

Mineralogy Gems

Abundance of the Elements

TABLE 2-1
Short Table of Cosmic Abundances (Atoms/Si)

Element	Cameron (1982)	Anders and Ebihara (1982)
O	18.4	20.1
Na	0.06	0.057
Mg	1.06	1.07
Al	0.085	0.0849
Si	1.00	1.00
K	0.0035	0.00377
Ca	0.0625	0.0611
Ti	0.0024	0.0024
Fe	0.90	0.90
Ni	0.0478	0.0493

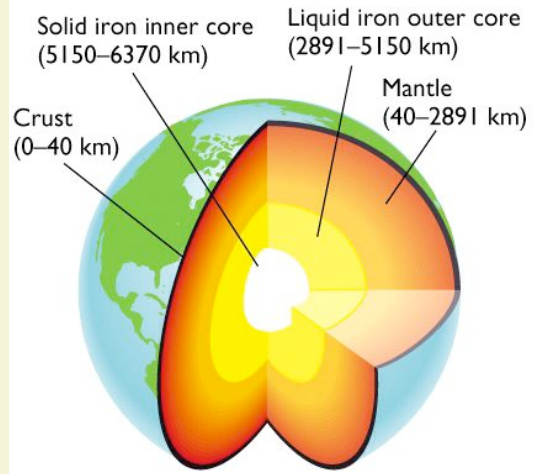


TABLE 2-2
Simple Earth Model Based on Cosmic Abundances

Oxides	Molecules	Molecular Weight	Grams	Weight Fraction
MgO	1.06	40	42.4	0.250
SiO ₂	1.00	60	60.0	0.354
Al ₂ O ₃	0.0425	102	4.35	0.026
CaO	0.0625	56	3.5	0.021
Na ₂ O	0.03	62	1.84	0.011
Fe ₂ O	0.45	128	57.6	0.339
Total			169.7	1.001

TABLE 2-3 Estimates of Average Bulk Composition of the Continental Crust

Species	A	B	C
SiO ₂ (percent)	58.0	63.7	57.3
TiO ₂	0.8	0.5	0.9
Al ₂ O ₃	18.0	15.8	15.9
FeO	7.5	4.7	9.1
MnO	0.14	0.07	-
MgO	3.5	2.7	5.3
CaO	7.5	4.5	7.4
Na ₂ O	3.5	4.3	3.1
K ₂ O	1.5	2.0	1.1
P ₂ O ₅	-	0.17	-
Rb (ppm)	42	55	32
Sr	400	498	260
Th	4.8	5.1	3.5
U	1.25	1.3	0.91
Pb	10	15	9

A: Andesite model (Taylor and McLennan, 1985). B: Amphibolite-granulite lower crustal model (Weaver and Tarney, 1984). C: Theoretical model (Taylor and McLennan, 1985).

