

**Guaranteed Specifications (wt% by XRF)**

Grade	ZCO-1	ZCO-2	ZCO-3H	ZCO-3L	ZCO-4
ZrO <sub>2</sub> +HfO <sub>2</sub> (%) <sup>1</sup>	≥95.0	>96.6	>98.5	>98.5	>98.5
SiO <sub>2</sub> (%)	<4.0	<2.5	<1.0	<0.6	<0.35
Al <sub>2</sub> O <sub>3</sub> (%)	≤0.6	≤0.6	≤0.5	≤0.5	≤0.50
Fe <sub>2</sub> O <sub>3</sub> (%)	≤0.10	≤0.10	≤0.10	≤0.10	≤0.10
TiO <sub>2</sub> (%)	≤0.25	≤0.25	≤0.25	≤0.25	≤0.25

**Typical Chemical Analysis (wt% by XRF)**

Grade	ZCO-1	ZCO-2	ZCO-3H	ZCO-3L	ZCO-4
ZrO <sub>2</sub> +HfO <sub>2</sub> (%) <sup>1</sup>	95.6	97.3	98.5	98.6	99.0
SiO <sub>2</sub> (%)	3.5	2.0	0.8	0.5	0.24
Al <sub>2</sub> O <sub>3</sub> (%)	0.5	0.5	0.4	0.4	0.37
Fe <sub>2</sub> O <sub>3</sub> (%)	0.05	0.05	0.03	0.03	0.02
TiO <sub>2</sub> (%)	0.15	0.15	0.15	0.15	0.15
BaO (%)	0.01	0.01	0.01	0.01	0.01
CaO (%)	0.02	0.02	0.02	0.02	0.02
U+Th (ppm)	≤550	≤550	≤550	≤550	≤550
Specific Activity (Bq/g) <sup>2</sup>	3.4 – 4.3	3.4 – 4.3	3.4 – 4.3	3.4 – 4.3	3.4 – 4.3

<sup>1</sup> Calculated by difference

<sup>2</sup> Specific Activity is calculated from the U & Th assay

**Typical Physical Properties**

Specific Surface Area	1 m <sup>2</sup> /g
Tapped Bulk Density	2.0 g/cm <sup>-3</sup>
Loose Bulk Density	1.8 g/cm <sup>-3</sup>
Specific Gravity	5.75 g/cm <sup>-3</sup>
Crystal Structure	monoclinic
Moisture	0.1%
LOI	0.1%

**Radioactivity**

ZCO contains low levels of U and Th (U + Th ~ 550ppm, ~4.5 Bq/g). When following recommended safe handling practices, radiation exposure is unlikely to exceed 0.3mSv/year. ZCO containing lower levels of U and Th are also available.

**Other Information**

See [www.doral.com.au](http://www.doral.com.au) for Material safety data sheet

EINECS NO. 215-227-2

CAS NO. 1314-23-4

**Packing**

Standard packing is in 1 tonne bulk bags or 25kg multi-wall paper bags.

Milled product batches can be blended in 5 tonne lots for consistency of chemistry.

**Contact Details**

To obtain further information about our products, please send an email to [doral@doral.com.au](mailto:doral@doral.com.au)

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Document: PDS-011c – DFM – ZCO General  
 Last reviewed on 16/02/2010

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