thermosets, elastomers, rubbers, paints, and coating compounds.

In addition to the classic range of products, the T serie offers the possibility not to be subject of the STOT labelling thanks to its low level of respirable crystalline silica. This implies an easier use during manufacturing process as well as conformity of the final product with the new environmental rules.

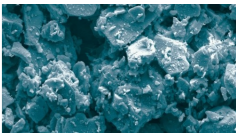
### TREFIL® phlogopite for PP compounds

The use of lamelar phlogopite allows to improve thermal and mechanical properties of PP compound. We can thus obtain: reduction of the shrinkage, improvement of the heat resistance, improvement of the traction resistance, increase of elasticity modulus.

## Aluminium Tri-Hydrat (ATH)

## TREFIL

White & Flame retardant Aluminium trihydrate is manufactured from bauxite using the Bayer process. The primary characteristics of aluminium hydroxide are its flame retardant qualities, its high degree of brightness and its low hardness. It dehydrates at temperatures above 200°C. Key applications: boiling water resistant solid surface composites made out of PMMA, epoxy casting resins.



## SILATHERM

This products are mainly used to improve the thermal conductivity in thermoplastics and thermosets in order to facilitate the heat dissipation. In comparaiso to other classical solution for thermal conductivity this products has the main asset to not alterate the dielectric properties of the polymers it is in. Silatherm is available with different surface treatment in order to facilitation its introduction.

## Biocides, microencapsulated biocides, defoamers, dispersants

## MIRECIDE, MIRECIDE-KAP, CONTRAPEN, DISPERSENE

Lamirsa offers a wide range of chemical additives with applications in the most diverse sectors, especially in the paint sector.

### BIOCIDES

MIRECIDE®, a range of Biocides designed to preserve the wet state of raw materials and prevent their deterioration during storage and use.

### MICROENCAPSULATED BIOCIDES

The MIRECIDE®-KAP range, specifically designed for dry film protection, is developed with versatile and effective technology that allows for adaptable release profiles, provides greater stability during storage, reduces toxicity and improves performance.

### ANTIFOAM

The CONTRAPEN® range of defoamers minimizes the formation of foam during manufacturing processes.

### DISPERSANTS

DISPERSENE®: Range of anionic dispersants.

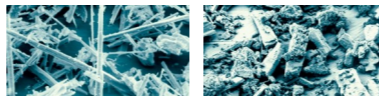


## Wollastonit

TREMIN® 283, TREMIN® 939

Reinforcement, low thermal expansion. Wollastonite is a natural occurring calcium silicate. It is formed from calcium carbonate and silicon dioxide at about 450°C. The structure of the wollastonite particles depends not only on natural conditions but also to a large extent on the preparation and size reduction techniques employed. Using specific processing technologies wollastonite powders with particle structures from nearly block-like with a low aspect ratio (LAR) (TREMIN 283-products) to exceptional acicular structures with a high aspect ratio (HAR) (TREMIN 939-products) are achieved.

- Key applications:
- engineering technical plastics (i.e. polypropylene, polyamide, polyurethane) for the automotive industry
  - Fluoro silicone rubber e.g. for oil seal
  - friction linings
  - powder coatings, corrosion protection (i.e. epoxy- or polyurethane-based aqueous systems)

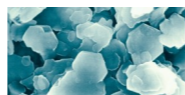


## Kaolin / Chinaclay

CHINAFILL®, KAOFLOR®, PHARMAKAOLIN, CALK® AK PURE®

Fine filler with reinforcing properties. Kaolin is a natural occurring raw material, which is refined to an industrial raw material by extent processing. Kaolin is separated of its accessory mineral by water separator technique. The classification in different grain size distributions takes place through drum washers, cyclone classifier and centrifuges. Subsequent dewatering by sedimentation, filtration and drying takes place. Bleachery and magnetic separator improve several kaolin products.

- Features:
- Hexagonal, - flexible,
  - thin lamina - High aspect ratio (1:40)
  - Density of 2.6 g/m3 - Low thermal expansion : 5\*10-6K-1 (at T20-300°C)
- Key applications: Paper, Ceramics, Rubber, Dispersion paints, Dispersion adhesives (i.e. polyvinyl acetate)



## Anhydrit

TREFIL 1313®

A filler that can withstand humidity. Finely grounded and dressed natural anhydrite is a waterless sulphate. It is often formed as an evaporation product from sea water subject to progressive concentration of the salt water solution. Anhydrite makes up the sturdy solid base of gypsum deposits and can be mined separately. Main applications: Industrial paints (e.g. corrosion protection, transparent lacquers), Construction chemicals (e.g. floor coverings, screed), Clear lacquer systems (among other things UV wood varnishes) Adhesives

## Fused Silica

AMOSIL®, SILBOND®, SILMIKRON®

Amorphous, extremely low coefficient of thermal expansion. Fused silica is the amorphous modification of high purity quartz. It is synthesized using an electric arc. The main feature of fused silica is an extremely low coefficient of thermal expansion (0,5 \* 10-6/K). Therefore these products are particularly suitable for special applications with alternating temperature loading. Grain sizes down to 1µm are achieved by iron free grinding and subsequent air separation. Thus we are able to offer grain size distributions from a couple of millimeters down to a few micrometers.

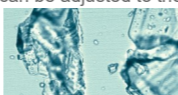
- key applications:
- electrical insulating - casting resin systems
  - Electronics - precision casting
  - engineering - ceramics

## Synthetic Corundum

SEPASIL® EK

High hardness and transparence. Synthetic corundum is an industrial product. It is melted of high quality aluminium oxide. Synthetic corundum consists of about 99 % aluminium oxide. The outstanding property of synthetic corundum is a high hardness. Only diamonds are harder. This high hardness is a challenge for every grinding technology. Our micronized synthetic corundum SEPASIL is characterized by a narrow grain size distribution. Another refining step is the surface-treatment with silans or silan-based substances which can be adjusted to the respective application.

- Key applications
- abrasion-resistant wood - decorative coatings laminates
  - casting resin systems - high voltage isolators



## Feldspar

MICROSPAR®, SILIPLAST®

A filler with a high degree of chemical resistance. With a proportion of almost 60 % by weight of the structure of the earth's crust that is accessible for us, feldspars are by far the most frequent group of minerals. Feldspar is a chemically resistant framework silicate with a thick-slatted grain morphology. In our production facilities mainly potash feldspars are processed and separated by an elaborate screening technique, then classified and micro-ground.

Main applications: Porcelain, Ceramics, Clear lacquer systems (among others UV-hardening lacquer system), Dispersion paints, Silicate paints

## Cellulose

JELUCEL®, JELUXYL®

JELUCEL® qualities are highly effective functional cellulose powders made from controlled vegetable raw materials. JELUCEL® qualities are purified, colour-neutral, almost inert, and are available in different particle sizes and fibre lengths to suit manifold industrial applications, working e.g. as texturizer, binder of liquids, thickener, reinforcing agent and much more. JELUXYL® are selected and classified wood fibres from sustainably renewable resources. Qualities are available as powders and fibres. JELUXYL products can be seen as economical alternative to pure cellulose, but not only!

## Glass microspheres

SPHERIGLASS®, OMICRON®, SILIBEAD AIR®

SOLID GLASS MICROBALLS ULTRARESISTANT « SPHERIGLASS » and ULTRAFINE « OMICRON » Solid glass microspheres provide a unique functional additive with the combination of benefits they bring to finished products (resins, paints and varnishes) because of their spherical shape and chemical composition.

- They provide the following benefits:
- high dimensional stability of the end products - ease of implementation
  - improved resistance to abrasion and scratching - improved surface appearance
  - improved mechanical properties such as compressive strength



HOLLOW MICROSPHERES ULTRA LIGHT AND RESISTANT « SILIBEAD AIR »

Hollow microspheres, in addition to the benefits mentioned for solid microspheres, give the end products the following properties:

- significant reduction in density - thermal and sound insulating properties.
- VOC reduction

## Zeolite

LITHOFEEED®, LITHOSOIL®, LITHOFILL®

Zeolite is a sedimentary volcanic stone with a very high clinoptilolite content (90%). It is characterized by its ordered and extremely stable crystal structure ("cage") with the finest channels and cavities, its extremely large internal surface (porosity) of 400-600 m²/g, its high cationic binding capacity, its large water storage capacity up to 40% of its own weight without structural change. It captures odors. Zeolite is used in animal feed, breeding, cosmetics and industry (as a functional filler in plastics, paints, varnishes, rubber, adhesives, building materials).

## Titanium dioxide

CELLCOM®

Titanium dioxide is the most widely used white pigment due to its luminosity, opacity and very high refractive index. KUM YANG produces rutile titanium dioxide under chlorine protocol, high quality with excellent dispersibility and gloss, high covering power and durability. They are widely used for coatings, plastics, printing inks, papermaking, etc.



The Mineral Engineers

A DIVISION OF QUARZWERKE GROUP



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