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Type Y-CZ

Yttria-Calcium Zirconate Water-Based Coating

Type Y-CZ is based on the most thermodynamically stable oxides of Yttrium Oxide (Y_2O_3) and Calcium Zirconate ($CaZrO_3$), both with melting points over 2300 C. This combination yields 60 mol% Y_2O_3 and 40 mol% $CaZrO_3$ on heating over 1000 C. Most importantly, unlike other Yttrium Oxide based coatings, Type Y-CZ is usable in air atmospheres as well as inert/vacuum to temperatures in the 1000-2000 C range; and the coating bonds well to all substrates – ceramic, graphite, metal. Due to the high stability of the coating, Type Y-CZ is suitable for use with very reactive molten metals.



Key Attributes

- Superior stability with molten, highly reactive metals/alloys
- Good erosion resistance at high temperatures
- Low thermal and electrical conductivity
- Use temperature to 2000 C in all atmospheres
- Water-based, easy to use and cleanup

Ideal Use

- Reactive-molten metal processing and transport
- Barrier coating to prevent diffusion, reactions, and sticking of parts during heat treating

Use Notes

1. Resuspend if needed. Dilute sparingly with water if desired.
2. Clean surfaces to be painted of any oils dirt, scale, etc.
3. Apply a single layer by brush or spray, drying after each layer.
4. Allow to thoroughly dry before use.

Safety Information

- Consult SDS before use.
- Avoid breathing of spray/vapors.
- For Industrial Use only.

Specifications

Active Ingredient	Y_2O_3 - $CaZrO_3$
Max Use Temperature with All Atmospheres	>2000 C (> 3632 F)
Fired Composition	79 wt% Y_2O_3 , 21 wt% $CaZrO_3$
Liquid Carrier	Water
Binder Phase	CaO - ZrO_2
Brookfield Viscosity	3800@3/30
Specific Gravity	1.79
Color	White
Shelf Life (months)	>12
Coverage (ft ² /gal)	100 to 400
Coating pH	8-9
H F R Ratings	1-0-0
Substrate Use	All
Other:	Contains no Silicon Oxide and no Boron

Sizes and colors

Type Y-CZ is a white paint.

Standard size: 1 gallon wide-mouth Nalgene
 1 quart wide-mouth Nalgene

CAUTION: DO NOT CONTACT WET COATINGS WITH MOLTEN METAL.

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