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Practical Handbook of Physical Properties of Rocks and Minerals

Edited by

Robert S. Carmichael

Head, Geophysics Program
Department of Geology
University of Iowa
Iowa City, Iowa

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Table 71
AVERAGE ABUNDANCES OF ELEMENTS IN THE EARTH'S CRUST, IN THREE COMMON ROCKS, AND IN SEAWATER (ppm)

Element	Crust[247]	Granite[247]	Basalt[247]	Shale[373]	Seawater[133]
O	46.4×10^6				857,000
Si	28.2×10^6	32.3×10^6	24.0×10^6	23.8×10^6	3.0
Al	8.2×10^6	7.7×10^6	8.8×10^6	8.0×10^6[361]	0.01
Fe	5.6×10^6	2.7×10^6	8.6×10^6	4.7×10^6[361]	0.01
Ca	4.1×10^6	1.6×10^6	6.7×10^6	2.5×10^6	400
Na	2.4×10^6	2.8×10^6	1.9×10^6	0.66×10^6	10,500
Mg	2.3×10^6	0.16×10^6	4.5×10^6	1.34×10^6	1,350
K	2.1×10^6	3.3×10^6	0.83×10^6	2.3×10^6	380
Ti	5,700	2,300	9,000	4,500	0.001
H	1,400				108,000
P	1,050	700	1,400	770	0.07
Mn	950	400	1,500	850[361]	0.002
F	625	850	400	500	1.3
Ba	425	600	250	580[361]	0.03
Sr	375	285	465	450	8.0
S	260	270	250	220	885
C	200	300	100	1,000	28
Zr	165	180	150	200	
V	135	20	250	130	0.002
Cl	130	200	60	160	19,000
Cr	100	4	200	100	0.00005
Rb	90	150	30	140[361]	0.12
Ni	75	0.5	150	95	0.002
Zn	70	40	100	80	0.01
Ce	67[361]	87[361]	48[361]	50	5.2×10^{-6}
Cu	55	10	100	57	0.003
Y	33	40	25	30	0.0003
Nd	28	35[361]	20	23	9.2×10^{-6}
La	25	40	10	40	1.2×10^{-5}
Co	25	1	48	20	0.0001
Sc	22	5	38	10	0.00004
Li	20	30	10	60	0.17
N	20	20	20	60	0.5
Nb	20	20	20	20	0.00001
Ga	15	18	12	19[361]	0.00003
Pb	12.5	20	5	20	0.00003
B	10	15	5	100	4.6
Th	9.6	17	2.2	11	0.00005
Sm	7.3[361]	9.4[361]	5.3[361]	5.5	1.7×10^{-6}
Gd	7.3[361]	9.4[361]	5.3[361]	6.5	2.4×10^{-6}
Pr	6.5[361]	8.3[361]	4.6[361]	5	2.6×10^{-6}
Dy	5.2[361]	6.7[361]	3.8[361]	4.5	2.9×10^{-6}
Yb	3	3.8[361]	2.1[361]	3	2.0×10^{-6}
Hf	3	4	2	6	
Cs	3	5	1	5[361]	0.0005
Be	2.8	5	0.5	3	6×10^{-7}
Er	2.8	3.8[361]	2.1[361]	2.5	2.4×10^{-6}
U	2.7	4.8	0.6	3.2	0.003
Br	2.5	1.3	3.6	6	65
Sn	2	3	1	6[361]	0.0008
As	1.8	1.5	2	6.6	0.003
Ge	1.5	1.5	1.5	2	0.00006
Mo	1.5	2	1	2	0.01
W	1.5	2	1	2	0.0001
Ho	1.5[361]	1.9[361]	1.1[361]	1	8.8×10^{-7}