



## Alumina Castable Type ZIRALCAST-94

### General Information

ZIRCAR Ceramics' Alumina Castable Type ZIRALCAST-94 is a high-purity, lightweight alumina refractory castable composed primarily of hollow, fused alumina bubbles incorporated into a high-quality hydraulically setting cement. With its high alumina bubble aggregate, ZIRALCAST-94 exhibits low thermal conductivity, excellent chemical stability and very good strength. ZIRALCAST-94 provides good utility in applications with temperatures as high as 1815°C (3300°F). ZIRALCAST-94 is a conventional castable refractory designed to be installed using typical concrete placement techniques.



### Characteristics & Properties

Composition, wt%	
Al <sub>2</sub> O <sub>3</sub>	94.5
CaO	4.8
SiO <sub>2</sub>	0.4
Fe <sub>2</sub> O <sub>3</sub>	0.1
Alkali	0.2
Water of Hydration, wt %	14-17
Hydraulic Set Time, hr	
Initial	1.5-6
Final	4-8
Grain Size, mesh (mm)	4 (5) and finer
Density, g/cc (pcf)	
As Cast	1.68 (105)
After firing to:	
1095°C (2000°F)	1.59 (99)
1370°C (2500°F)	1.62 (101)
1650°C (3000°F)	1.54 (96)
Modulus of Rupture**, MPa (psi)	
After firing to:	
815°C (1500°F)	4.9(710))
1095°C (2000°F)	2.7 (390)
1370°C (2500°F)	7.9 (1150)
1650°C (3000°F)	10.5 (1520)

### ZIRCAR Ceramics, Inc.

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Technical Data Bulletin  
Alumina Castable Type ZIRALCAST-94  
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## Characteristics & Properties Continued

Firing Shrinkage, %	
After firing to:	
760°C (1400°F)	0.3
980°C (1800°F)	0.1
1315°C (2400°F)	0
1480°C (2700°F)	-0.3
Thermal Conductivity**, W/m°K (BTU/hr ft² °F/in)	
1038°C (1900°F)	0.71 (4.89)
1249°C (2280°F)	0.72 (5.02)
1460°C (2660°F)	0.79 (5.46)
1671°C (3040°F)	0.93 (6.47)
Shelf Life	Not to exceed 24 months

The data presented herein is intended to help the user to determine the appropriateness of this material for their application. This data is a nominal representation of this product's properties and characteristics and therefore should not be used in preparing specifications. \*\* Properties expressed parallel to thickness.

## Suggested Applications

Insulating refractory in furnaces operating to temperatures as high as 1815°C (3300°F).  
 Manufacture of low-density cast refractory shapes including covers, crowns and doors.  
 Crucible support in laboratory glass melting furnaces.  
 Liner for crucible pre-heaters.

## Availability of Standard Beads

ITEM #	DESCRIPTION
D194-01	ZIRALCAST-94, 55 LB.

## To Order

**Standard ZIRALCAST-94:** order online or specify quantity, item # and description.  
 Standard items are available for immediate shipment from stock. Standard item packaged in 25kg (55 lb.) multi-wall paper bags, 48 bags (1200kg or 2645 lb.) per 42" x 42" pallet. Bulk-bag packaging is available upon request.

**Custom precast shapes** are available on request. Please provide requirements for consideration.



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