



Atmospheric Science Training Module	Building Blocks of Matter	Greenhouse Gases: CO ₂ and H ₂ O	The Flow of Matter	Oxygen, Oxidation and Combustion	Stratospheric Ozone and Ultraviolet Light	Nitrogen: Properties vs. Amount	Atmospheric Science Training Conclusion
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Planetary Atmosphere Comparison Chart

Planet	Amount of Atmosphere	Atmospheric Composition
Mercury	Trace atmosphere = .000000000000010 bars*	42% oxygen (O ₂) 29% sodium (Na) 22% hydrogen (H ₂) 6% helium (He) 0.5% potassium (K), possible trace amounts of: argon (Ar), carbon dioxide (CO ₂), water (H ₂ O), nitrogen (N ₂), xenon (Xe), krypton (Kr), neon (Ne)
Venus	Atmosphere = 92 bars	96.5% carbon dioxide (CO ₂) 3.5% nitrogen (N ₂) water (H ₂ O) - 0.0020% trace amounts of: sulfur dioxide (SO ₂), argon (Ar), carbon monoxide (CO), helium (He) and neon (Ne)
Earth	1 bar (at sea level)	78% nitrogen (N ₂) 21% oxygen (O ₂) 0.035% carbon dioxide (CO ₂) 1 to 4% water vapor (H ₂ O) 300 Dobson Units ozone (O ₃) 0.002% methane (CH ₄) 0.9% argon (Ar) trace amounts of: helium (He), krypton (Kr) and hydrogen (H ₂)
Moon	0 bars	None
Mars	Atmosphere = 0.0061 bars	95.32% carbon dioxide (CO ₂) 2.7% nitrogen (N ₂) 1.6% argon (Ar) 0.13% oxygen (O ₂) 0.08% carbon monoxide (CO) water (H ₂ O) - 0.0210% trace amounts of: nitrogen oxide (NO), neon (Ne), hydrogen-deuterium-oxygen (HDO), krypton (Kr) and xenon (Xe)
Jupiter	Atmosphere > 1000 bars	89.8% hydrogen (H ₂) 10.2% helium (He) 0.3% methane (CH ₄) ~0.0004% water (H ₂ O) (varies with pressure) trace amounts of: ammonia (NH ₃), hydrogen deuteride (HD) and ethane (C ₂ H ₆) - 5.8 (1.5);
Saturn	Atmosphere >1000 bars	96.3% hydrogen (H ₂) 3.25% helium (He) 0.45% methane (CH ₄) trace amounts of: ammonia (NH ₃), hydrogen deuteride (HD) and ethane (C ₂ H ₆)
Uranus	Atmosphere > 1000 bars	82.5% hydrogen (H ₂) 15.2% helium (He) ~2.3% methane (CH ₄) trace amounts of: hydrogen deuteride (HD)
Neptune	Atmosphere > 1000 bars	80.0% hydrogen (H ₂) 19.0% helium (He) 1.5% methane (CH ₄) trace amounts of: hydrogen deuteride (HD) and ethane (C ₂ H ₆)
Pluto	Atmosphere ~0.000003 bars	Methane (CH ₄), nitrogen (N ₂)

* A bar is the average atmospheric pressure at sea level on Earth.

