

ZIRCON (CHILCHES)

Zircon is a naturally occurring refractory mineral and is therefore subject to variability. It is chemically inert and is stable to very high temperatures. Zircon has a very high thermal conductivity and acts as a chill to eliminate metal mold reactions and burn-in, resulting in a smooth cast surface. Zircon is available in both granular and flour form.



Zircon is almost exclusively used in the primary slurry and as a primary stucco. Because of its high density, zircon provides excellent flow characteristics in a primary slurry. The round grains do not cause defects such as rough casting surfaces.

Typical Material Properties*

	Sand	Flours		
		200# IC	250# IC	325#
ZrO ₂ +HfO ₂	>65%	>65%	>65%	>65%
TiO ₂	<0.25%	<0.25%	<0.25%	<0.25%
Fe ₂ O ₃	<0.15%	<0.15%	<0.15%	<0.15%
Al ₂ O ₃	<1.50%	<1.50%	<1.50%	<1.50%
SiO ₂	<33.0%	<33.0%	<33.0%	<33.0%
Uranium + Thorium	<500 ppm	<500 ppm	<500 ppm	<500 ppm
Specific Gravity	4.6-4.8	4.6-4.8	4.6-4.8	4.6-4.8
Hardness (Mohs)	7.5	7.5	7.5	7.5
Melting Point	2,200 °C	2,200 °C	2,200 °C	2,200 °C
Loss on Ignition	<0.9%	<0.9%	<0.9%	<0.9%
Solubility in Water	Non-soluble	Non-soluble	Non-soluble	Non-soluble
Flammability	Non-flammable	Non-flammable	Non-flammable	Non-flammable
Appearance	Brown sand	White powder	White powder	White powder

*Chilches Materials, S.A. has determined test method and provided analysis as noted herein. The levels referenced herein are only for general guidance and do not constitute a firm specification.



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Particle Size Distribution**

	Sand	Flours		
		200# IC	250# IC	325#
d50 (microns)	135 ± 50	21.00 ± 3.00	16.00 ± 3.00	11.00 ± 2.00
d97 (microns)	250 ± 50			
d98 (microns)		82.00 ± 3.00	61.00 ± 3.00	43.00 ± 2.00

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