

Temperature and Pressure Specifications for Stainless Steel Tubing - Tech Information

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Determining precise pressure and temperature ratings for stainless steel tubing in HPLC applications requires careful consideration of the tubing type and specific use conditions. Variations such as seamless, welded, or welded and annealed tubing, as well as whether the tubing is used straight or coiled, and the chemical or gas media involved, all significantly influence performance characteristics.

General Pressure Guidelines for MICROSOLV Stainless Steel Tubing *(Non-Coiled, Short Lengths)*

Tubing Size	Maximum Recommended Working Pressure
1/16" OD × 0.020" ID	15,800 psi
1/8" OD × 0.080" ID	7,600 psi

- These values represent maximum recommended working pressures, incorporating a safety margin below the yield pressure—the point at which the tubing begins to plastically deform.
- Yield pressure is significantly lower than burst pressure, due to the work-hardening nature of stainless steel, which strengthens the material as it deforms.
- Actual performance may vary depending on installation, fittings, and environmental conditions.

Temperature Considerations

- Maximum temperature rating: ~400 °C
- However, practical temperature limits are often lower due to:
 - Solvent boiling points
 - Potential chemical interactions at elevated temperatures
 - System design constraints (e.g., seals, fittings, and safety considerations)

Important Notes

- Always consult with your technical team or application specialist when selecting tubing for high-pressure or high-temperature applications.
- Avoid generalizing specifications across different tubing types or use cases without proper validation.

Click [HERE](#) for ordering information on high-pressure stainless steel tubing for HPLC.