



# MATHESON

The Gas Professionals

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NOTE: The factors given below are primarily for flowmeter sizing only. For Flowmeters calibrated for AIR. For more accurate results, the tube should be calibrated for the specific gas.

Gas Being Used	Factor	Gas Being Used	Factor	Gas Being Used	Factor
Acetylene	1.049	Halocarbon-13	0.526	Monomethylamine	0.962
Air	1.000	Halocarbon-13B1	0.434	Neon	1.199
Ammonia	1.294	Halocarbon-14	0.573	Nitric Oxide	0.982
Argon	0.851	Halocarbon-21	0.529	Nitrogen	1.017
Arsine	0.610	Halocarbon	0.567	Nitrogen Dioxide	0.618
Boron Trichloride	0.493	Halocarbon-23	0.643	Nitrogen Trifluoride	0.638
Boron Trifluoride	0.648	Halocarbon-113	0.393	Nitrous Oxide	0.808
1-3 Butadiene	0.730	Halocarbon-114	0.411	Oxygen	0.951
Butane	0.688	Halocarbon-115	0.425	Ozone	0.776
1-Butene	0.707	Halocarbon-116	0.455	Phosgene	0.536
Carbon Dioxide	0.808	Halocarbon-142B	0.535	Phosphine	0.919
Carbon Monoxide	1.017	Halocarbon-152A	0.662	Propane	0.803
Chlorine	0.636	Helium	2.692	Propylene	0.822
Cracked Ammonia	1.844	Hydrogen	3.793	Silane	0.947
CycloPropane	0.830	Hydrogen Bromide	0.596	Silicon Tetrafluoride	0.525
Dichlorosilane	0.533	Hydrogen Chloride	0.888	Sulfur Dioxide	0.665
Difluoroethane	0.662	Hydrogen Fluoride	0.734	Sulfur Hexafluoride	0.442
Dimethyl Ether	0.785	Hydrogen Sulfide	0.917	Trichlorosilane	0.466
Disilane	0.648	Isobutane	0.696	Xenon	0.469
Ethane	0.977	Isobutylene	0.717		
Ethylene	1.013	Krypton	0.588		
Fluorine	0.873	Methane (Natural Gas)	1.342		
Halocarbon-11	0.459	Methyl Fluoride	0.915		
Halocarbon-12	0.488	Monoethylamine	0.788		

Gas being used = air x factor

Air = gas being used divided by factor

### Example: Air to Gas

The flowmeter is calibrated to air. The gas being used is Methane.

For the approximate flow rate in Methane.

Methane factor = 1.342

sccm-Air x 1.342 = sccm-Methane

If the ball float is at 1500 sccm-air, the flow rate in Methane is:

1500 sccm-Air x 1.342 = 2013 sccm Methane

### Example: Air to Gas mixture

The flowmeter is calibrated to air. The gas mixture is 3% Methane balance Nitrogen.

For the approximate flow rate for the gas mixture

Methane factor = 1.342

Nitrogen factor = 1.017

Mix factor = (0.03 x 1.342) + (0.97 x 1.017) = **1.027**

sccm-Air x 1.027 = sccm-(3% methane/nitrogen mix)

If the ball float is at 280 ccm air then the flow rate for the mix is:

280 sccm-Air x 1.027 = 288 sccm-(3% methane/nitrogen mix)