Basic Aluminium Chloride (BAC)

CAS No. 1327-41-9 | HS Code 2827.32

Basic aluminium chloride (BAC) is a pre-hydrolysed aluminium coagulant with a high basicity of 70–90% — a higher degree of polymerisation than conventional PAC. That structure leaves very little free acid to release in water, so dosing shifts pH only marginally and consumes far less alkalinity. Typical doses are 20–120 ppm, set by jar test.

The practical difference from PAC is where the two diverge: PAC offers a wider working range and lower cost per unit of Al_2O_3, while BAC suits streams that cannot tolerate a pH drop — low-alkalinity surface water, low-temperature and low-turbidity water where floc formation is slow, and oil-bearing effluent from machining, cold rolling, knitting and food processing, where its cationic polymer fraction helps break oil-in-water emulsions and lift colour. Because high-basicity liquids are viscous and prone to gelling at high concentration, liquid BAC is normally supplied at ≥ 10% Al_2O_3 and powder at ≥ 28%.

Technical Specifications

Parameter	Unit	Value
Basicity	%	≥ 70 (70–90 typical)
Al_2O_3 content (powder)	%	≥ 28
Al_2O_3 content (liquid)	%	≥ 10
pH (1% aqueous solution)	—	3.5–5.0
Water insolubles	%	≤ 0.3
Appearance	—	Colourless to pale-yellow liquid; white powder

Applications

- Oily wastewater from machining, cold rolling and metal drawing — demulsification and oil removal with DAF
- Textile dyeing and printing effluent where colour must be lifted without lowering pH
- Low-temperature, low-turbidity surface water where alum and standard PAC flocculate slowly
- Plants with tight discharge pH limits or insufficient alkalinity for conventional coagulant doses

Packaging & Shipping

PP woven bag with PE inner liner (powder) — 25 kg | HDPE drum (liquid) — 200 L | IBC tote (liquid) — 1000 L

Storage & Shelf Life

Powder: store dry, 12 months in sealed bags. Liquid: store between 5–35 °C, keep closed and out of direct sunlight; shelf life 6 months, and stir before use if the product has stood. Do not allow liquid to freeze.

Transport Classification

BAC is not classified as a dangerous good under IMDG/IATA and ships as general cargo. Liquid grades are mildly acidic — check drum and IBC closures before shipment and protect from freezing in transit.

Safety Notes

Mildly acidic product: avoid eye and skin contact, and wear gloves and goggles when handling liquid or dissolving powder. Do not mix with strong alkalis. Spills are slippery — flush with water. MSDS available on request.

Typical values for reference only. Final specifications are confirmed per batch Certificate of Analysis (COA) issued with each shipment. This document does not replace the MSDS — request it via the inquiry form.

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