

# ALUMINIUM TRIHYDRATE



## AL FR™

Flame Retardant & Smoke Suppressant

www.20microns.com

AL FR™ is produced by exceptional engineered production process. It works on the basis of heat sinking and endothermic dehydration characteristics that enable alumina trihydrate to retard the burning of polymers. AL FR™ release about 35% of its weight in the form of steam at approximately 220°C (428°F). This water vapor quenches the surface of surrounding materials while restricting the access of oxygen to the burning polymer and combustible and potentially toxic off-gases are also diluted by this water vapor. AL FR™ also improves the Arc-track resistance in electric composites by absorbing generated heat, due to the endothermic dehydration water vapor slows the surface degradation of the polymer and the resultant formation of the carbonized film or track.

The quantity of AL FR™ added to the organic matrix depends on the required flame retardance, the properties of the end products and the cost of the mixtures. AL FR™ is better for environmental compliance as it contain no halogens or heavy metal and replaces more expensive flame retardants based on antimony metal or chlorinated and brominated (halogenated) compounds.

## TYPICAL PROPERTIES

PROPERTIES	UNITS	AR FR 2™	AR FR 3™	AR FR 5™	AR FR 9™
Brightness	%	96 ± 2	92 ± 2	92 ± 2	92 ± 2
Bulk Density (Loose)	gm / ltr	300 ± 30	420 ± 30	465 ± 30	620 ± 30
Oil Absorption	gm / 100 gm	30 ± 3	31 ± 3	29 ± 3	28 ± 3
Moisture Content (Ex-works)	%	Max. 0.4	Max. 0.4	Max. 0.4	Max. 0.4
Residue on 325#	ppm	Max. 100	Max. 100	Max. 100	Max. 100
D(50) on Laser Diffraction	μ	1.8 ± 0.2	3 ± 0.2	5 ± 0.2	9 ± 0.2
ATH Content	%	97 ± 3	97 ± 3	97 ± 3	97 ± 3

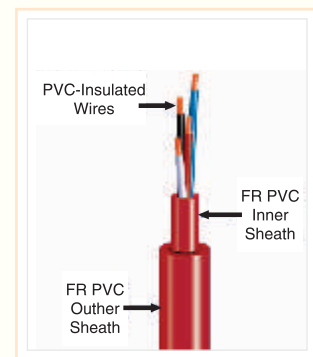
## KEY BENEFITS

### Flame Retardance

- Alternative to halogens
- Heat removal and smoke suppression through water vapor generation
- Char Formation

### Processing

- Better wet out, higher loading levels
- Improved performance through better reinforcement
- Lower resin demand



## APPLICATIONS

- Cable Compounding
- PVC Sheet
- FRP / SMC compounding
- Rubber sheet & compounding

INNOVATIVE LEADERSHIP

**20 MICRONS**  
L I M I T E D

APPLICATION EXPERTISE

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