YAG Binder has a good ability to suspend solids. It yields very refractory $3Y_2O_3*5Al_2O_3$ as the phase that bonds the ‘filler’ solids added to the binder. The melting point is 1940 °C. With a pH-Acidic (3-4) range, this binder can be used with powder solids that are stable in acidic medium. YAG Binder has a long shelf life of over 12 months and is usable in all atmospheres to 1900 °C.

**Key Attributes**
- Forms very stable Yttrium Aluminate bond
- Good Suspendability of ‘filler’ powders
- Forms low-to-medium hardness coatings
- Good in all atmospheres, including air
- Minimal outgassing -- complete by 500 °C
- Safe, water-based
- No cure needed

**Ideal Uses**
- Binder/Suspender
- Infiltrant
- Sealer
- Rigidizer

**Possible Fillers**
- $Al_2O_3$, $ZrO_2$, $CeO_2$, $SiC$, $Si_3N_4$, Y-SiAlON, BN, TiN, & many more
- 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**: >99% $Y_2O_3$, $Al_2O_3$
- **Max Use Temperature**: 1900 °C
- **Use Atmosphere**: All
- **Fired Composition**: $3Y_2O_3*5Al_2O_3$
- **Binder Phase**: Yttrium Aluminate
- **Hardness**: Low-Medium
- **Liquid Carrier**: Water
- **Water Resistance (after drying only)**: Low
- **Ability to Suspend Solids**: High
- **Brookfield Viscosity (cps)**: 500 @3/60
- **Specific Gravity**: 1.09
- **Shelf Life (months)**: >12
- **Coating pH**: 3-4
- **H F R Ratings**: 1-0-0
- **Substrate Use**: All
- **% Volatiles**: 87

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

**Sizes and colors**
- YAG Binder is white, milky liquid.
- Standard Size: 1 gallon and 1 quart Nalgene containers.

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

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