

# SpaceRite® S-3

## Aluminum Hydroxide (ATH)

### DESCRIPTION

SpaceRite® S-3 is a special purpose white hydrated alumina. White hydrated alumina is aluminum trihydroxide,  $\text{Al}(\text{OH})_3$ , that is produced through special processing of aluminous feedstock and stringent process control systems. The result is hydrated alumina unequalled in purity and whiteness. Although hydrated alumina is a dry powder, when heated above approximately 220°C it decomposes in approximately 35% water and 65% alumina by weight.

Hydrates are nonabrasive, low-density materials that have been used extensively in the coatings industry and other applications where color and the absence of impurities are critical.

The regulatory section of the MSDS states that SpaceRite® S-3 hydrated alumina “may be used in accordance with the following 21 CFR Sections: 175.300, 176.170, 176.210, 177.1200, 177.2600, 178.3297, 182.90, 73.1010.”

SpaceRite S-3 is a fine crystalline, aluminum trihydroxide with uniform particles averaging about one micron in diameter. It is an organic-free pure white powder produced by a proprietary precipitation process that closely controls particle-size distributions. SpaceRite S-3 can also replace other extenders providing enhanced performance and benefits in coatings and adhesives.

### PRODUCT FEATURES

- Narrow particle size distribution (1.0 micron median)
- Low oil absorption
- High brightness
- Clean white color
- Low specific gravity
- Non-abrasive
- Excellent dispersion characteristics
- Chemically inert
- UV transparent

### APPLICATIONS

#### Architectural Coatings

- $\text{TiO}_2$  replacement
- Will not reduce gloss
- Excellent gloss retention
- Will not impact color
- Easily dispersed (7+ Hegman)
- Weather resistant
- Inert

#### High solids/low VOC coatings

- Highly inert
- Low oil absorption and high loading capability
- Used in wide range of colors with no color impact
- Will not reduce gloss
- Excellent gloss retention
- Reduces yellowing in alkyds
- Easily dispersed (7+ Hegman)

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### APPLICATIONS (continued)

#### UV coatings

- RMC reduction (formulation extender)
- Improves photoinitiator efficiency
- Will not adversely affect speed or depth of cure (UV transparent)
- Easily dispersed

#### Organic colored pigments

- As pigment extender, invisible up to 5%
- Inert
- Excellent weatherability
- Low oil absorption
- Will not impact hue
- Easily dispersed (7+ Hegman)

Chemical Composition (%)		
	Typical	Test Method
Na <sub>2</sub> O (soluble)	0.04 max	Flame Emissions Photometry
Al(OH) <sub>3</sub>	99.5	Difference
Moisture	0.4 max	Microwave
Physical Properties		
Loose bulk density (g/cm <sup>3</sup> )	0.3	Modified ASTM B212-89
Packed bulk density (g/cm <sup>3</sup> )	0.5	Modified ASTM B527-85
Brightness (% Z)	99	Z value of the XYZ Tristimulus divided by 1.18103
Refractive index	1.57	
Mohs hardness	3	
Density (g/cm <sup>3</sup> )	2.42	
Pounds per gallon	20.2	
Gallons per pound	0.0495	
Oil absorption (g/100g)	31	
pH (not a buffer)	9.8	ASTM 1208
Color	White	
Particle Size		
d50 (μ)	1	Sedigraph 5100