

● Spinel MgAl₂O₄ ● Refractory Material & Structural Ceramics

Description

Novotech’s magnesium aluminate, MgAl₂O₄, is a nano spinel material that can be used in refractory materials, structural materials, microwave dielectric, ceramic capacitors, catalyst and catalyst support and optics.

Novotech magnesium aluminate has a low density (3.58 g/cm³), high melting point (2135 °C), good resistance to chemical corrosion and excellent strength at extremely high temperatures which makes it ideal for use in harsh environments.

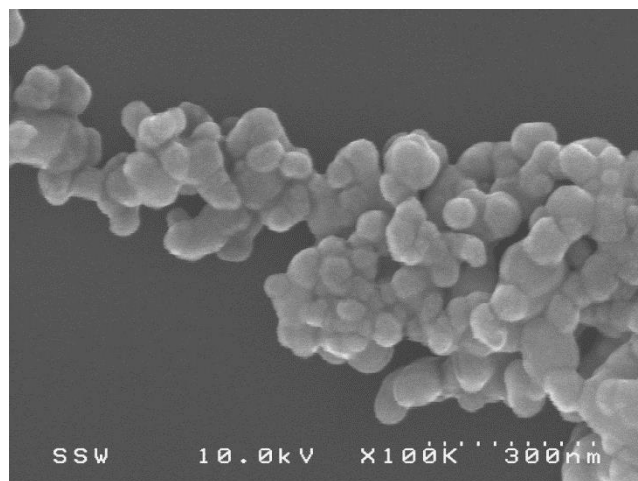
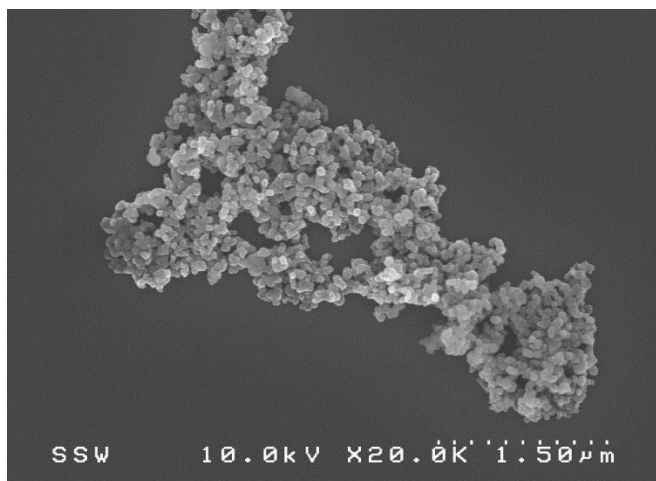
Specification

TYPICAL PROPERTIES	VALUE
CAS	12068-51- 8
EC Number	235-100-5
Appearance	White
Molecular Formula	MgAl ₂ O ₄
Molecular Weight	142.27 g/mol
BET Surface Area	152.8 (m ² /g)
Average particle size	50-120 nm
Density	3.64 g/mL
Bulk density:	300 g/L
Crystal form	Cubic
Thermal Conductivity (W/m.K)	5.9
Melting Point	2130°C

CHEMICAL ANALYSIS (Calcined Baasis)			
Element	Sample (%)	Element	Sample (%)
SiO ₂	0.00	K ₂ O	0.00
Al ₂ O ₃	71.73	P ₂ O ₅	0.00
Fe ₂ O ₃	0.03	Cr ₂ O ₃	0.01
MgO	28.64	Cl	0.00
Na ₂ O	0.00	S	<0.07

Other elements tested (<0.01%): As, B, Ba, Be, Bi, Cd, Ce, Co, Cr, Cu, In, Li, Mn, Mo, Nb, Ni, Pb, Pd, Pt, Sb, Se, Sn, Ta, Te, Tl, V, W, Zn & Zr. Results in weight percent unless otherwise indicated.

X-ray diffraction	
Phase	
Spinel	major
Hexahydrate (MgSO ₄ *6H ₂ O)	-----



Applications

Refractory material

As a refractory material Novotech MgAl₂O₄ spinel has several unique applications in both sintered ceramics and coatings. It is considerably more resistant to aggressive slags than alumina.

Mono crystal production

On industrial scale high-purity MgAl₂O₄ is used in the production of spinel mono-crystals for optics and electronics. The most widely used application of spinel is the base/substrate for high-brightness LED lighting. Novotech's technology for production of high-purity spinel offers the manufacturers of spinel mono-crystals the perfect raw material for use on an industrial scale.

Ceramic filters and membranes

For the membrane layer of the ceramic filter we recommend Novotech's high-purity MgAl₂O₄. For the cost and scalability of this chemical there nothing else in the market that can compare.