

CASE STUDY

Food & Beverage
Industry

Döhler- Multi-national

Tubular Membranes

K19 Module
Installation for Juice
Clarification



PCI Membranes®
Filtration Group®



CASE STUDY

Customer name: Döhler - Multi-national
Application: Juice Clarification
Product: Tubular Membranes, K19 Module

The Challenge

At Döhler, high-quality juice clarification is essential for products made from approximately 90% apple juice blended with 10% red berry juices such as raspberry, bilberry, and elderberry. The plant relies on ultrafiltration technology to achieve consistent clarity and stable product quality.

The facility had been operating with competitors ultrafiltration modules, but the plant began experiencing serious reliability issues with newer modules, including:

- Reduced operational lifetime
- Membrane delamination
- Rapid membrane damage
- Increased maintenance requirements
- Risk of inconsistent filtration performance

These issues led to increased downtime and concerns about maintaining consistent juice clarity and product quality. The plant required a reliable replacement module that could be installed without costly modifications to the existing ultrafiltration system.

The Solution

PCI Membranes® supplied a replacement solution based on the K19 module platform, specifically the FPU20/10 configuration.

The replacement module features:

- Membranes with a 200 kDa molecular weight cut-off, suitable for juice clarification
- Food-grade, BPA-free transparent housing
- Compatibility with existing HFM180 installations
- No requirement for expensive system modifications
- Robust membrane construction for improved durability

The K19 module was selected as a direct replacement (“me-too” solution), allowing the plant to upgrade performance while maintaining its existing ultrafiltration infrastructure. This minimized installation time and avoided costly engineering changes.

The Results

Following installation of the K19 module, the plant achieved:

Improved Reliability

- Reduced risk of membrane delamination
- Longer operational lifetime compared to the problematic modules
- More consistent filtration performance

Operational Efficiency

- Direct replacement without system modifications
- Simplified module changeover

Product Quality

- Consistent juice clarity
- Reliable removal of suspended solids and haze-forming components
- Stable processing of mixed fruit juices

Cost Benefits

- Avoided capital expenditure for system modification
- Reduced maintenance, replacement frequency and interventions
- Improved production continuity

By installing the PCI Membranes® K19 module as a replacement for unreliable ultrafiltration elements, Döhler restored stable and efficient juice clarification. The solution provided a cost-effective upgrade path while maintaining compatibility with the existing filtration system, ensuring reliable production of high-quality fruit juices.

