

Air as a challenge to efficiency in paper and board machines

How air enters the process

Air enters the production process of paper and board machines in several ways. During the preparation and mixing of the paper pulp, air is introduced into the process, leading to the formation of air bubbles and foam.

With the closure of water loops, the air is easily entrained, and foam forms in the process. Many production lines exceed their originally designed capacity, resulting in inefficient air removal. Additionally, the variety of products being processed may have changed significantly from the original plan.

Pumps, mixers, and added chemicals can also introduce air, especially if they are not handled or dosed correctly.

During machine shutdowns and startups, air can enter the system. This can result in air being released into the process later, causing, among other things, foaming. Pressure and level fluctuations in the process, as well as deficiencies in air removal systems, can also lead to air remaining in the process, manifesting as foam formation.



Foaming is not a single chemical process; it can occur as a result of several different reactions.

How air affects the process

Air causes foam formation in paper and board machines. Foam can form at many stages of the process, such as during pulp preparation, on the paper machine, and in wastewater treatment. Foam formation is influenced by many factors, including the chemicals used, process temperature, flow rate, and pulp solids content.

Foam formation disrupts the uniformity of the paper pulp and can lead to production disturbances, quality issues, and defects in the final product. Controlling foam as early as possible in the production process is often necessary to ensure smooth operations.

Choosing the right antifoam agent and its benefits

The effectiveness of an antifoam agent depends on its ability to quickly break down foam and prevent its reformation over the long term. Additionally, the agent should not negatively affect the process or the quality of the final product.
When choosing a product, its suitability for various paper and board machines and for processes that involve a wide range of chemicals and additives is important. If the selected product is also biodegradable and environmentally safe, it reduces challenges in wastewater treatment and lowers environmental impact.

BIM DF product line

The BIM DF product line is firmly rooted in the well-established tradition of defoamers in the pulp and paper industry. Currently, it is also subject to extensive development efforts aimed at improving efficiency and sustainability as well as long-term stability.

The product combines effective air removal and foam suppression, developed specifically for the needs of the paper and board industry. Examples of applications include newsprint, packaging board, tissue paper, and other speciality papers.

The right choice of antifoam agent and its appropriate use can significantly affect process efficiency, product quality, and environmental impact, potentially even reducing production costs as a result.

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