



MURUGAPPA
GROUP

100 years | US \$ 3 billion | 29 companies | +30,000 people



EMD

ELECTRO MINERALS DIVISION



CUMI's range of
CUMI's range of true grit minerals
true grit minerals

PRODUCT CATALOG

FUSED PRODUCTS MACRO – REGULAR

BROWN FUSED ALUMINA

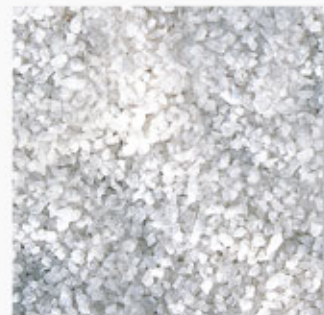


Brown Fused Alumina is a tough, sharp abrasive which is highly suitable for grinding metals of high tensile strength. Its thermal properties make it an excellent material for use in the manufacture of refractory products. This material is also used in other applications like blasting and surface hardening. Brown Fused Alumina is produced by the smelting of Calcined Bauxite in an electric arc furnace at temperatures greater than 2000°C.

A slow solidification process follows the fusion, to yield blocky crystals. Strict control over Titania levels during the fusion process ensures optimum toughness of the grains. The cooled crude is further crushed, cleaned of magnetic impurities in high intensity magnetic separators and classified into narrow size fractions to suit the end use. Dedicated lines produce products for different applications.

WHITE FUSED ALUMINA

White Fused Alumina is a high purity, synthetic mineral, manufactured by the fusion of controlled quality pure grade Bayer Alumina in an electric arc furnace at temperatures greater than 2000°C followed by a slow solidification process. Strict control over quality of raw materials and fusion parameters ensure products of high purity and high whiteness. The cooled crude is further crushed, cleaned of magnetic impurities in high intensity magnetic separators and classified into narrow size fractions to suit the end use. Dedicated lines produce products for different applications. White Fused Alumina is highly friable and hence used in Vitrified Bonded Abrasives products where cool, fast cutting action is essential and also in the manufacture of high purity Alumina refractories. Other applications include use in Coated Abrasives, Surface treatment, Ceramic Tiles, Anti-Skid Paints, Fluidized Bed Furnaces and Skin / Dental Care.



SILICON CARBIDE

Silicon Carbide is a man made mineral of extreme hardness and sharpness. It is the ideal abrasive for grinding / sanding materials of low tensile strength such as Cast Iron, Brass, Aluminum, Bronze etc. Its thermal properties make it an excellent medium for use in the manufacture of refractory products and crucibles.

Silicon Carbide is produced by a process involving the electrochemical reaction of silica - in the form of quartz with Carbon in the form of raw petroleum coke. The stoichiometric mixture is reacted in an electrical resistance furnace at a temperature greater than 2200°C to yield high quality crystals. The large crystals are then segregated, crushed, cleaned of magnetic impurities in high intensity magnetic separators and classified into narrow size fractions to suit the end use. Dedicated lines produce products for different applications. Silicon Carbide Grains are also used in marble and granite polishing, manufacture of Kiln furniture and as a deoxidizer in Iron and steel making.

FUSED MULLITE

Fused Mullite is manufactured by fusing a mixture of high purity Bayer Alumina and pure Quartz in a tilting type arc furnace at a temperature around 2000°C. Controlled cooling of the molten mass ensures a high degree of mullitization characterized by well defined columnar crystals. The cooled crude is further crushed, cleaned of magnetic impurities in high intensity magnetic separators and classified into desired size fractions. Fused Mullite is one of the main raw materials used by the refractory industry for applications requiring thermal shock resistance and corrosion resistance.



SIZES AVAILABLE

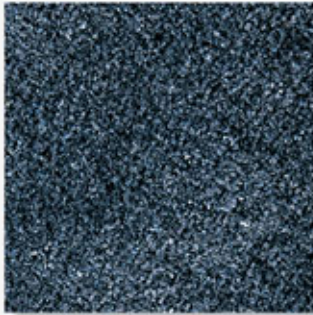
F12 - F220 as per FEPA (Federation of European Producers of Abrasives) standard

P12 - P220 as per FEPA (Federation of European Producers of Abrasives) standard

Refractory splits and fines

For more technical information, kindly visit our website www.cumi-emd.eu

FUSED PRODUCTS MACRO – SPECIALITY



SEMI FRIABLE ALUMINA

Semi-Friable Alumina is a low titania containing brown corundum produced by controlled smelting of special grade Bauxite in an electric arc furnace above 2000°C. The lower titania gives an intermediate toughness between that of White and Brown Regular corundum and strict control of this parameter over a narrow band ensures consistent quality. The cooled crude is further crushed, cleaned of magnetic impurities in high intensity magnetic separators and classified into narrow size fractions. The grains are further annealed at intermediate temperatures in a specially designed kiln to build predictable toughness characteristics. In Bonded Abrasives, semi friable alumina can be used in depressed center wheels, cut off Wheels, in Surface and Cylindrical Grinding of heat sensitive metals, alloys etc. The wheels made of this material are made best use of where cool and fast cutting is required. In Coated Abrasives, these grains are best suited for use in metal finishing and for sanding of wood, plastic coatings and paint.

BLUE FIRED SEMI FRIABLE ALUMINA

Blue Fired Semi Friable Alumina is a low titania containing brown corundum produced by controlled smelting of special grade Bauxite in an electric arc furnace at greater than 2000°C. The lower titania and an intermediate toughness between that of White and Brown Regular corundum and strict control of this parameter over a narrow band ensure consistent quality. The cooled crude is further crushed, cleanses of magnetic impurities in high intensity magnetic separators and classified into narrow size fractions. The grains are further annealed at a high temperature in a specially designed kiln to build predictable toughness characterization. These grains are best suited for use under extreme grinding conditions where high stock removal efficiency is required. Main uses are in metals especially alloyed steels, non Ferrous metals and alloys of Copper and Zinc.



SINTERED ALUMINA

AzureS is a Sintered Alumina abrasives grain. It is manufactured by our patented state-of-the-art process through sol-gel technology. This grade of sintered alumina abrasive grain is well known for its high performance and unique fracture characteristic. It performs better in high pressure grinding application and also withstands other severe application conditions. It also provides cooler cutting and longer life of the wheel. All these make this grain a unique choice for the abrasives manufacturers.

FUSED ZIRCONIA

CUMI alongwith Foskor Zirconia manufactures Fused Calcia Stabilized Zirconia material for use in the manufacture of slide gate refractories used in the continuous casting of steel. A mixture of high quality zirconia and lime is fused at a temperature greater than 2400°C to create a partially stabilized zirconia product. The cooled mass is crushed, cleaned of magnetic impurities in high intensity magnetic separators and screened to desired size fractions. The grains are thermally treated to ensure uniformity of stabilization.



SIZES AVAILABLE

F12 - F220 as per FEPA (Federation of European Producers of Abrasives) standard 42-1:2006.
P12 - P220 as per FEPA (Federation of European Producers of Abrasives) standard 43-1:2006.

Refractory splits and fines

For more technical information, kindly visit our website www.cumi-emd.eu

MICRO POWDERS



BROWN FUSED ALUMINA

Brown Fused Alumina Micro Grits are produced by the grinding and classification of selected Macro grain feed stock in an advanced milling and classifying facility. This ensures an iron free product of narrow particle size distribution with a high repeatability. The sizes are controlled and tested using x-ray sedimentation particle size analyzer and particle counter.

WHITE FUSED ALUMINA

White Fused Alumina Micro Grits are produced by the grinding and classification of selected Macro grain feed stock in an advanced milling and classifying facility. This ensures an iron free product of narrow particle size distribution and high whiteness. The sizes are controlled and tested using x-ray sedimentation particle size analyzer and particle counter.



SILICON CARBIDE

Silicon Carbide Micro Grits are produced by milling of selected and cleaned macro grain feedstock. The milling and classification is done in CUMI's state of the art milling and classifying facilities which yields powders of tight distribution, consistent shape, high purity and low dust levels. A safety screening of the powders is carried out to further ensure that the grains are free of coarse particles. An in-line particle size analyzer coupled to a fully automated control system delivers a high level of repeatability of the process and yields a very predictable product. Particle size counters are used for testing and reporting size distributions and a shape analyzer helps in fine tuning the process to obtain shape specific products for various applications.

MICRO POWDERS

SIZES AVAILABLE

F240 - F1200 as per FEPA (Federation of European Producers of Abrasives) standard

P240 - P2500 as per FEPA (Federation of European Producers of Abrasives) standard

For more technical information, kindly visit our website www.cumi-emd.eu



Higgins Furnace



Tilt Furnace



Acheson Furnace

PROCESS

PRODUCTS

FUSED PRODUCTS MACRO - REGULAR

Brown Fused Alumina
White Fused Alumina
Silicon Carbide
Fused Mullite

FUSED PRODUCTS MACRO - SPECIALITY

Semi Friable Alumina
Blue Fired Semi Friable Alumina
Sintered Alumina
Fused Zirconia

MICRO POWDERS

Brown Fused Alumina
White Fused Alumina
Silicon Carbide



PROCESS



APPLICATIONS

- ☐ Anti-skid
- ☐ Blasting
- ☐ Bonded Abrasives
- ☐ Brakelining
- ☐ Coated Abrasives
- ☐ High Abrasive Resistance
- ☐ Investment casting
- ☐ Laminates
- ☐ Lapping
- ☐ Metallurgical
- ☐ Micro-porous Insulation
- ☐ Refractories
- ☐ Rice Polishing
- ☐ Wire Sawing

BRANDS

FUSED PRODUCTS MACRO - REGULAR

FUSED PRODUCTS MACRO - SPECIALITY

MICRO POWDERS

CUMI SHARP
CUMI MET
CUMI HEAT

CUMI SHARP
Azure - S
CUMI sheen
Odoblastae

CUMI SHARP
CUMI SLICE
the cutting edge
CUMI Plas



CUMI

CUMI

Carborundum Universal Limited. (CUMI) is part of the USD \$ 3 billion Murugappa Group. Started in 1954, CUMI is a leading supplier of precision products to a variety of end user industries. The group is one of India's largest family promoted, professionally managed corporates with over 34,000 employees. A pioneer and market leader in several fields with over 40 manufacturing locations across 12 States in India, the group has a strong presence in abrasives, engineering, bio-products, plantations, sugar, farm inputs, finance, general insurance and nutraceuticals.

CUMI is vertically integrated from mining and calcination of bauxite to manufacture of **electro minerals**, **abrasives** and **refractories** with operations in India, Australia, Canada, China, Far East, Middle East, Europe, Russia, South Africa and US. CUMI's constant innovation and product upgradation, through in-house R&D and strategic alliances with global leaders in material science, have ensured market leadership in India and international recognition as a manufacturer of quality minerals, ceramics and abrasives.



EMD

VALUES

With a constant emphasis and focus on immediate market access, Stringent Quality control, Comprehensive Solutions to customers, Global collaborations, World-class Research and Development, CUMI - Electro minerals continues to procure, produce and deliver premium grade electro minerals for over four decades.

CARBORUNDUM UNIVERSAL LIMITED

ELECTRO MINERALS DIVISION

Factory & Head Office:

Electro Minerals Division, PB No.1 K D Plot PO, Ernakulam, Kerala - 683 109, India
Voice: 0091 484 4093651 / Fax: 0091 484 2532019, Email: salesemd@cumi.murugappa.com
www.cumi-emd.eu

CUMI AMERICA INC.
3940 Olympic BLVD / STE 400 / Erlanger KY 41018
U.S.A.
Voice: 859 816 02 34 / Fax: 859 372 66 07
Email: cumiusa@aol.com

Europe Contact:
Schmiedegasse 24
D-50735 Köln, Germany
Tel: +49 151 1274 0882
Fax: +49 221 2714 0047
Email: info@cumi-emd.eu

www.cumi-emd.eu

www.cumi-emd.eu