



# Grinding Media

	Composition	Density	Bulk Density	Hardness	Color
Steel		7.8	4.9	60-65 RC	Silver
Alumina	Al <sub>2</sub> O <sub>3</sub>	3.8	2.2	1600 Hv	White
Zircon	ZrSiO <sub>4</sub>	3.8	2.4	1000 Hv	White
ZY	ZrO <sub>2</sub> +Y <sub>2</sub> O <sub>3</sub>	6	3.6	1300 Hv	Ivory
CY	ZrO <sub>2</sub> +CeO <sub>2</sub>	6.2	3.8	1200 Hv	Brown

**competitive prices, finest quality, prompt shipment, efficient service**

# About Us

Welcome to STR Industries where you will find high quality grinding media products and services at competitive prices. We are TS 16949 certification, which is the auto industry standard, and higher than ISO 9001 certified. STR Industries is committed to customer service with real hands on experience. No job is too small or too big. Product is shipped only after 100% inspection and all deliveries are on time. Long term relationships are our goal.



Each year more than 500 tons of grinding media are produced and sold worldwide. While STR always stays on the cutting-edge of technology, all processes and policies are designed for maximum quality.

### Working Condition & Choosing Media

- $F = m \times a$
- $W = Fs = (mV^2)/2$

- Unit weight(m) of media must be large in order to increase grinding and dispersion ability(W).
- When the same grinding media is used, the mill's function(v) should be superior.
- The mill might wear out if its material physical property(hardness etc) is weaker than the media's.
- Media size reduction(wearing) might occur if the media's physical property(hardness etc) is weaker than the mill's.

- Energy input should be comparable with viscosity in order to prevent damage to the mill.
- The best condition results by increasing the unit mass of the media to increase efficiency.

(lack of Mill energy)      (enough mill energy)      (exceeding mill energy)

Customers worldwide have found that by partnering with STR Industries they have been able to realize a 20 to 30 percent cost savings versus previous years. We want to work with you to reduce your company's manufacturing costs, provide you with quality products and individualized customer service at a competitive price.

## Next Generation Ceramic Media

The beads or balls, have been chosen as a media for the process of mixing, crushing, dispersing and purifying variable materials. Steel media is commonly used but can not be used for manufacturing bright colors where steel contamination could be a problem for some products. Ceramic beads reduce contamination in products and perform as well as steel.

### Why Ceramic Bead?

- Higer density
- Reduced product contamination
- Can be used with white or bright colors
- Longer life expectancy
- Significant savings and availability in nano sizes

### NAME OF ZIRCONIA

Generally speaking, oxides are named by changing the suffix of the constituting metal element "-ium" to "-a", such as alumina for aluminium oxide and titania for titanium oxide. Zirconia is therefore the same as Zirconium Oxide (ZrO<sub>2</sub>).

### APPLICATION OF ZIRCONIA

Zirconia is used in Grinding media, Cutting Tools, Ferruls, Oxygen Sensor, Cubic Zirconia(as Jewelry) and Refractory Materials. Because zirconia has a high hardness, strength, toughness, excellent wear resistance (structural properties), electrical conductivity(electrical properties), and low thermal conductivity (thermal properties). Zirconia Beads make the best use of structural properties in specific characters of Zirconia.

### Ytrria Stabilized Zirconia

High density and hardness Ytrria Stabilized Zirconia Beads ZY are offering the user higher productivity, longer mill life and lower operation cost in the long run. Available Size: 0.1, 0.3, 0.6, 0.8, 1.0, 1.5, 2.0 and 2.7 mm with 100% Round and uniformed.

### Ceria Stabilized Zirconia

Ceria Stabilized Zirconia Beads CZ offers the highest density 6.2 g/cm<sup>2</sup>, optimized wear resistance and cost effectiveness for efficient milling. Available Size: 0.3, 0.6, 0.8, 1.0, 1.5, 2.0 and 2.7 mm with 100% Round and uniformed.



## Facilities

Each type of ball has its special production process  
However, the production process can be generalized as follows



**1. Wire**  
STR Industries has very tight raw material control. Incoming inspections include dimension and composition are performed



**2. Heading**  
In order to obtain good ball blanks, advanced controllers such as brankamp are applied to control the wire feeding and heading pressure.



**3. Flashing**  
For every grinding process, STR Industries has full parameter control and verification procedures to guarantee the process stability and quality.



**4. Heat treating**  
In addition to imported Japanese furnaces, STR Industries has digital controllers to regulate the furnace temperature, heating time, and the carbon potential for the protective gas. The controllers will also record the furnace temperatures continuously for tracking purposes.



**5. Grinding**  
Machines and techniques transferred from Japan, for every parameter and set-up detail. STR Industries has very tight monitoring steps and controls.



**6. Fine grinding**  
Fine grinding is the final grinding step. finished balls have satisfying quality in terms of dimension, roundness, and surface finish.



**7. Cleaning**  
Automatic ultrasonic washing machine and hydrocarbon Solvents are used to wash the balls. A high level of cleanliness and anti-corrosion are achieved simultaneously.



**8. Sampling Quality Control**  
State-of-the-art measuring equipment are used to ensure ball quality. The BPC charts are plotted for monitoring the process, stability and continuous improvement.



**9. 100% inspection**  
In order to obtain 100% quality assurance, STR Industries has purchased various inspection devices such as Roller Mike and AVIKO. New types of optical inspections machines are also being developed

**Our principle has always been to satisfy every client's specific requirements in terms of cost reduction, production efficiency, product quality and service. Our global locations in Asia, Europe and the USA allow us to service customers in a timely fashion.**

**If you are in need of product or are uncertain of the type and quantity required to best fit your application, please contact one of our service engineers to work with you. If you already know what you need, please contact us for a competitive quote so you can compare quality and cost in order to make the best choice.**

**Give us a call,  
We will give you a quote!**



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**We look forward to working with you.**