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## YZ Binder

### Water-based, Neutral pH Binder Liquid For Creating Your Own Paint

YZ Binder/Thinner is the water-based binder liquid that is used for typical yttria or zirconia washcoatings. The term "washcoating" is indicative of a low hardness coating similar to a whitewash house paint. Coatings produced with this binder liquid will always have low hardness on drying and can be easily washed back off if re-wetted (i.e., have low water resistance). The binder also has a relatively low ability to suspend solids and generally produces medium to low viscosity coatings with most refractory powders. With a pH of 7, the binder is generally not very reactive to materials. Use ONLY in inert or vacuum atmospheres to 2000 C. Called a "Thinner" sometimes since it can be used to thin our Type Y paint to achieve any consistency desired. Contains NO yttrium oxide.

#### Key Attributes

- Water resistance is low
- Low suspendability of 'filler' powders
- Forms low hardness coatings
- Usable in vacuum or inert atmospheres, NOT in air
- Low level of outgassing ( $H_2O$ ,  $CO_x$ )--complete by 750 C
- Safe, water-based
- No cure needed

#### Ideal Uses

- Binder/Suspender

#### Possible Fillers

- Most materials are compatible with this pH-Neutral binder/suspension-agent
- Consider eutectics

#### Use Notes

1. Add refractory 'filler' (<10 microns preferred)
2. Start at 50wt.% powder. Mix by rolling/shaking.
3. If too thick, add water; if too thin, add powder.
4. Re-mix by rolling or shaking.

After making paint above, clean substrate, apply paint, dry (with no cure needed), and place into use.



#### Specifications

Active Ingredients	Cellulosic
Max Use Temperature	2000 C
Use Atmosphere	Vacuum/Inert
Fired Composition and Binder Phase	100% Glassy Carbon
Hardness	Low
Liquid Carrier	Water
Water Resistance	Low
Ability to Suspend Solids	Low
Brookfield Viscosity (cps)	200 @2/60
Specific Gravity	1.0
Shelf Life (months)	>12
Coating pH	7-8
H F R Ratings	0-0-0
Substrate Use	All
% Volatiles	97

#### Safety Information

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

#### Sizes and colors

YZ Binder is a relatively clear liquid  
Standard Size: 1 gallon Nalgene container.

#### CAUTION: DO NOT CONTACT WET COATINGS WITH MOLTEN METAL.

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