amafilter®

FILTRATION SOLUTIONS FOR SUGAR APPLICATIONS

Making the world safer, healthier and more productive®

amafilter®
Filtration Group®

Sugar Beet and Sugar Cane Production

Sugar is an indispensable part of our daily lives, weaving its way into countless culinary delights, from morning coffee to decadent desserts. Its essential role extends beyond mere sweetness; sugar is a key ingredient in baking, preserving, and even fermentation processes, making it a staple in households and industries alike. However, the path from sugar beet or sugar cane to the refined product we consume is complex and demands meticulous attention to quality and filtration. High-quality sugar production is crucial to ensure safety and purity, as impurities can affect flavour, colour, and shelf life.

Why filtration is important in this application?

- Without proper filtration, sugar may contain unwanted particles that affect its taste while also reducing its shelf life.
- An efficient filtration process is essential for producing high-quality sugar with the desired appearance and colour.
- Effectively removing impurities ensures the end product is not only pure but also meets the highest standards of quality and safety.

Filtration

Why is the Amafilter® Cricketfilter® automated system ideal for sugar beet and sugar cane applications?

The Amafilter® Cricketfilter® automated system is ideal for sugar applications, offering unparalleled efficiency and reliability. It has been extensively used in sugar applications as it delivers optimal sugar filtration, which is crucial for maintaining the high purity levels required in sugar processing. The Cricketfilter® minimizes manual interventions, reducing labour costs whilst ensuring a consistent and high-quality product is produced to the highest industry standards.

Benefits of the Cricketfilter® automated filtration system:

Higher Flux
- 40% greater filtration area
- 40% more cake holding capacity than traditional shaped element

Maximises Installation Footprint
- Up to 20% reduction in footprint

High Quality and Realibility
- The Cricketfilter® stainless steel elements lifespan can extend up to 30 years before being replaced

Excels in Polishing Applications
- Ideal for solid content applications in comparison to existing pressure leaf filter systems

Reduced Operating Costs
- The Cricketfilter® filter cloths can have up to 2 years spare parts replacement cycles

Easy to Clean, Low Maintenance Interventions
- The Cricketfilter® uses air or gas pulses to efficiently clean the elements section by section

Optimal Drainability
- The Cricketfilter® elements are engineeringly designed to provide minimum fluid retention during regeneration ensuringoptimal cleansiness

The Cricketfilter® in sugar filtration

Amafilter®
Cricketfilter®

The Cricketfilter® is a well-established automated system developed to combine the advantages of traditional pressure filter leaf systems and cartridge/candle filter systems, whilst avoiding their drawbacks.

This reliable technology effectively separates fine solids from liquids and is used in sugar beet and sugar cane industries across the globe.

Given its ongoing popularity, we are committed to enhancing the Cricketfilter® product range. Through focused research and investment, we have developed new options.

The Cricketfilter® 2nd Generation has added features that make the system modular, allowing customers to tailor the system to their specific requirements.

For a complete list of the new options, download our Cricketfilter® 2nd Generation brochure from our website: www.amafiltration.com

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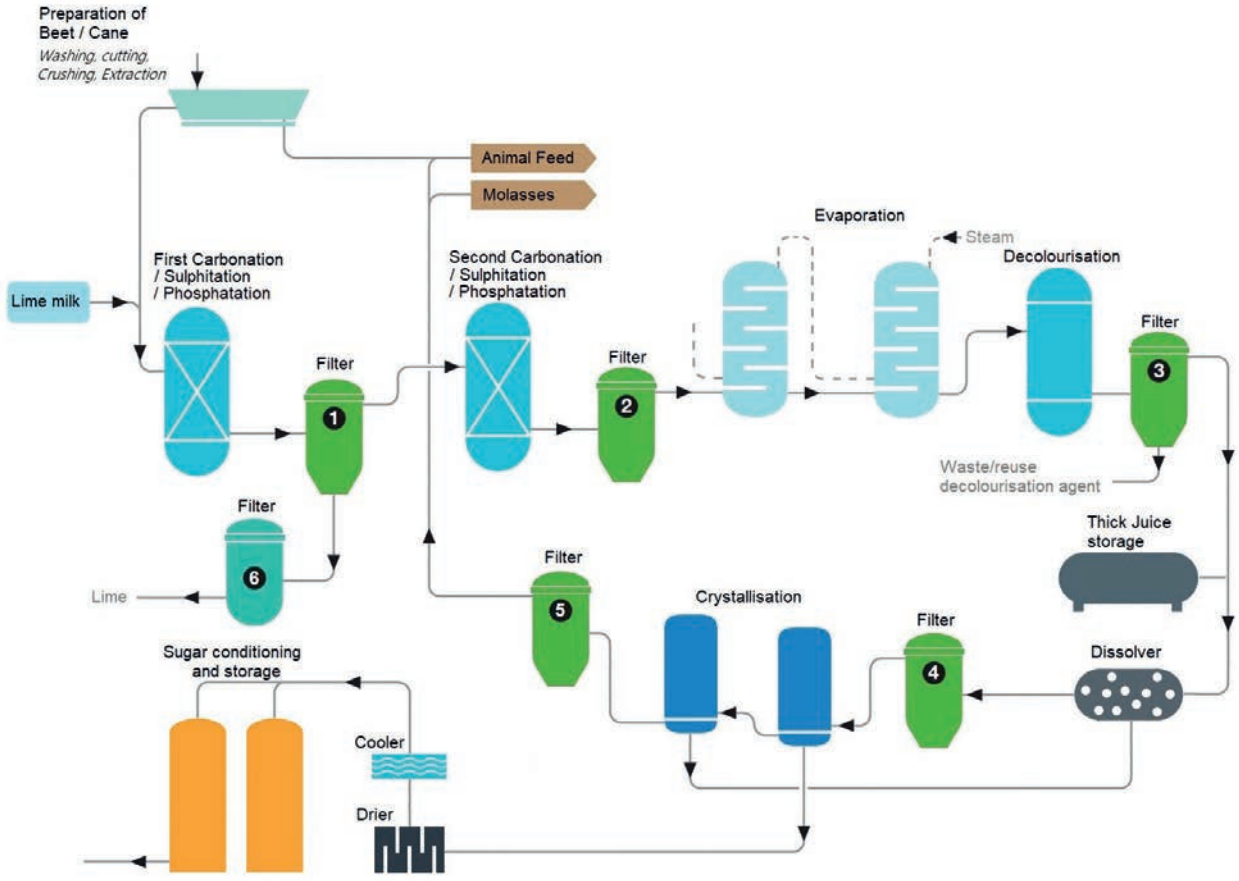
Sugar Filtration Process

Flow Diagram



1. Cricketfilter®
2. Cricketfilter®
3. Cricketfilter®
4. Cricketfilter®
5. Vertical or horizontal pressure leaf filter
6. Cricketfilter®

Features and Benefits

FILTRATION SOLUTION	FILTRATION PURPOSE	FILTRATION BENEFIT
Amafilter® Cricketfilter® automated system	Main first filtration of precipitated calcium carbonate impurities from first carbonatated sugar liquors.	**Short regeneration time:** There's no need for filling or re-filling during cycles. **High filtrate quality:** Achieving levels below 10 PPM ensures superior results. **Efficient carbonation:** The second carbonation stage is more efficient. **Concentrated cake slurry:** With higher concentration, less liquid is recycled to liming, improving overall efficiency"
Amafilter® Cricketfilter® automated system	Main second filtration of remaining precipitated calcium carbonate impurities from second carbonatated sugar liquors.	**Efficient Regeneration:** Short regeneration times with no need for filling or re-filling during cycles. **High-Quality Output:** Superior sugar quality, with impurities as low as 1-5 ppm. **Reduced Strain:** Minimize the load on thick juice strainers or filters, enhancing overall system efficiency. **Energy Savings:** Benefit from less evaporator scaling, which leads to lower energy consumption and reduced use of anti-scaling additives.
Amafilter® Cricketfilter® automated system	Main filtration for removing of precipitates and other solid residues that need to be removed to ensure a clear and high-quality product. When decolourisation is essential, the decolourisation agent can here be removed for reuse or waste treatment.	**Higher Sugar Concentration:** Achieve up to 74% concentration of sugar. **Pre-Coating During Filtration:** Utilize pre-coating to enhance the filtration process. **Reduced Filter Aid Usage:** Use less filter aid during thick juice filtration. **Effective Desweeting:** Desweeting can be efficiently performed within the filter. **Increased Sugar Recovery:** Recover more sugar from the filter cake. **Clearer Filtrate:** Obtain a better quality and clearer filtrate. **Fewer Beverage Flocs:** Reduce flocs caused by acids in beverages. **Lower Ash Content:** Achieve a lower ash content in the final sugar product. **Efficient Cake Discharge:** Discharge the filter cake as a slurry. **Enhanced Decolourisation Agent Recovery**: Recover more decolourisation agents effectively.
Amafilter® Cricketfilter® automated system	Main filtration for removing non-sugars which can affect the quality and purity.	Filtering standard sugar liquor before crystallization is essential for removing impurities, preventing crystal defects, optimizing crystallization efficiency, and protecting equipment. This crucial step ensures the production of high-quality sugar crystals
Amafilter® Versis® Vertical Pressure Leaf Filter System or the Horizontal Pressure Leaf Filter System	Main/Polishing filtration is essential for removing any crystal fragments that remain in the molasses after crystallization. This step ensures that all left-over particles are filtered out, resulting in a smoother and higher quality final product.	Filtering molasses after crystallization is crucial to remove remaining impurities, improve product quality, prevent down-stream processing issues, enhance fermentation efficiency, and improve marketability. This step ensures that the molasses is suitable for its intended applications, whether as a food ingredient, fermentation substrate, or industrial product.
Amafilter® Cricketfilter® automated system	Main filtration to recover lime for reuse in the carbonation process or to produce high quality lime for agricultural and industrial applications.	Filtering lime mud after removing it from liquid sugar juice is essential for recovering more sugar, managing waste efficiently, and improving the quality of lime mud for reuse. Effective filtration methods help sugar refineries optimize processes, reduce environmental impact, and achieve better economic results. Additionally, dry or semi-dry lime mud is easier to handle, transport, and store than slurry-like mud.

FILTER	PURPOSE	BENEFIT
Top cloth	The filter cloth effectively removes solid impurities, thereby enhancing the clarity and purity of the sugar solution. This process ensures the final product maintains consistent quality.	The high quality of the filter cloths means that they generally last the entire sugar campaign and have an average lifespan of 6 to 12 months. This longevity significantly reduces maintenance interventions, downtime, and overall costs.
Drain cloth	The drain cloth plays a crucial role by providing support and enhancing liquid flow. Working together with the filter cloth, it ensures a more efficient filtration process, resulting in a higher quality and purity of the filtered sugar solution.	The design and quality of the drain cloths maximize flux capacity, protect the filter cloth, prevent clogging, enhance filtrate collection, and maintain the integrity of the filter cake.

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