

ZIRCONIUM OXIDE CRUCIBLES



The Tiger GmbH is a specialist manufacturer of crucibles for high temperature applications. We have developed a range of new Zirconia crucibles for melting the platinum group metals (PGM). The crucibles can also be used for melting Nickel and Cobalt super alloys and Uranium. The significant improvement is the longer life of the crucible.

Tiger Zirconia Crucibles give cleaner melts at temperatures up to and above 1900°C – this is due to their slower vitrification rate. Zirconium Oxide is an excellent insulating material and will withstand many multiple melts. The crucibles can be stabilised with Calcium Oxide, Yttrium or Magnesium Oxide. The Zirconia crucible can also be contained within an outer Alumina crucible to further extend the life of the product.



Each crucible is hand made to the highest quality / specification and visually inspected in quality control to give improved performance and reliability in use. This attention to detail in our manufacturing process means that Tiger crucibles give exceptional performance especially when compared to isostatically pressed products.

Alumina and Zirconia Crucible

- Improved life and reliability – some customers have experienced 25 melts
- High temperature resistance up to and above 1900°C
- Cleaner melt due to the slower vitrification gives purer metal and less contamination.



Tiger Zirconia crucibles are used by Platinum Group Metal (PGM) refineries, mining companies, Platinum alloy suppliers, Platinum jewellery factories, Investment casting foundries for medical applications and Specialist foundries using Nickel and Cobalt based super alloys.

ACTUAL CRUCIBLE DIMENSIONS AVAILABLE

Order No	Description	External Diameter mm	External height mm	Internal Diameter mm	Internal height mm
7701.33	Zirconium Crucible	42	70	30	60
7702.88	Alumina Crucible	64	115	50	105
7703.38	ZrO ₂ / Al ₂ O ₃ Set # 0	64	135	30	60
7711.33	Zirconium Crucible	56	88	38	78
7712.88	Alumina Crucible	86	103	66	93
7713.38	ZrO ₂ / Al ₂ O ₃ Set # 1	86	123	38	78
7721.33	Zirconium Crucible	70	115	50	105
7722.88	Alumina Crucible	100	135	80	125
7723.38	ZrO ₂ / Al ₂ O ₃ Set # 2	100	155	50	105
7731.33	Zirconium Crucible	80	142	58	128
7732.88	Alumina Crucible	110	162	90	155
7733.38	ZrO ₂ / Al ₂ O ₃ Set # 3	110	192	58	128
7741.33	Zirconium Crucible	98	170	77	155
7742.88	Alumina Crucible	128	205	108	195
7743.38	ZrO ₂ / Al ₂ O ₃ Set # 4	128	235	77	155
7751.33	Zirconium Crucible	122	245	98	232
7752.88	Alumina Crucible	150	300	130	290
7753.38	ZrO ₂ / Al ₂ O ₃ Set # 5	150	330	98	232
7761.33	Zirconium Crucible	150	250	125	230
7762.88	Alumina Crucible	196	310	166	295
7763.38	ZrO ₂ / Al ₂ O ₃ Set # 6	196	360	125	230

TECHNICAL SPECIFICATIONS

	ZIRCONIUM OXIDE CRUCIBLE	ALUMINA OXIDE CRUCIBLE
Chemical analysis	ZrO ₂ 94% CaO 4.0 % SiO ₂ 0.4 % Al ₂ O ₃ Trace Y ₂ O ₃ Trace Fe ₂ O ₃ Trace	Al ₂ O ₃ 98 % CaO 1.0 % SiO ₂ 0.2 % Fe ₂ O ₃ 0.1 % MgO Trace
Thermal Expansion	6-9.5 x 10 ⁻⁶	-----
Porosity	≈ 20.5 %	≈ 23 %
Density	≈ 4.4 g / cm ³	≈ 3 gm / cm ³
Thermal shock	Adequate - the crucible should be back filled and fixed when heated by induction	
Max Working temperature	2000 °C	1750 °C
Please note that the above information is determined either in our own laboratories and / or in use at our customers. This information intended as a guide only and no legal rights can be derived.		

Please note that we are able to manufacture custom sizes and coatings – simply send us your specification / drawing or sample crucible (can be used).