

BEFORE



JOINING



METALS



JOIN



**GRECIAN
MAGNESITE**

Magnesium oxide for high quality fluxes.



GRECIAN MAGNESITE

Joining Metals

Welding is the dominant technique for joining metals in a variety of industries such as automotive/transportation, construction, pipelines, ship buildings, oil refinery, power generation, and many others.

When the welding material is in its molten state, it tends to absorb and become contaminated with oxygen and nitrogen from the atmosphere, which causes the solidifying weld to become porous and brittle. The main technique applied to prevent this phenomenon is the use of fluxes, such as flux coated stick electrodes, flux cored wires and agglomerated fluxes.

Magnesium Oxide

The agglomerated fluxes, which are mainly used in the Submerged Arc Welding, are complex formulations of several ingredients, in powder form, including magnesium oxide (MgO). The amount of MgO varies from 5-20% according to the type and use of the flux while for some specific products can go up to 40%. Its main role is the adjustment of the slag properties such as the viscosity and the refractoriness, that affect the pock marks formation, detachability, slag inclusion in the weld and shape / appearance of the welded metal.

“Join” Our Products

Grecian Magnesite produces and commercializes a distinct range of Magnesium Oxide (Deadburned-Sintered Magnesia) free flowing powders, under the brand name **SM**, namely **SM-88**, **SM-90** & **SM-96** dedicated for the welding industry.

Chemical & physical properties – SM Powders:				
		SM88	SM90	SM 96
MgO %	min	88,00	89,00	95,40
C %	"	0,05	0,05	0,05
P %	"	0,01	0,01	0,01
S %	"	0,01	0,01	0,01
Hg ppm	"	<2	<2	<2
LOI %	"	0,25	0,20	0,15
G.Size	Ground, according to customers' requirements			

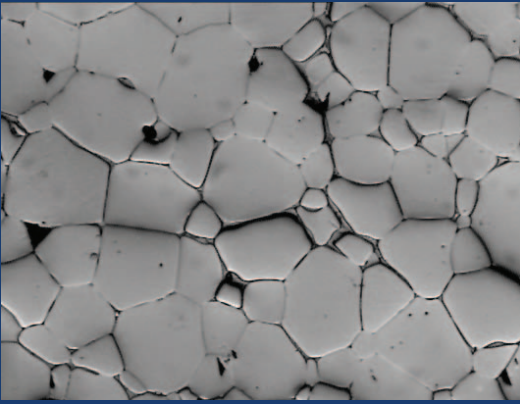
Our **SM** powders have been used for more than two decades by the leading welding manufacturers around the world, with excellent results. To this day, Grecian Magnesite is recognized as a foremost supplier to the industry offering highly consistent - superior performance - products, which improve both the manufacturing process and end-product quality. Our technical support, on time delivery, supply security and price stability, are equally important factors that help our customers to improve their competitiveness.

✧ Enhanced Properties

The nature of our mineral deposits (microcrystalline type of magnesite, CaO/SiO₂ forsteritic ratio) together with our extensive know-how in calcination (sintering) of magnesite, result to the production of the **SM** Powders with a suitable microstructure and mineralogical composition to cover the stringent requirements of the application, such as:

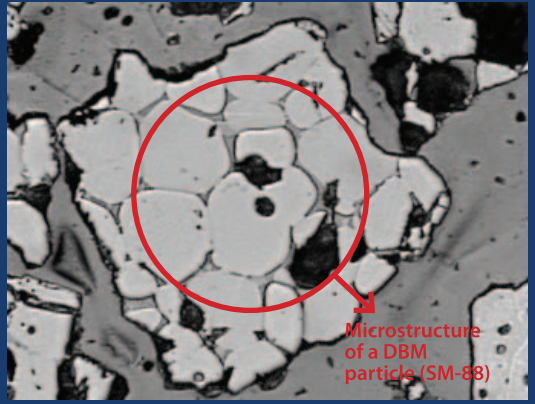
- ✧ High melting point – High refractoriness
- ✧ High resistance to hydration – Low hydrogen concentration in the weld
- ✧ High bulk density
- ✧ Very low Loss on Ignition (L.O.I.)

Furthermore, the chemical purity of our magnesite and the careful control of sintering parameters assure the production of consistent products with very low content of undesirable impurities such as C, P and S.



Refractoriness you can count on.

Microstructure of SM Powders (SM96). Well formed periclase crystals with significant amount of direct bonding and low amount of intercrystalline secondary phases, exhibiting very high refractoriness.

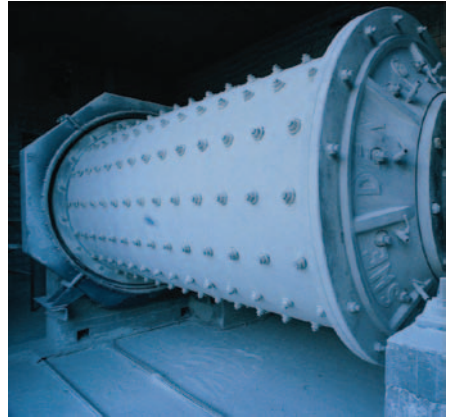


Improved hydration resistance.

The SiO_2/CaO ratio in the SM Powders leads to the formation of forsterite (Mg_2SiO_4) as the main secondary phase. This silicate phase surrounds the periclase crystals and significantly improves the hydration resistance.

* Ready To Blend

During the final stage of the manufacturing process, milling, sieving and packing is performed in a continuous operation. Grecian Magnesite's dedicated installations, along with our experienced & skilled personnel, ensure the uniform production of the **SM** - welding - powders with the correct particle size, shape and distribution. We supply our customers tailor made - ready to blend products; for fluxes with consistent composition and good strength.



Guaranteed Quality

Strict quality procedures, implemented by specialized personnel, are used at all stages of the manufacturing process, from mining through the dispatch of the final products. Key properties of the **SM** powders are thoroughly controlled, according to European and international standards, to ensure that they conform to customers' specifications.



About Grecian Magnesite

Grecian Magnesite is a magnesia specialist established in 1959. The company mines, processes and sells a wide range of application-specific grades of magnesium oxide with an annual capacity of 200,000 MT.

Grecian Magnesite's open cast mines and production facilities are located 70km south-east of Thessaloniki, Greece. The magnesite ore is of exceptional quality, with low trace elements, undesirable substances and high levels of consistency.

Grecian Magnesite additionally holds shares in several other magnesia companies, including Akdeniz Mineral Kayanaklari A.S of Turkey, Magnesitas Navarras S.A of Spain and Van Mannekus B.V of the Netherlands.



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