

Micro-Metering Valves

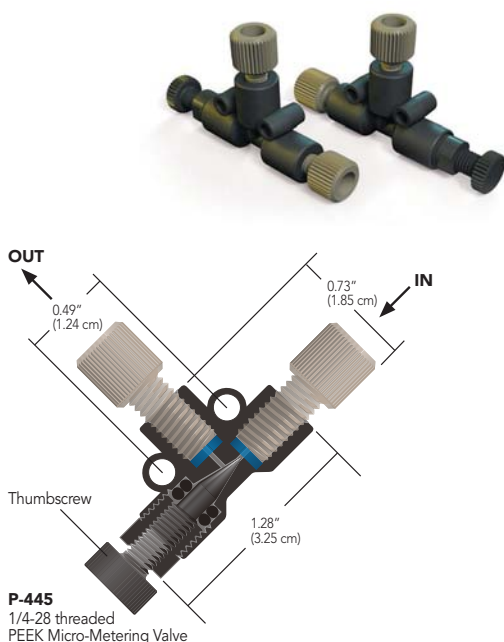
- ▶ Flow rates as low as 3.5 $\mu\text{L}/\text{min}^*$
- ▶ 1/4-28 flat-bottom and 10-32 coned designs available
- ▶ Materials of construction: PEEK, PTFE

For fine control of fluid flow rates, Micro-Metering Valves can reduce outgoing flow to as low as 3.5 $\mu\text{L}/\text{min}^*$. These needle valves are perfect for use with peristaltic pump fluid-transfer applications, mass spectrometry, and fraction collection.

Upchurch Scientific® Micro-Metering Valves can also be used to regulate gas flow in helium sparging lines and as a flow-dependent variable back pressure regulator. For flow independent regulation of back pressure, please see pages 152–153.

Flow path materials are PEEK polymer and PTFE. All versions of this valve have 0.020" (0.50 mm) thru-holes.

**At 1.0 mL/min incoming flow rate with room temperature water.*



APPLICATION NOTE

Back Pressure Considerations

The Micro-Splitter Valves are designed to work when both effluent flow path pressures are nearly identical. However, the split flow path will often have higher back pressure than the waste flow path, making it hard to achieve any split flow at all. There are two possible solutions. Place a back pressure regulator (see pages 152–153) on the waste flow path that is equal to or slightly greater than the pressure on the split flow path. Or, switch the two effluent pathways such that the split flow pathway is attached to the "waste" port on the valve and the waste flow pathway is attached to the "split" port on the valve. *(Please Note: This second method may result in a loss of adjustment sensitivity.)*

Prime/Purge Valve

Air within the pump head can cause noisy pump operation and flow instability. Solve this problem by placing a High Pressure Micro-Splitter Valve (page 146) inline between the pump and the injector valve. You can then safely divert pump flow to a waste container at a sufficient rate to dislodge the air. Remove air from the solvent line leading to the pump with a Prime/Purge Valve (page 155).

Multi-Column and Detector Systems

Does your work require analyses with multiple columns and detectors that use the same mobile phase? If so, install one of our High Pressure Micro-Splitter Valves after your injector. A single injection can then be split to two separate columns and detector systems, at two different flow rates. This economical set-up eliminates the need for an additional pump and injector valve, while allowing data to be obtained simultaneously.

Post-Detector Interfacing

Use a Standard Micro-Splitter Valve to route fluid exiting an initial detector to other devices, such as a mass spectrometer and a fraction collector. The valve will split and reduce the flow rate to that required for MS interfacing, while diverting the remainder of the flow to the collector (a back pressure regulator may also be required for this set up, available on pages 152–153).

Other Applications

These valves are also suited for other applications, such as adapting a standard HPLC system to handle microbore analyses. For more information and plumbing diagrams for this application and those listed above, please contact your local distributor or IDEX Health & Science directly.

Part No.	Material	OD Tubing	Thru-hole	Internal Volume*	Includes
MICRO-METERING VALVES					
P-445	PEEK, Black	1/16"	0.020" (0.50 mm)	7.7 μL	(2) XP-230
★ P-446	PEEK, Black	1/16"	0.020" (0.50 mm)	7.2 μL	(2) F-120
P-447	PEEK, Black	1/8"	0.020" (0.50 mm)	7.7 μL	(2) XP-330

** Maximum internal volume, with valve fully open.*