MICROSOLV

High and Low Pressure Fitting Differences for HPLC Explained - Tech Information

Key Difference in Ferrule and Nut Seating for Tubing Connections

The primary distinction lies in the seating of the ferrules and nuts within the port where the nuts connect the tubing to unions or adapters. It is crucial to match the pressure rating of the components:

Pressure Rating

With our PEEK double ferrule, we may be able to reach pressures up to 600 bar. Stainless steel (SS) connections remain stable even at higher pressures, such as those used in UHPLC.

Shape and Design

High-pressure connections use a coned ferrule, with the cone inserted into the connection. Proper perpendicular cutting of the tubing is essential for a secure fit and to minimize dead volume. In these cases, the pilot length is particularly important.

Even low-pressure connections require precise tubing cuts to ensure a good seal and reduce dead volume. When working with low-pressure gradients, it is critical to avoid dead volume and carry-over. Low-pressure connections often feature a flat-bottom design. These also use a coned ferrule, but with the cone facing upward and the bottom against the connection. Alternatively, a flanged connection can be used.

Tubing Compatibility

For high and low pressure applications, PEEK tubing can be used.

Key Visual Differences

High-pressure connections are typically made from stainless steel or PEEK components. We even offer hand-tight or finger-tight PEEK connectors.

- Both our high- and low-pressure connectors are precision-machined.
- Low pressure connections are often made with polymer connectors and tubing, i.e. PTFE, FEP, Nylon and other soft polymers.

Click *HERE* for HPLC fittings ordering information and pictures.

ARE-APPLIED RESEARCH™

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