Entegris

INCREASED FILTER LIFESPAN AND PERFORMANCE WITH HIGH TEMPERATURE PHARMACEUTICAL SOLVENTS

Solvent Purity

Solvents play a key role in the manufacturing of pharmaceutical products. Solvents are used in a variety of ways including dissolving a drug for topical treatment and providing molecules to build drugs. Additionally, they are utilized for extraction and purification processes. Regardless of the specific application, it is crucial that the purity of the solvent is maintained throughout its useful life.

In order to maintain a solvent's purity, filters are typically used in the chemical distribution system. The filters may be positioned in the bulk delivery system as well as at the point-of-use. As the process temperature of the solvent increases, it is extremely important to select a filter that is suitable for use at these elevated temperatures and is not chemically degraded by the solvent.

High-temperature Solvent Filtration

Many elevated temperature pharmaceutical solvent filtration applications utilize the same filters applied to ambient solvent filtration applications. The membranes used in these filters are typically made of polytetrafluoroethylene (PTFE), therefore are capable of withstanding higher temperatures and are compatible with solvents and aqueous chemicals in wide pH ranges. However, the cartridge's cage and end caps do not have the same performance specifications: many of these filters use a pigmented polypropylene as the material of construction for the cage and end caps. While this material is stable at ambient temperatures, it is not suitable for continuous use above 90°C. Furthermore, the chemical resistance of these branched polymers (due to the methyl groups in polypropylene) is much lower than that of fully fluorinated PTFE and perfluoroalkoxy (PFA) materials. Solvation, oxidation and extraction of low molecular weight components can take place.

As a consequence, filters using polypropylene cages and end caps will experience deformation during elevated temperature solvent exposure. This deformation will result in sub-standard filtration, contamination from filter degradation, reduced filter life, as well as potential filter blow-by. All of these deficiencies increase manufacturing costs, increase production down-time and reduce solvent quality.

Increased Filter Lifespan and Performance

Entegris Fluorogard® AT filters provide a much needed solution to elevated temperature solvent filtration. The Fluorogard AT filters, designed for high temperatures and aggressive media, utilize a pleated hydrophobic PTFE membrane to provide highly efficient sub-micron filtration of a wide pH range of pharmaceutical solvents. Also, the

Fluorogard AT filters

Fluorogard AT filters are designed with cages and end caps made from a fully fluorinated PFA material. The use of PFA allows the Fluorogard AT filters to be placed into continuous use applications of up to 150°C for an extended period of time. The Fluorogard AT filters are not subject to cage or end cap deformation, resulting in longer filter life and improved filtration performance over filters using polypropylene cages and caps. Cleanliness is also improved as no chemical degradation takes place and extractables are minimized.

The performance of these filters has been proven in elevated temperature solvent applications at multiple large scale drug manufacturers. These manufacturers have seen an increase in filter lifespan of up to four times and a reduction in cost of ownership of up to 60%.

For More Information

For more information on solvent filtration or our complete line of filtration products visit *www.EntegrisLifeSciences.com* or contact your Regional Customer Service center today.

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