

# CARBOGRIND ZIRPLUS

Ultra high-performance, intermediate-density, rolled ceramic grinding media

Sizes: 2.0-8.0mm | Apparent density: 3.6-3.8 g/cm<sup>3</sup>

## Features

- Superior strength and hardness
- Near-perfect spherical shape
- Lower density than alternatives such as steel or iron balls
- Exceptionally low internal porosity
- Chemically inert, environmentally friendly
- Light color with high brightness

## Benefits

- High grind efficiency
- Longer product life cycle
- Decreases product contamination
- Reduces equipment wear and maintenance costs
- Requires less energy than steel or iron balls



CARBOGRIND® ZIRPLUS ultra high-performance, intermediate-density, rolled ceramic grinding media is engineered to provide unmatched economic and performance advantages in ultra-fine grinding of hard minerals. The rolled manufacturing process results in superior strength and wear resistance with a consistent particle size and shape.

## Applications and markets

- Vertical and horizontal mills
- Mining
- Industrial minerals
- Paints and pigments

## Chemical and physical properties

### Typical size

| Product | Diameter (mm) | Diameter (in) |
|---------|---------------|---------------|
| 360-020 | 2.0 - 3.0     | .079 - .118   |
| 360-030 | 3.0 - 4.0     | .118 - .158   |
| 360-040 | 4.0 - 5.0     | .158 - .197   |
| 360-050 | 5.0 - 6.0     | .197 - .236   |
| 370-020 | 2.0 - 3.0     | .079 - .118   |
| 370-030 | 3.0 - 4.0     | .118 - .158   |
| 370-040 | 4.0 - 5.0     | .158 - .197   |
| 370-050 | 5.0 - 6.0     | .197 - .236   |
| 380-020 | 2.0-3.0       | .079-.118     |
| 380-030 | 3.0-4.0       | .118-.158     |
| 380-040 | 4.0-5.0       | .158-.197     |
| 380-050 | 5.0-6.0       | .197-.236     |

Other sizes and densities available on request.

### Typical additional properties

|   | 360    | 370    | 380    |
|---|--------|--------|--------|
| Apparent density (g/cm <sup>3</sup> )     | ≥ 3.60 | ≥ 3.65 | ≥ 3.75 |
| Vickers hardness* (0.5 kg)                | 1200   | 1200   | 1200   |
| Mohs hardness                             | (9+)   | (9+)   | (9+)   |
| Thermal expansion coefficient (20-1000°C) | 7-8    | 7-8    | 7-8    |
| Sphericity                                | > 95   | > 95   | > 95   |
| Color                                     | White  | White  | White  |

### Chemical composition

|                                | 360   | 370        | 380   |
|--------------------------------|-------|------------|-------|
| Al <sub>2</sub> O <sub>3</sub> | 70.0% | 80.0~90.0% | 80.0% |
| ZrO <sub>2</sub>               | 6.0%  | 5.0~10.0%  | 13.0% |
| Other                          | 24.0% | 5.0~10.0%  | 7.0%  |

\*Standard deviation as % of median  
Data is subject to change due to continuous improvement of the product.

Talk to CARBO to find out how we can improve your end-product quality and reduce operating costs.

Learn more at +1 800 551 3247 | [carboindustrial.com](http://carboindustrial.com)

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