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Density of Common Gases

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In determining the type of gas monitoring system required and locations for gas sensor placement, there are various factors, such as gas density, that require consideration. Assessing these factors prior to equipment selection is important in preventing future potential problems that can affect proper monitoring of hazardous gas accumulations.

Gas	Lighter/ Heavier	Relative Density*
Ammonia (NH_3)	Lighter	0.597
Butane (C_4H_{10})	Heavier	2.110
Carbon Dioxide (CO_2)	Heavier	1.530
Carbon Monoxide (CO)	Slightly Lighter	0.967
Chlorine (CL_2)	Heavier	2.473
Ethylene (C_2H_4)	Slightly Lighter	0.975
Ethylene Oxide/ETO (C_2H_4O)	Heavier	1.490
Heptane	Heavier	-------
Hydrogen (H_2)	Lighter	0.069
Hydrogen Chloride (HCL)	Heavier	1.267
Hydrogen Cyanide (HCN)	Slightly Lighter	0.947
Hydrogen Sulfide (H_2S)	Heavier	1.188
Methane (CH_4)	Lighter	0.555
Methyl Alcohol	Heavier	-------
Nitric Oxide (NO)	Slightly Heavier	1.036
Nitrogen Dioxide (NO_2)	Heavier	2.620
Oxygen (O_2)	Heavier	1.105
Pentane	Heavier	-------
Propane (C_3H_8)	Heavier	1.550
Sulfur Dioxide (SO_2)	Heavier	2.263
Toluene	Heavier	-------

*Relative Density (Air = 1)

Reference:
William Braker and Allen L. Mossman, 1980, Matheson Gas Data Book, Sixth Edition.