الشركة العامة للصناعات التعدينية (ذ.م.م)
GENERAL MINERAL INDUSTRIES CO. (L.L.C.)



EXPORT MARKETS

ALGERIA | BAHRAIN | BANGLADESH | EGYPT | GHANA | IRAQ | ITALY | JORDAN | KENYA
KSA | MOROCCO | NIGERIA | OMAN | PAKISTAN | QATAR | SOUTH AFRICA
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EMICAL

PRECIPITATED CALCIUM CARBONATE



PAINTS | SEALANT | FOOD & PHARMA | PLASTICS | DETERGENT | TOOTHPASTE





ABOUT US

GENERAL MINERAL INDUSTRIES (GMI) was established in Ajman, UAE, in 2001 with the primary objective of producing and supplying high quality Precipitated Calcium Carbonate (PCC) that meets the specific requirements of manufacturers across various sectors, including paints, toothpaste, food and pharmaceuticals, inks, detergents, sealants, cosmetics, paper, and more. Our core focus is continuously enhancing our product offering and meeting specific customer requirements. Our state of the art plant provides operational and process control flexibility while ensuring quality management in accordance with international standards. GMI is a GMP certified company by SGS that is supported by qualified and experienced professionals from the PCC industry.

EMICAL

PRECIPITATED CALCIUM CARBONATE

Precipitated Calcium Carbonate (EMICAL) is manufactured through the reaction of dissolved carbon dioxide with a suspension of calcium hydroxide under varied conditions. This process enables the production of specific crystal structures, shapes, particle sizes, densities, and opacity values. Through precise reaction control, PCC properties can be attained to deliver targeted physio-mechanical properties and cost efficiency in end-use applications. Uncoated PCC is known as SIGMA, whereas surface-coated PCC, referred to as Activated Calcium Carbonate or ALPHA, enhances polymer matrix processing and improves the overall performance of the final product.

- **SIGMA** – Uncoated Precipitated Calcium Carbonate (PCC):
  Used as a performance chemical in paints, toothpaste, food, pharmaceuticals, inks, sealants, detergents and paper.

- **ALPHA** – Activated Calcium Carbonate (ACC):
  Used as a performance chemical in enamel paints, sealants, cosmetics, PVC pipes and cables.





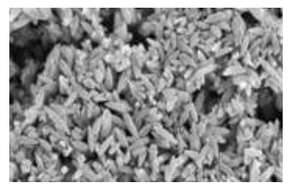
CHARACTERISTICS

EMICAL PCC is characterized by uniformity in quality, high chemical purity, and a high degree of whiteness and brightness. It offers pH control, managed microbial values, and a product devoid of magnetic particles and reduced residue. Further value addition has been imparted with the following unique attributes:

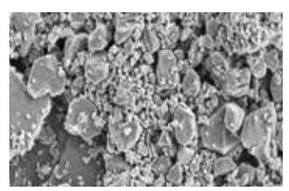
- **SECONDARY CARBONATION:** Ensures complete reaction and chemical stability.
- **ACTUATORS IN REACTORS:** Provides precise control over crystal growth and shape.
- **425-MESH SIEVING:** Guarantees a grit-free product for smooth finishes.
- **MICROBIAL CONTROL:** Ensures suitability for sensitive food and pharmaceutical applications.
- **HIGH GAUSS MAGNETS:** Strategically placed in slurry and powder lines to eliminate metallic impurities.

WHY CHOOSE EMICAL PCC OVER STANDARD GCC?

PROPERTIES	EMICAL PCC	GCC
Process	Precipitation and refining	Simple grinding
Particle shape	Rhombohedral/scalenohedral	Undefined
Particle structure	Calcite/aragonite	Mainly calcite
Particle size	Much lower	-
Purity	>97%	Less than P.C.C
Density	2.7	2.7
Abrasiveness	Nil	Present
Dispersibility	Better than G.C.C	-
Brightness	>98%	95%



PCC



GCC

TYPICAL CHEMICAL ANALYSIS OF EMICAL GRADES





PRODUCT PACKING

Three-ply paper bags: 25 kg net weight.

Jumbo bags: 500 kg net weight.

CHEMICAL & PHYSICAL SPECIFICATIONS

Colour	White
Solution in Hydrochloric Acid 5N	Clear
Solution alkali (as Na2O according to ISO:918-1968)	0.05%
pH	9.0-10.5
Iron, Fe-max	0.02%
Manganese, Mn-max	0.005%
Colloidal Silica, SiO2-max	0.06%
Aluminium, Iron, Phosphates and matter insoluble in Hydrochloric Acid according to ISO:918-1968-max	0.05%
Magnesia, Mgo-max.	1.00%
Lead, Pb-max	1p.p.m.
Copper, Cu-max.	5p.p.m
Arsenic, As-max.	1p.p.m.
Chloride, Cl	Trace
Calcium Carbonate, CaCO3-min. (Test method as in ISO:918-1968)	98%
Specific gravity	2.7
Loss on drying at 105^0 C-max.	0.5%
Fineness #400 mesh-max. Fineness #325 mesh	Max 0.07% Max 0.05%
Opacity	87% + with 100µ rod

MICROBIOLOGICAL SPECIFICATIONS

Total bacterial count	<10CFU/gm
T.Coliforms	Nil
E.Coli	Nil
Staphylococcus Aureus	Nil
Salmonella	Nil
Pseudomonas Aeruginosa	Nil
Yeast & moulds	<100CFU/gm

All percentages on weight basis.

EMICAL GRADES, SPECIFICATIONS & APPLICATIONS

EMICAL – SIGMA (UNCOATED GRADES)

GRADES	APPLICATION	BULK DENSITY (G/ltr)	STRUCTURE	AVERAGE OIL ABSORPTION (G/100G)	AVERAGE FLOW POINT (ML/15G)	AVERAGE D50 (µ)	REMARKS
SIGMA P4B	Water based paints	525	Calcitic	33	21	2.1	Better dispersion low alkalinity
SIGMA P3P	Water based paints (High opacity)	500	Calcitic	35	24	1.8	Superior color & increased opacity
SIGMA P3	Rubber & inks	475	Aragonitic/ calcitic	30	19	1.9	Higher settled volume & dispersion
SIGMA P3T	Toothpaste	600	Calcitic	26	16	3.5	Increased viscosity. high purity
SIGMA P3TH	Food/pharma	700	Calcitic	26	13	6	Calcium source, higher P.S. as bulking agent
SIGMA P4H	Detergents	650	Calcitic	29	13	3.5	Free-flowing, fluffy, fine P.S.
SIGMA P6	Paper	475	Calcitic	32	23	1.9	Fine particle size & increased opacity
SIGMA ST	Sealant	450	Calcitic	35	25	1.6	Higher viscosity & surface area

EMICAL – ALPHA (COATED GRADES)

GRADES	APPLICATION	BULK DENSITY (G/ltr)	STRUCTURE	AVERAGE OIL ABSORPTION (G/100G)	AVERAGE FLOW POINT (ML/15G)	AVERAGE D50 (µ)	REMARKS
ALPHA S	Unplasticized PVC	650	Calcitic	24	13	3.5	Easy flow & improved surface finish, less wear & tear on extruder
ALPHA SS	Enamel paints	600	Calcitic	28	16	2.2	Fine particle size, superior color, improved dispersion
ALPHA ST	Adhesives and sealants	650	Calcitic	24	14	2.5	Fine particle size, rheological modifier
ALPHA S2	Cosmetics	500	Calcitic	30	18	1.8	Lower particle size helps increase absorption, fluffiness, etc.

APPLICATIONS: DIVERSE GRADES TO MEET DIVERSE NEEDS

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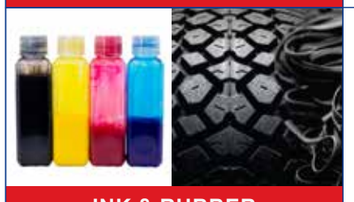
EMICAL – SIGMA (UNCOATED GRADES)

INDUSTRIES	APPLICATIONS	SUITABLE GRADES
 PAINTS & COATINGS	Used in emulsion paint as a white opacifying agent and extender for the main pigment to increase hiding power and brightness. Acts as an anti-settling agent in powder coatings. Used in solvent-based paint for higher hiding power. Helps in reducing Titanium dioxide.	SIGMA P4B SIGMA P3P
 TOOTHPASTE	Used in pastes and powders as a cleaning and polishing agent. Provides viscosity control.	SIGMA P3T
 FOOD & PHARMA	Serves as a calcium source and an antacid. Acts as a neutralizer and filtration aid in antibiotic manufacture. Used as a bulking agent in tablets.	SIGMA P3TH
 DETERGENTS	Used as a cleaning and bulking agent.	SIGMA P4H
 INK & RUBBER	Used in printing inks as an extender to assist in control of strength and body. In rubber, used as a reinforcing filler to improve strength.	SIGMA P3
 PAPER INDUSTRY	Used in paper coating for brightness, smoothness, opacity, and ink reception. Used as a performance agent.	SIGMA P6

EMICAL – ALPHA (COATED GRADES)

INDUSTRIES	APPLICATIONS	SUITABLE GRADES
 ENAMEL PAINTS	Used in solvent-based paints for better hiding power while maintaining superior gloss.	ALPHA SS
 SEALANTS & MASTICS	Used in PVC plastisols as a rheology modifier. Suitable for Polyurethane, Polysulfide, and Silicone sealants.	ALPHA ST
 COSMETICS	Used in Talcum powder to increase fluffiness and control absorption characteristics in depilatory creams.	ALPHA S2
 PVC PIPES & CABLES	Used as a performance chemical in unplasticized PVC to improve surface finish, impact strength, and whiteness while reducing plate out and wear and tear on the extruder. Acts as a performance chemical in cable compounding to improve surface finish, tensile strength, elongation at break, shore hardness, degree of whiteness, reduced plate out, wear and tear on the extruder, and melt extensibility. As a performance chemical in profiles and sheeting to improve shine and impact strength.	ALPHA S

EMICAL

PRECIPITATED CALCIUM CARBONATE

FINE PARTICLE SIZE | HIGH CHEMICAL PURITY | EXCEPTIONAL WHITENESS | COST EFFICIENCY | HIGH PERFORMANCE