

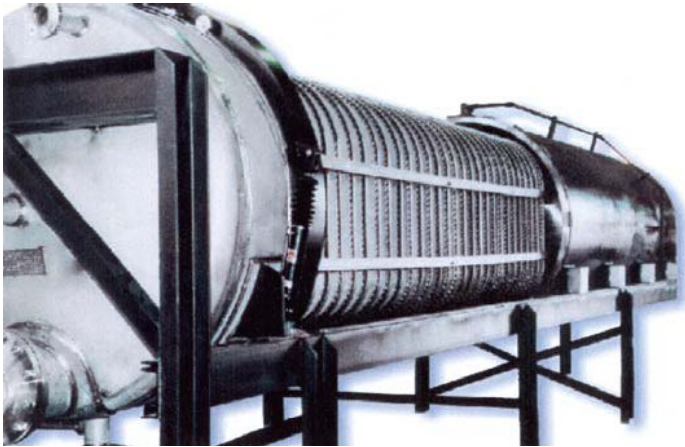


Durco Filters by Ascension Industries

Molten Sulfur Filtration

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Reduce burner cleaning from once to every two hours to 3 months or greater!

Stay on-line for up to 3 years!

Eliminate the need for SO₂ gas filters!

Expertise

Ascension Industries knows more about molten sulfur filtration than any other filtration manufacturer. We have improved process performance and eliminated costly maintenance for many sulfuric acid producers. Technologically advanced designs based on over 60 years of experience have made Ascension Industries the leader in molten sulfur filtration.

Application

Molten sulfur is commonly used to produce sulfuric acid (H₂SO₄). Sulfuric acid is typically used in the manufacture of fertilizer or in acid leach mining. The process of converting elemental sulfur to sulfuric acid begins with the burning of the sulfur to form SO₂ gas. The SO₂ is recovered and converted by catalyst step-wise from SO₂ to H₂SO₄.

Challenge

During storage and handling, sulfur becomes contaminated with solids such as dirt and ash. This contamination quickly plugs sulfur burners, SO₂ gas filters and catalyst beds. The burners need to be "rodded" regularly and long shutdowns are needed to clean the catalyst beds.

Solution

The Ascension Industries Molten Sulfur Filter! Our specially designed pressure leaf filters greatly reduce the maintenance costs in molten sulfur processing: Burner cleaning is reduced. Shutdowns are minimized and SO₂ gas filters can be eliminated. Ascension Industries filters incorporate exclusive features such as a full steam jacket, proprietary filter leaves and devices for eliminating build-up of hardened sulfur.

Technical Data

Application	Removal of dirt, ash and other solid contaminants from either light or dark molten sulfur
Equipment	Custom engineered horizontal tank, vertical leaf pressure leaf filter with dry cake discharge and steam jacket
Materials of Construction	Flange quality steel or T-304 stainless steel
Blowdown	CO ₂ or steam

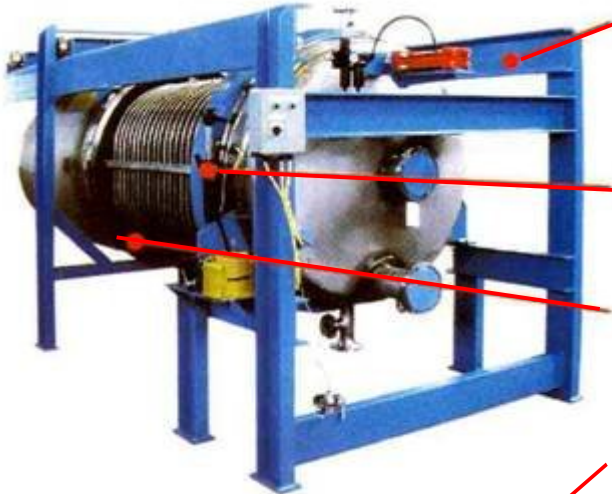
Filtration Data

Suspended Solids	Dirt and ash
Attainable Flow Rate (Light Sulfur)	1 ton/ft ² /day
Attainable Flow Rate (Dark Sulfur)	1/2 ton/ft ² /day
Cycle Length (typical)	1 week (light sulfur) - 12 hours (dark sulfur)
Precoat	20lb Diatomaceous Earth/100ft ² + 10lb Lime/100ft ²

Ascension Industries Molten Sulfur Filters

Exclusive Features and Benefits

Ascension Industries' molten sulfur filters incorporate many proprietary design features



Overhead Frame (Optional) - Ascension Industries' unique overhead frame eliminates sulfur deposits on the shell retraction rails. Also protects the shell retraction mechanism and provides usable area under the rear section while on-stream.

Quick Open Closure (QOC) - Fast access to the internals during cake discharge is important. Ascension Industries' QOC makes quick access easy. An integral mechanical interlock will not allow the filter to open under pressure.

Teflon Scraper Plate - When the vessel is opened this proprietary device removes residual molten sulfur from the interior of the shell, eliminating buildup of hardened sulfur.

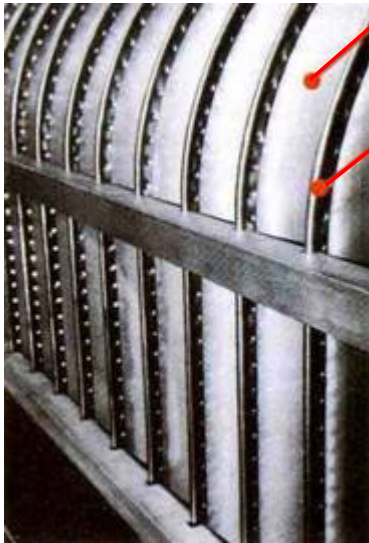
Optimum Leaf Spacing - Leaf spacing is critical. Ascension Industries' proprietary leaf design allows large cakes to be built, permits easy cleaning and prevents damage to leaf nest by discouraging bridging.

Proprietary Leaf Construction - Ascension Industries' exclusive welded leaf construction provides higher throughput, greater strength than competitors' designs. The unique design insures cake break up and prevents build up on the filtrate manifold.

Full Steam Jacket - Specifically designed for molten sulfur filters, the steam jacket maintains process temperature throughout the vessel - even extending to the nozzle area to prevent cooling. The steam jacket also incorporates pressure relief valves on both the head and shell sections to allow safe operation at maximum steam pressure.

High-Speed Shell Retraction - A powerful stainless steel reversing chain drive opens the shell quickly. Quick opening is vital to prevent cake cooling during discharge.

Cake Deflectors - Located at both the front and rear of the leaf nest, these guides direct discharging cake into the cake container, preventing build-up inside the shell.



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