





Jiangxi Sanxin New Materials Co., Ltd. was founded in 2008, we provide yttria stabilized zirconia, alumina and zirconia silicate beads, ceria stabilized zirconia beads.

Our main technical and management personnel has been engaged in the research of zirconium dioxide ceramic grinding media for more than 30 years.

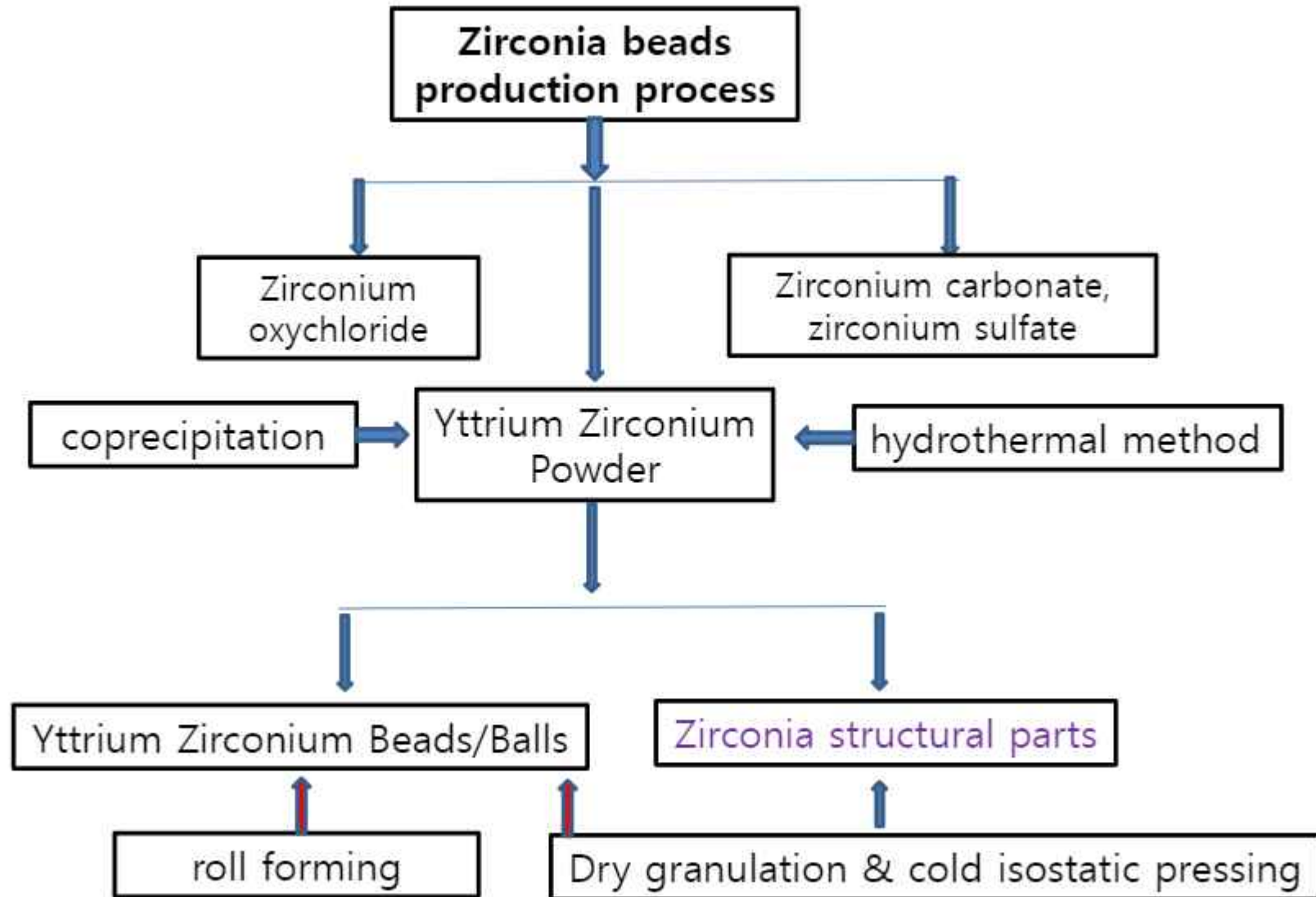


There are four main achievements for Sanxin New Materials:

- ①1984~1991, zirconium dioxide (yttrium oxide)-zirconium dioxide series nano powder wet preparation technology with controllable agglomeration state;
- ②1987~1991, the characteristics of friction system of Y-TZP ceramics;
- ③In 1994, zirconium dioxide (yttrium oxide) beads above $\Phi 0.8\text{mm}$ diameter were prepared by rolling method, which was the first in China.
- ④From 2010 to 2015, the drop ball forming process was studied. The product is used for ceramic ink grinding.



Sanxin New Material



Zirconia ball production process flow diagram

Co-precipitation
to make powder



hydrothermal method
to make powder



calcined



Zirconia ball production process flow diagram

Wet Ultra-fine
Grinding



spray drying
to produce
powder



Molding



Zirconia ball production process flow diagram

High temperature
sintering



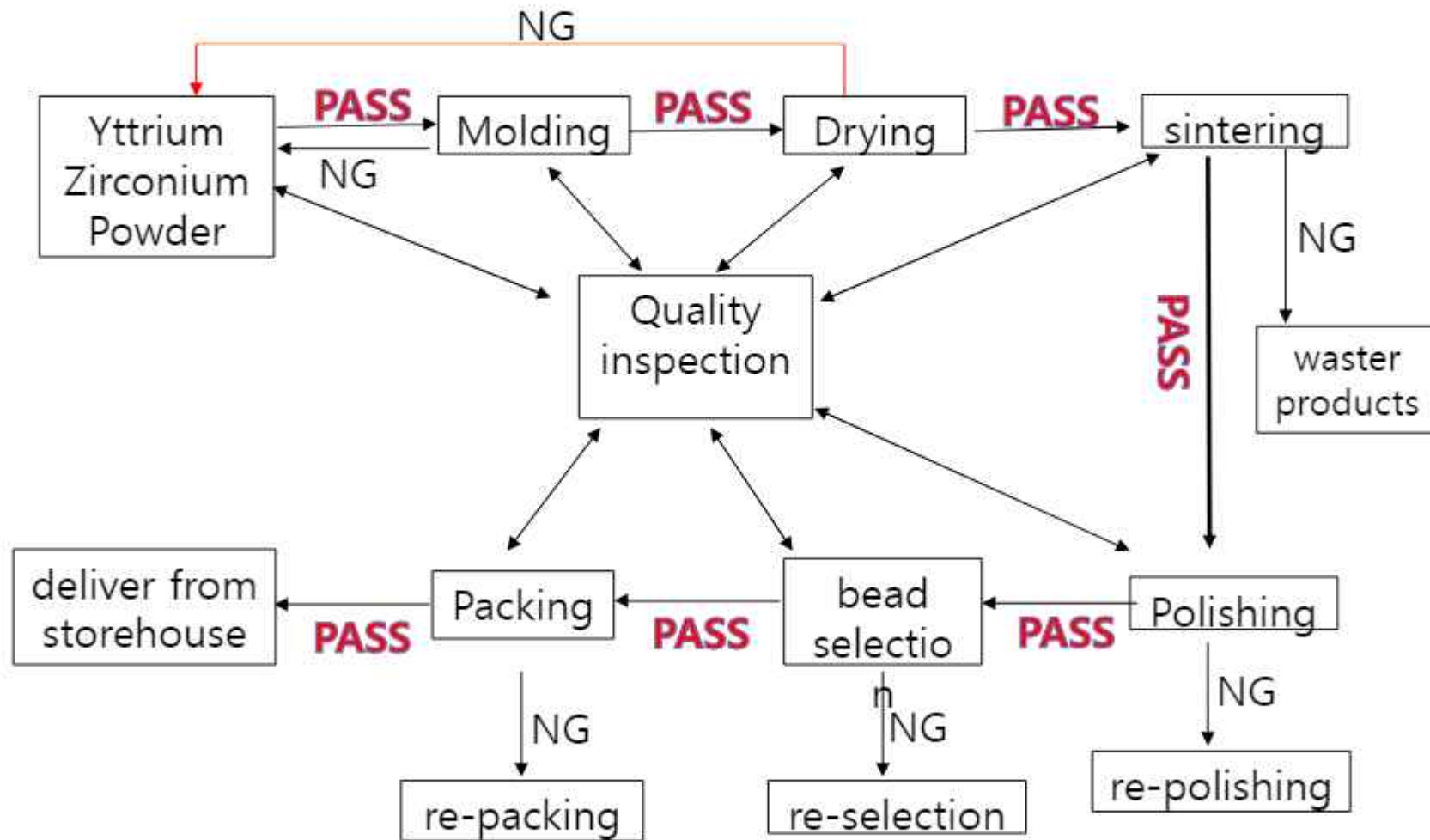
Polishing and
screening



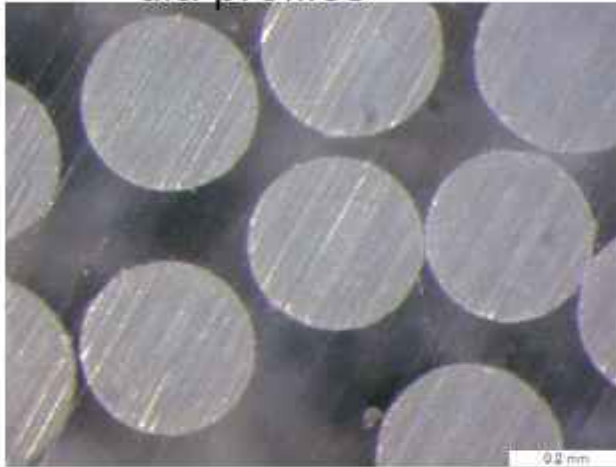
Testing



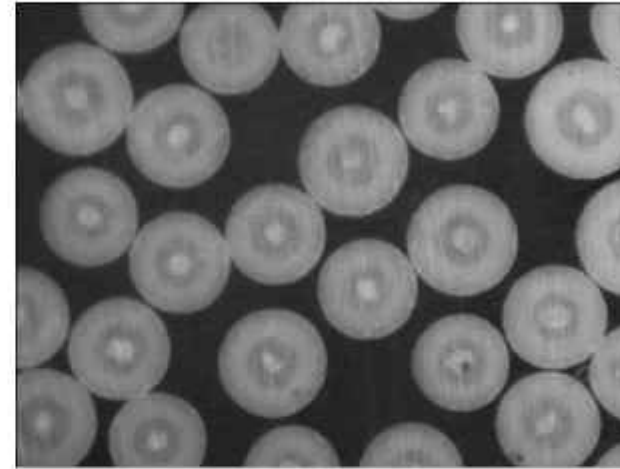
Quality Control Process



Y-TZP Metallographic photographs of grinding media profiles



a



b

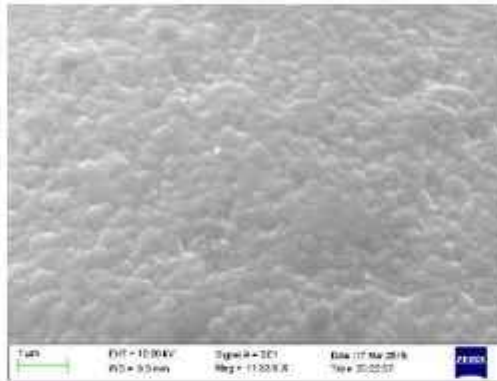
consistent inside and out

By testing the vickers hardness at different positions inside the grinding medium, the inner and outer dense uniformity of the internal structure is determined according to the test data results.

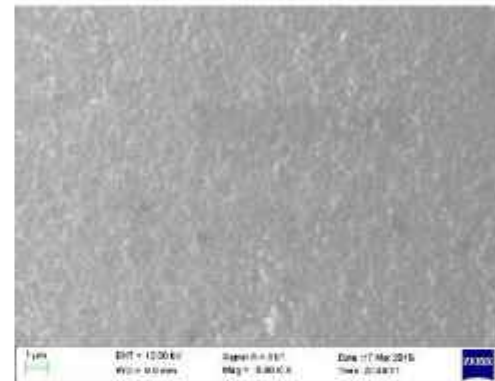


hardness test chart at different positions inside

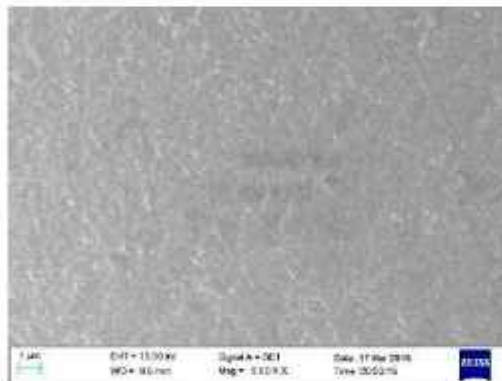
Sanxin New Material



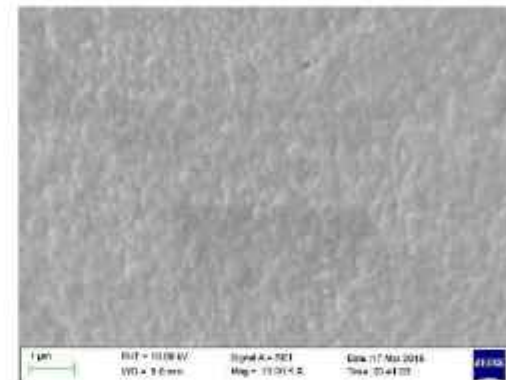
SANXIN Factory



Japanese Factory A



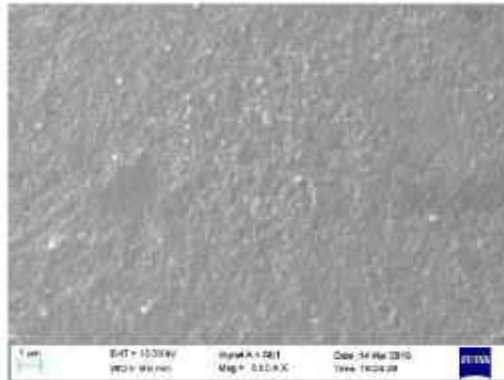
Japanese Factory B



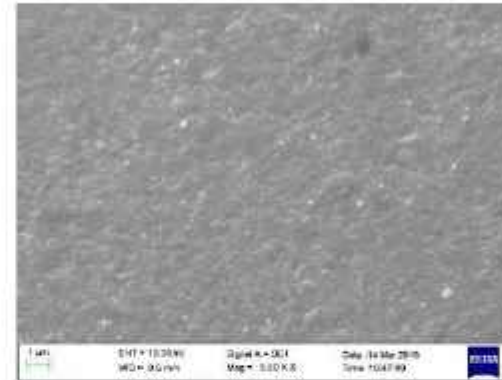
French Factory beads

Y-TZP SEM photo of grinding media surface

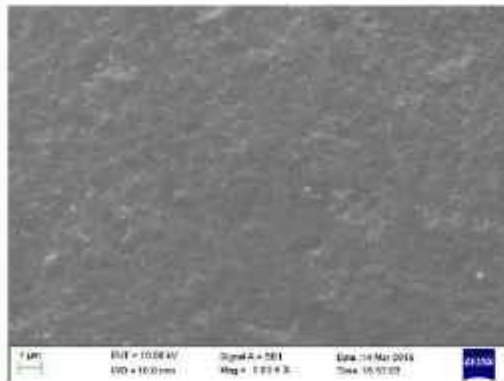
Sanxin New Material



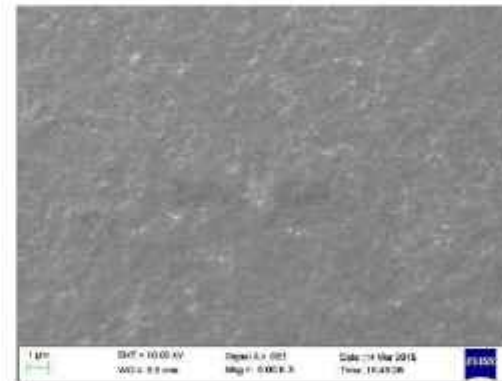
SANXIN Factory



Japanese Factory A



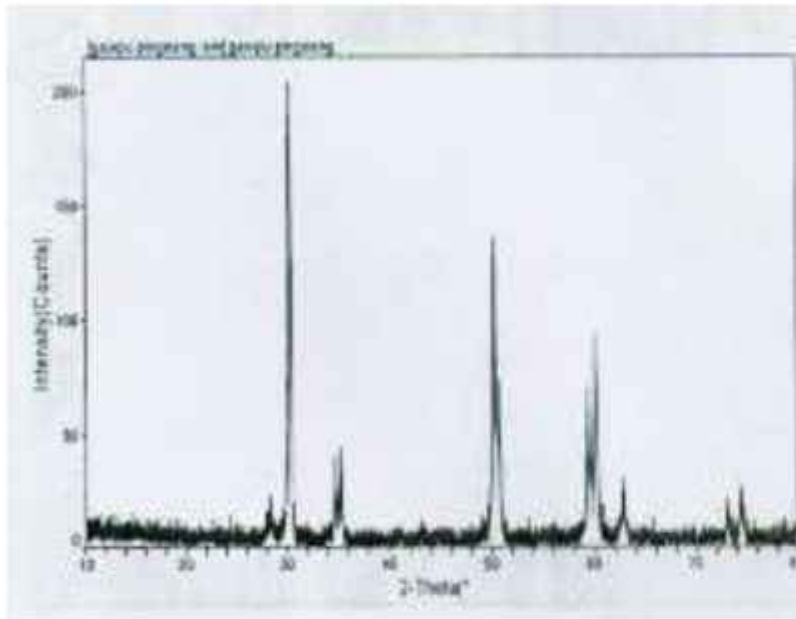
Japanese Factory B



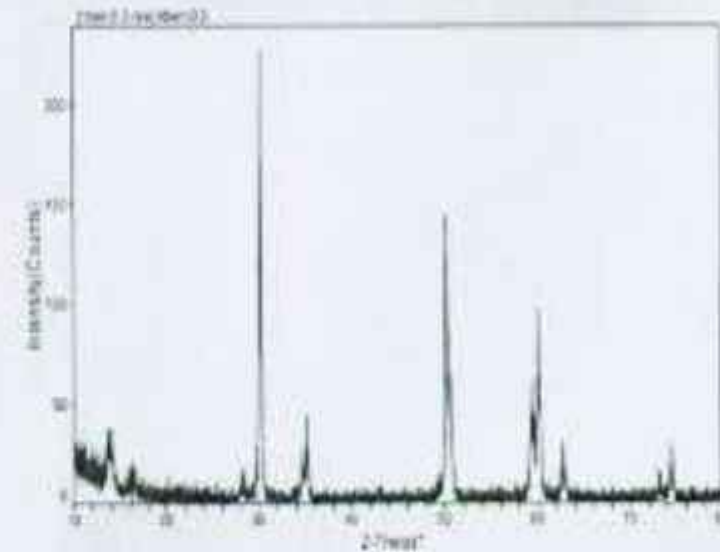
French Factory beads

Y-TZP SEM photo of abrasive surface morphology of grinding media

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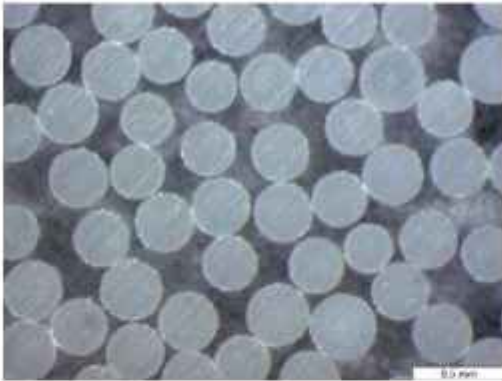
SANXIN Factory



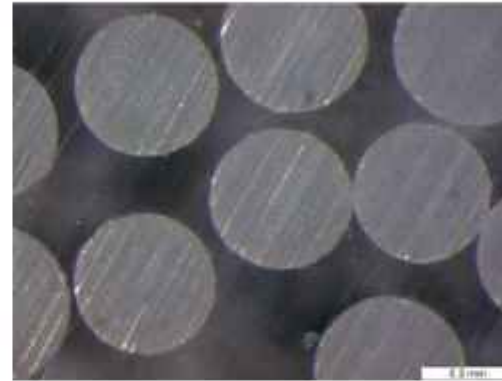
Japanese Factory B

Y-TZP XRD pattern of grinding media

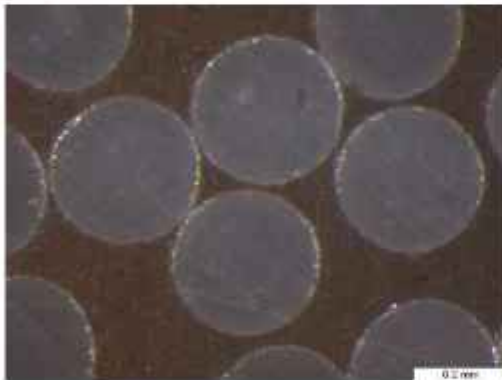
Sanxin New Material



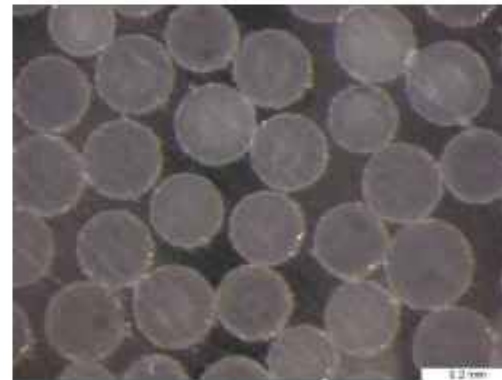
SANXIN Factory



Japanese Factory A



Japanese Factory B



French Factory beads

Y-TZP Metallographic photographs of grinding media profiles

Sanxin New Material

Test Report

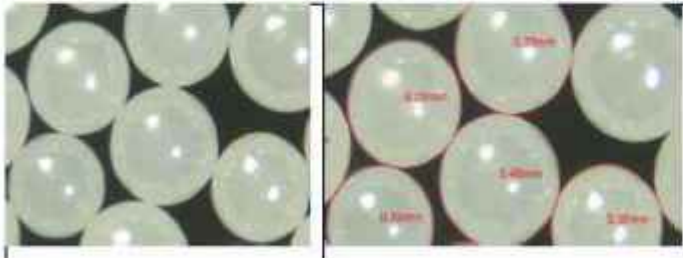
serial number: SX -AL-0306-0211

产品名称	Y-TZP beads	Size/level	0.3-0.4mm
批号	01-220222	Quantity	22.24

Project		Index	Result
Major composition %	ZrO ₂ +HfO ₂ %	≥ 94.5±0.05	94.48
	Y ₂ O ₃ %	5.2±0.2	5.19
size (mm)		average*	0.36
		minimum*	0.30
		maximum*	0.40
density (g/cm ³)		>6.0	6.05
bulk density (g/cm ³)		>3.6	3.67
V-Hardness (HV10)		≥ 1250	1248
wear rate (%)**		≤ 0.6	0.295

^a Detection of 100 balls

**Testing conditions: 800 grams of balls, 50 grams white corundum powder, 400 grams of water, 1 liter ball milling jar, rapid grinding time 8 hours.



Inspector: Mrs. chen 22.2.24
Signature date

The Y-TZP beads produced by Sanxin, comparing with the three international brands, the grain size, microstructure, wear surface morphology and crystal phase composition are basically the same.

The preparation technology of Sanxin Y-TZP grinding media has made great progress in recent years, and the product quality is close to the world advanced level.