

ProGasMix

Versatile gas mixer for wide range control of partial pressures

Includes humidification and drying stages and dual mixture output

The unique gas mixer developed at the University of Oslo is finally available also to others, in a compact, mobile and appealing unit, now named *ProGasMix*. It has been used in countless studies of conductivity and other properties as a function of pO_2 , pH_2O , etc., and is especially known for its ability to deliver two mixtures suitable for concentration cell measurements (e.g. for separating transport numbers of oxide ions and protons), permeation studies, and fuel cell component tests.

ProGasMix is a versatile manual rotameter-based gas mixer that selects and mixes three gases from a range of connected input gases. A second mixture can be modified from the first for

concentration cell measurements. Both are humidified and dried and the two portions mixed to set pH_2O individually in the two mixtures. It is a unique tool for students and researchers in materials science, suitable for use with the ProboStat™ or other systems using variable controlled atmospheres. It offers the economy, simplicity, and insight to those that value versatility and wide ranges of mixing. Partial pressures are calculated from flowmeter readings via accompanying software.

ProGasMix specifications

- Up to 7 input gases (Swagelok quick-connects, 2-12 bar)
- Selection of 3 input gases for mixing
- 2 individual mixtures routable to 4 outlets
- Mixer and outlets at near-atmospheric pressure
- Reduction valves and dibutyl phthalate column pressure controls
- 16 Sho-rate flowmeters with needle valves
- Flow range on outlets: 1-50 ml_n/min
- Wetting stage: Peltier-cooled bubblers
- Drying stage: Mol-sieve 5A Water Vapor Traps (Supelco)
- Tubing, materials: 1/8 inch Cu tubing and brass components
- Illuminated plexiglass/metal construction, 19 inch rack, wheels
- For ProboStat™ or other measurement/annealing systems
- Gases: Example: O₂, air, N₂, Ar, CO, CO₂, 5%H₂ in Ar ("Harmix")
- Flowmeter reading conversion, mixing, and equilibria: custom software



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