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# Zypcoat YAG

## Yttrium Aluminate Coating

Zypcoat YAG is a water-based Yttrium Aluminate (YAG,  $3Y_2O_3 \cdot 5Al_2O_3$ ) coating that has very high thermodynamic stability due to its high Yttrium Oxide content of 57 wt.% – and thus is non-reactive with many metals and alloys. Zypcoat YAG coating has very good chemical and erosion resistance, whether applied to metal or ceramic substrates. Forming 100% YAG after outgassing at 500-600 C, Zypcoat YAG has a very high upper use temperature (est. 1700 C). As a barrier layer to prevent reactions, Zypcoat YAG can be used to stop sticking with stacked metal plates during heat treating. This coating works well on ceramic and metal substrates.



### Key Attributes

- Non-reactive with most materials ... ceramics or metals, even in molten state
- Excellent chemical and erosion resistance at high temperatures
- Use temperature estimated to be above 1400 C in all atmospheres/conditions
- Water-based, easy to use and cleanup

### Ideal Use

- Molten reactive metal processing/transport
- Very-high-temperature processing
- Barrier coating to stop diffusion/reactions /interactions
- Braze stop-off

### Use Notes

1. Re-suspend if needed.
2. Use full strength, or dilute as desired with water or YAG Binder.
3. Clean surfaces to be painted of any oils, dirt, scale, etc.
4. Apply 1-3 layers by brush, dip, or spray like ordinary house paint, drying after each layer.
5. Allow to thoroughly dry before use.

### Safety Information

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

### Specifications

Active Ingredient	Yttrium Aluminate (YAG, $3Y_2O_3 \cdot 5Al_2O_3$ )
Max Use Temperature Est.	1700 C or >1400 C with most all conditions
Use Atmosphere	All
Fired Composition	100% YAG
Liquid Carrier	Water
Binder Phase	$3Y_2O_3 \cdot 5Al_2O_3$
Brookfield Viscosity (cps)	1060 @3/60
Specific Gravity	1.46
Color	White
Shelf Life (months)	>12
Coverage (ft <sup>2</sup> /gal)	100 to 400
Coating pH	3-4
H F R Ratings	1-0-0

### Sizes and colors

Zypcoat YAG is a white colored paint.

Standard Size: 1 gallon, 1 quart wide mouth Nalgene container

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

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