

Polymer Add (Thailand) Co.,Ltd.

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TECHNICAL DATA SHEET

ALUMINIUM TRIHYDRATE (ATH), MICRONISED

PRODUCT CLASSIFICATION

Item	Description
Chemical name	Aluminium hydroxide
Synonyms	Aluminium trihydrate (ATH), alumina trihydrate, hydrated alumina
CAS No.	21645-51-2
EC No.	244-492-7
HS Code	2818.30.00
Molecular formula	$\text{Al}(\text{OH})_3$; also expressed as $\text{Al}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$
Molecular weight	78.00 g/mol
Product description	Fine white ATH powder for use as a flame retardant and smoke suppressant filler in suitable polymer formulations

PHYSICAL & CHEMICAL PROPERTIES

The **specification limits** below come from the supplied ATH certificate of analysis. Batch results have been excluded because this is a technical data sheet.

Property	Specification	Standard test method
Appearance	White powder	Visual inspection
Aluminium hydroxide, $\text{Al}(\text{OH})_3$	$\geq 99.5\%$	Chemical assay by complexometric titration, or validated equivalent method
Moisture	$\leq 0.5\%$	ISO 787-2: volatile matter at 105°C
Silicon dioxide, SiO_2	$\leq 0.05\%$	XRF analysis using calibrated standards
Iron oxide, Fe_2O_3	$\leq 0.02\%$	XRF analysis using calibrated standards
Sodium oxide, Na_2O	$\leq 0.35\%$	XRF analysis using calibrated standards
Median particle size, D50	3–5 μm	Laser diffraction, ISO 13320
Oil absorption	30–36*	ISO 787-5, linseed oil method
Whiteness	$\geq 90^*$	Reflectance measurement using a calibrated colorimeter; report the instrument's whiteness index and measurement conditions

USES / APPLICATIONS

Micronised, solid-particle applications

Industry	Commercial application and purpose of the fine particle size
EVA and polyolefin cable compounds	Flame retardant and smoke suppressant filler in suitable wire insulation and cable sheathing formulations. Fine ATH supports distribution throughout the compound and a smoother extruded surface.
Polymer compounds and masterbatches	Fine flame retardant filler where consistent distribution through a polymer matrix and control of visible coarse particles are required. Suitability depends on the resin and processing temperature.

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Adhesives, caulks and sealants	Flame retardant mineral filler in formulations requiring fine-particle dispersion and a controlled applied surface. The effect on viscosity and adhesion must be checked in the finished formulation.
Polymer coatings and paints	Fine ATH filler for coatings designed to provide flame retardancy and smoke suppression while maintaining the required coating texture.
Thermoset resins and composites	Flame retardant filler where particle distribution and the finish of the moulded or coated surface are important.

FORMULATION AND PROCESSING NOTES

- ATH is a particulate filler. It must be adequately dispersed to assess its effect on viscosity, processing and finished-product properties.
- Confirm that the formulation's processing temperature is suitable for ATH. Heating sufficient to decompose ATH releases water, which can affect a polymer melt or coating during manufacture.
- Flame rating and smoke performance depend on the complete formulation, ATH loading, article thickness and test method. No fire classification is claimed for this powder alone.
- Surface treatment is not specified on the supplied COA. Do not describe this grade as silane-treated, stearate-treated or otherwise modified without confirmation.

STORAGE AND HANDLING

Store in closed packaging in a dry area. Protect from moisture and minimise dust generation during handling. Refer to the current Safety Data Sheet for detailed handling information.

DISCLAIMER

This product is intended for evaluation in industrial polymer, coating, adhesive and related formulations. The specification limits above are taken from the supplied manufacturer's COA. Application performance, regulatory suitability and any property without a stated specification must be confirmed separately. Values and statements in this sheet are not a guarantee of performance in a finished formulation.

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