

AST Technology

Axchem® Group is a market leader in the supply of polyacrylamides into the Italian, through Axchem® Italia, and global paper industry. This experience and knowledge have led to the development of a patented system aimed at reducing the dependency on fresh water for both polymers make-down and application.

by: Axchem Italia Srl



◀ The AST installed at Sofidel, Via di Leccio.

AST is a patented system for direct preparation in total absence of water

AST (Axchem Stirrer Technology) is an online system that allows it to activate the polyelectrolyte using a fraction of the fluid to be treated. The polymer is injected as it is in a concentric multi-chamber where, thanks to a very strong agitation, it is reversed and compressed in the fluid (mud or pulp). The turbine can be modulated thanks to the adjustment of the rotation of the special propeller: the adjustment can be made according

to parameters such as the chemical-physical nature of the fluid to be treated, the hydraulic flow rate, the type of flocculant.

The advantages

No consumption of fresh water: the preparation of polyelectrolytes traditionally involves a considerable consumption of fresh water during dilution. With an AST this fresh water consumption is negated.

No loss of cationicity: for cationic polyelectrolytes, the alkalinity of the preparation



“ Offering very **competitive economical conditions** and assuring the most reliable product sources ”



water will cause a progressive loss of this cationicity and a consequent decay in its effectiveness.

No bacterial contamination: Polyelectrolytes are culture media for bacteria. In-line inversion of the polymer does not allow bacterial growth.

Better performance of polyelectrolyte in extreme conditions: very high conductivity of closed circuits does not give the polymer an optimal yield. The use of AST drastically reduces the contact time between polymer in solution and fluid to be treated, improving the performance of the polymer itself.

Compactness: its dimensions are small and it can be easily installed even in very narrow places.

Flocculation setting: Flocculation can be followed and modified in real time. The lack of polymer storage makes it possible to verify in real time the effects of a variation.

Reduction of energy costs: The simplicity of the system and the ancillary equipment allow the application to be energy efficient.

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Axchem and Sofidel together for a greener future

The Sofidel Group, one of the world leaders in the production of hygienic and domestic tissue, known in particular for the *Regina* brand, strives to reduce its environmental impact. Reflected in their philosophy of “less is more” the Sofidel Group has already installed AST’s in all of their Tuscan plants. The key advantages of these AST applications are summarized below (results obtained with AST):

- a. Increase in dry sludge extraction by 12% on average.
- b. Savings of over 5,000 m³/ year of fresh water for the 4 plants.
- c. Savings 5% on the dosage of chemicals.
- d. Reduction of the energy cost, compared to a traditional polyelectrolyte preparation system, by more than 50%.

Axchem and Sofidel are currently considering the possibility of applying AST at the Group’s other plants. Just over a year after the first Italian patent, Axchem Group has installed over 40 AST in the world, contributing to a reduction in the use of clean water of over 600,000 m³ per year. ●