

Filter Facts #4

Why use metallic membranes for micro-filtration?

Metallic membranes used in micro-filtration have been produced by a sintering process from metals that exhibit qualities of strength and high corrosion resistance. Typically these will be stainless steel, high value nickel compounds, titanium, etc.

The form of most metallic membraned micro-filters is tubular, operated in cross-flow configuration. Technology makes it possible to produce a sintered metal membrane with average pore sizes down to 0.1 micron, the “low” end of micro-filtration. There is further research and development currently occurring with the aim of producing metallic membranes with suitable pore sizes to provide ultra and nano filtration.

Metallic tubular membranes offer unique benefits to processes where:

- Temperatures are exceeding 80 degrees Celsius
- Temperatures are fluctuating causing thermal shock
- High and varying process pressures and hydraulic shocks occur
- Aggressive chemical compositions are present within the feed stream
- High solids loadings are present
- Aggressive cleaning regimes are required to ensure the membrane is fully cleaned from contaminants filtered from the feed stream
- Plant maintenance is to be minimised and hence remove the requirement of membrane or media replacement procedures.