6.2: Elemental Abundances

Elemental Abundances

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Elemental Abundance in Solar System

Atom	Atomic No.	Abundance* (atoms/10^6 atoms Si)	Log(abund)
H	1	27900000000	10.45
He	2	2720000000	9.43
Li	3	57.1	1.76
Be	4	0.73	-0.14
B	5	21.2	1.33
C	6	10100000	7
N	7	313000	5.5
O	8	23800000	7.38
F	9	843	2.93
Ne	10	3440000	6.54
Na	11	57400	4.76
Mg	12	1074000	6.03
Al	13	84900	4.93
Si	14	1000000	6
P	15	10400	4.02
S	16	515000	5.71
Cl	17	5240	3.72
Ar	18	101000	5
K	19	3770	3.58
Ca	20	61100	4.79
Sc	21	34.2	1.53
Ti	22	2400	3.38
V	23	293	2.47
Cr	24	13500	4.13
Mn	25	9550	3.98
Fe	26	900000	5.95
Co	27	2250	3.35
Ni	28	49300	4.69
Cu	29	522	2.72
Zn	30	1260	3.1
Ga	31	37.8	1.58
Ge	32	119	2.08
As	33	6.56	0.82
Se	34	62.1	1.79
Br	35	11.8	1.07

Atom	Atomic No.	Abundance* (atoms/10^6 atoms Si)	Log(abund)
Kr	36	45	1.65
Rb	37	7.09	0.85
Sr	38	23.5	1.37
Y	39	4.64	0.67
Zr	40	11.4	1.06
Nb	41	0.698	-0.16
Mo	42	2.55	0.41
Tc	43		
Ru	44	1.86	0.27
Rh	45	0.344	-0.46
Pd	46	1.39	0.14
Ag	47	0.486	-0.31
Cd	48	1.61	0.21
In	49	0.184	-0.74
Sn	50	3.82	0.58
Sb	51	0.309	-0.51
Te	52	4.81	0.68
I	53	0.9	-0.05
Xe	54	4.7	0.67
Cs	55	0.372	-0.43
Ba	56	4.49	0.65
La	57	0.446	-0.35
Ce	58	1.136	0.06
Pr	59	0.1669	-0.78
Nd	60	0.8279	-0.08
Pm	61		
Sm	62	0.2282	-0.64
Eu	63	0.0973	-1.01
Gd	64	0.33	-0.48
Tb	65	0.0603	-1.22
Dy	66	0.3942	-0.4
Ho	67	0.0889	-1.05
Er	68	0.2508	-0.6
Tm	69	0.0378	-1.42
Yb	70	0.2479	-0.61
Lu	71	0.0367	-1.44
Hf	72	0.154	-0.81
Ta	73	0.0207	-1.68
W	74	0.133	-0.88

Atom	Atomic No.	Abundance* (atoms/10^6 atoms Si)	Log(abund)
Re	75	0.0517	-1.29
Os	76	0.675	-0.17
Ir	77	0.661	-0.18
Pt	78	1.34	0.13
Au	79	0.187	-0.73
Hg	80	0.34	-0.47
Tl	81	0.184	-0.74
Pb	82	3.15	0.5
Bi	83	0.144	-0.84
Po	84		
At	85		
Rn	86		
Fr	87		
Ra	88		
Ac	89		
Th	90	0.0335	-1.47
Pa	91		
U	92	0.009	-2.05
Np	93		
Pu	94		
Am	95		
Cm	96		
Bk	97		
Cf	98		
Es	99		
Fm	100		
Md	101		
No	102		
Lr	103		

*Anders, Edward; Grevesse; Nicolas, Geochimica et Cosmochimica Acta 1989, 53, 197-214.

Elemental Abundance in Earth Crust

Atom	Atomic No.	Abundance*
H	1	6.2
He	2	0
Li	3	4.1
Be	4	3.2
B	5	4
C	6	6.7
N	7	4.3

Atom	Atomic No.	Abundance*
O	8	8.67
F	9	5.8
Ne	10	0
Na	11	7.36
Mg	12	7.51
Al	13	7.92
Si	14	8.43
P	15	6
S	16	5.8
Cl	17	5.3
Ar	18	1
K	19	6.96
Ca	20	7.72
Sc	21	4.5
Ti	22	6.7
V	23	5.4
Cr	24	5.3
Mn	25	6.1
Fe	26	7.84
Co	27	4.5
Ni	28	5
Cu	29	4.9
Zn	30	4.9
Ga	31	4.3
Ge	32	3.2
As	33	3.4
Se	34	1.7
Br	35	3.4
Kr	36	-1
Rb	37	4.5
Sr	38	5.4
Y	39	4.3
Zr	40	5
Nb	41	4
Mo	42	3
Tc	43	
Ru	44	0
Rh	45	-1
Pd	46	0

Atom	Atomic No.	Abundance*
Ag	47	1.9
Cd	48	2
In	49	1.7
Sn	50	3.4
Sb	51	2.3
Te	52	-1
I	53	2.7
Xe	54	-2
Cs	55	3
Ba	56	5.4
La	57	4.2
Ce	58	4.5
Pr	59	3.6
Nd	60	4.2
Pm	61	
Sm	62	3.5
Eu	63	3
Gd	64	3.5
Tb	65	2.8
Dy	66	3.6
Ho	67	2.9
Er	68	3.3
Tm	69	2.5
Yb	70	3.3
Lu	71	2.5
Hf	72	3.5
Ta	73	3
W	74	3
Re	75	-0.3
Os	76	-1
Ir	77	-1
Pt	78	0
Au	79	0.5
Hg	80	2
Tl	81	2.6
Pb	82	3.9
Bi	83	-1
Po	84	
At	85	

Atom	Atomic No.	Abundance*
Rn	86	
Fr	87	
Ra	88	-4
Ac	89	
Th	90	3.6
Pa	91	-5
U	92	3
Np	93	
Pu	94	
Am	95	
Cm	96	
Bk	97	
Cf	98	
Es	99	
Fm	100	
Md	101	
No	102	
Lr	103	

*log(mass fraction in ppb, that is µg/kg)