

The Aramide Reinforcers are no Match for Hosokawa Rietz Disintegrators

Derived from aromatic polyamide fibre, meta and para-aramide fibres are widely used in friction materials where their excellent strength, heat resistance, flame resistance, chemical stability and radiation resistance properties add valuable features and benefits to the final manufactured product. However the very tough, fibrous and corrosive nature of these materials can pose production problems for volume processors.

Hosokawa Micron Ltd has now developed a range of equipment and continuous system solutions that tackle the size reduction, dispersion and mixing of these materials easily and efficiently for processors with Aramide fibre applications in:

- Aviation (fuselage parts and similar high impact resistance / lightweight parts and mouldings)
- Defence (anti-ballistic clothing)
- Transportation (marine hull reinforcement, high speed train structures)
- Power generation (wind turbines, wave turbines)
- Petrochemical Industry (Off-shore and on-shore, gaskets, specialist parts)
- Automotive (high performance tyre reinforcement, brake linings, clutch transmission parts)
- Communications (Electrical and optical cable sheathing, satellite dish components)
- Sports and Leisure (golf clubs, tennis rackets, motorsport helmets)

Based on the Hosokawa Rietz Angle Disintegrator and Hosokawa Rietz Vertical Disintegrator the systems developed by Hosokawa Micron Ltd in conjunction customers handle feed material, which is typically in 12 – 15mm flake form and is suspended within an aqueous chemical carrier, typically in the range 5 – 10% w/w solids.

Because of the corrosive nature of the chemical and the erosive, fibrous toughness of the solids, Duplex construction materials are predominantly used for all wet parts. Whilst the internal serrated tooth reduction screens, where the highest erosion and corrosion resistance is required are manufactured using Hastelloy.

The Hosokawa Rietz Angle Disintegrator offers intense grinding and processing of wet and dry products and can automatically separate and reject non friable material through the secondary discharge. Material enters at the top of the rotor and is subjected to impact and attritional forces from the high speed rotating hammers to deliver a uniform particle size reduction of solids and continuous flow of discharge product for further processing. The ground product is typically <2mm:nil with the maximum percentage in the range 0.25mm – 1.0mm and a maximum of 8% of fines below 0.15mm.

With only minimum machine vibration and low temperature rise during operation processors benefit from the Disintegrator's low energy consumption.

Reference installations deliver consistent throughput values of:

Hosokawa Rietz Angle Disintegrator RA18 c/w 75kw drive
approx 250kg/hr

Hosokawa Rietz Vertical Disintegrator RD18 c/w 132kw drive
approx 450kg/hr

Due to the exceptional toughness of the material, there is a necessity to ensure a smooth, uniform delivery flow to the size reduction equipment; this is achieved using a specially developed PTFE lined Duplex steel pre-mixing vessel that relies on the Vortex-principle to ensure non-modulating feeding to the downstream Disintegrator.



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