

Maximizing Wine Yield - Lees Filtration

Application:	Wine Lees
Application Detail:	Recovery of High Quality Wine and Juice From Lees
Graver Product:	Graver Technologies Scepter

Discussion:

Lees, the sediment at the bottom of wine and juice tanks can represent a significant portion of the total production volume of a winery. This residual wine or juice is mixed with a high concentration of the suspended solids, which can range up to 20 to 30% by volume. Recovery of this potentially high value product represents one of the most challenging filtration applications faced by the winery.

Filtering lees allows wineries to recover this additional product, allowing for increased production and a reduction of waste. Commonly, Diatomaceous Earth (DE) filtration systems such as rotary vacuum drum filters (RVDF) and filter presses are used for filtering lees and while they can be effective for removing high solids, the process allows for oxygen to be introduced which may negatively impact quality. These DE based technologies may utilize large volumes of filter aid, increasing waste, disposal, labor, and losses.

In smaller wineries, the volume of lees from a single batch may be too small for processing with these DE based systems. In this situation, the recovery of the wine from the lees will be delayed until a suitable volume is collected. This in turn leads to a reduction in wine quality and thus the opportunity to recover high quality wine may not be achieved.

A Better Way

Common crossflow filter (TFF) technologies utilize polymeric membranes such as polypropylene, polysulfone, PVDF and provide very small pathways for fluid travel. These devices are not suitable for higher solid or higher viscosity applications such as lees filtration. A large bore tubular membrane composed of high strength inorganic material is the better choice to allow for high recovery. An all-stainless steel module allows for aggressive cleaning at elevated temperatures that would otherwise damage or destroy conventional polymeric membranes. In these extremely challenging clarification applications, a more robust technology such as the SCEPTER® crossflow microfiltration and ultrafiltration offers an advantage. These rugged tubular stainless-steel membranes have a titanium dioxide (TiO₂) membrane



that is permanently sintered to the inside of the 316L stainless support tube. This creates a smooth, foulant-resistant membrane that permits the processing of dirty or hostile fluids over a broad range of chemical conditions, pressures and temperatures, often where no other membrane device can be used.

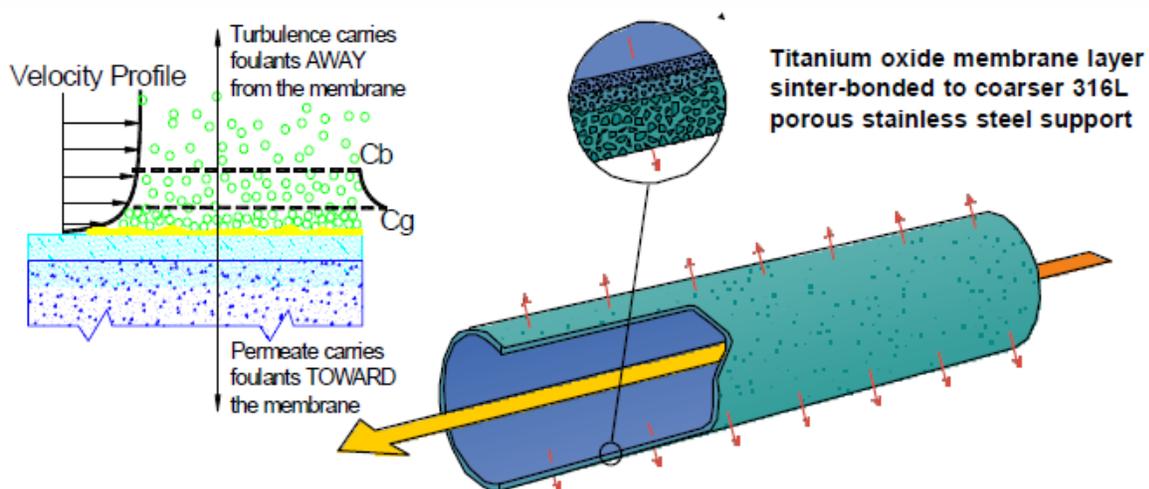
The design of SCEPTER sintered tubes and membranes creates a durable and robust structure making it adaptable to a wide variety of system configurations, from basic batch processing to more complex multi-stage continuous designs. SCEPTER systems are based on modular units, it is easy to increase capacity as need arises, just by adding additional modules or stages. Incorporating Scepter into the lees filtration process effectively manages the large amounts of solids while delivering high levels of juice



recovery. The robust nature ensures that aggressive cleaning process can be used to recover the membranes repeatedly and assuring effective service for many years, minimizing membrane replacement costs while maximizing the ROI.

How the System Works

The contaminated caustic feed stream is pumped into one end of a membrane-lined porous stainless steel tube. Water and clean caustic will pass through the wall of the membrane-lined porous tube, where it is recovered for reuse. The concentrated contaminants flow out the other end of the tubing for further treatment or disposal.



Evaluation of Your Feed Stream

The Graver Technologies design team is available to work with you to analyze your needs. Together we will custom-design the optimal caustic recovery system for your plant. For a preliminary analysis of your process, please contact Graver Technologies toll-free 800-249-1990 x 539 or visit our website: www.gravertech.com, e-mail: info@gravertech.com