

CONSTITUENTS ATMOSPHERE	Formula	Volume %	Total mol x 10 ²⁰	Total g x 10 ²¹
Nitrogen	N ₂	78.084 ± 0.004	1.39	3.9
Oxygen	O ₂	20.946 ± 0.002	0.37	1.2
Argon	Ar	0.934 ± 0/001	0.017	0.066
Carbon dioxide	CO ₂	0.033 ± 0.001 (*)	0.0006	0.0026
Neon	Ne	18.18 x 10 ⁻⁴		
Helium	He	5.24 x 10 ⁻⁴		
Krypton	Kr	1.14 x 10 ⁻⁴		
Xenon	Xe	0.087 x 10 ⁻⁴		
Hydrogen	H ₂	0.5 x 10 ⁻⁴		
Methane	CH ₄	2.0 x 10 ⁻⁴		
Nitrous oxide	N ₂ O	0.27 x 10 ⁻⁴		
Water vapour	H ₂ O		0.067	0.12

Table 1

Composition of the lower atmosphere and exosphere (Encyclopedia Britannica, 1962; Chamberlain, 1978; Budyko et al., 1987; Veldkamp, 1965).

CONSTITUENTS EXOSPHERE Height km	N ₂ No. atoms or molecules/cm ³	O ₂ (**)	O	He	H	Average Mol. or At. weight
500	10 ⁷ (2.6 x 10 ⁵)	10 ⁶ (4.6 x 10 ³)	10 ⁸ (1.8 x 10 ⁷)	10 ⁶ (3.2 x 10 ⁶)	10 ³ (8 x 10 ⁴)	18 (14.33)
750	(2.7 x 10 ²)	(1.8)	(3.7 x 10 ⁵)	(1.2 x 10 ⁶)	(6.2 x 10 ⁴)	(6.58)
800	10 ⁵	10 ⁴	10 ⁷	10 ⁵	10 ³	16
1000	10 ⁴ (0.46)	10 ² (1.3 x 10 ⁻³)	10 ⁶ (9.6 x 10 ³)	10 ⁵ (4.9 x 10 ⁵)	10 ³ (5.4 x 10 ⁴)	14 3.94)
1500	10	0	10 ⁴	10 ⁵	10 ³	6
2000	0	0	10 ³	10 ⁴	10 ³	5

(*) Global average of 1980, with 2 to 3 % increase/decade due to fossil fuel burning.

(**) Data from Veldkamp (1965), in brackets from Chamberlain (1978).