

**THE EXCELLENCE**

ADAPTED TO YOUR NEEDS



**XIETA**

[www.xieta.com](http://www.xieta.com)

# ALUMINA NANOBEADS XIETA® - AZ

## CHARACTERISTICS

The research and development laboratory of XIETA INTERNATIONAL S.L., based in Barcelona (Spain) and specialized in all kind of advanced ceramic materials, launches its last development: the AZ alumina nanobeads. The AZ nanobeads provide a response for those high demanding milling processes which required the use of Zirconia micro balls until now.

To produce the nanobeads AZ, we are using the last developments which have been established in the manufacturing processes of nano structured materials. The nanobeads AZ are nanocrystalline compounds with aluminic matrix reinforced with a dispersion of ceramic particles constituting a second distinct crystalline phase, thus generating a ceramic nanocomposite. Furthermore, the implementation of double sintering processes used in bio-nanotechnology, has yielded a product with an alumina microcrystals homogeneous structure, with a fully absence of porosity and imperfections which allows to obtain a grinding media with perfect spherical shape, with high mechanical properties and high wear resistance.

At present, the AZ Nanobeads are steadily being used by manufacturers in several sectors, whom confirmed their low wear levels, just being comparable to the wear levels of Zirconium microspheres but with a more economic price. At the same time, a great cost saving can be obtained due to the bulk density difference of both types of balls, causing a significant reduction in the grinding process costs.

The AZ Nanobeads are specially formulated to be used in high energy mills, in which a high degree of fineness is required, reaching nano metric sizes and therefore giving the possibility to be used in high speed mills of various industrial fields such as inks, paints, advanced ceramics, mining, cosmetics, pharmaceutical...

## GENERAL PROPERTIES

Main Raw Material	Calcined Alumina
Alumina Content (%)	≥93.5
Specific Weight (g/cm <sup>3</sup> )	3.75±0.05
Colour	White
Mohs Hardness	9
Vickers Hardness (0.5 kg)	1200±50
Compressive Strength (kgf-2mm)	≥200
Thermal Exp.Coef. (10 <sup>-6</sup> / °C: 20-1000 °C)	7 -8

## CHEMICAL COMPOSITION

Al <sub>2</sub> O <sub>3</sub> (%)	≥93.5
SiO <sub>2</sub> (%)	≥3.00
Others (%)	≥3.50

## AVAILABLE SIZES

Diameter	Diameter
0.25 - 0.34 mm	1.4 - 1.6 mm
0.34 - 0.44 mm	1.6 - 1.8 mm
0.4 - 0.6 mm	1.8 - 2.0 mm
0.8 - 1.2 mm	2.0 - 2.5 mm
1.2 - 1.6 mm	2.5 - 3.0 mm

\* Please ask for further sizes

Data and specifications contained in this technical data sheet may be subject to any change or modification by the manufacturer without notice. In case you need any clarification or you have any query, please contact our technical department.

[www.xieta.com](http://www.xieta.com)