

Exact Masses and Isotopic Abundances

Based on the Carbon 12 Standard

The following data was collected from a compilation of data from the CRC Handbook and other references.

Name	Symbol	Mass	Abund.	Symbol	Mass	Abund.	Symbol	Mass	Abund.
Aluminum	Al (27)	26.981541	100.00						
Antimony	Sb (121)	120.903824	57.30	Sb (123)	122.904222	42.70			
Argon	Ar (36)	35.967546	0.34	Ar (38)	37.962732	0.063	Ar (40)	39.962383	99.60
Arsenic	As (75)	74.921596	100.00						
Barium	Ba (130)	129.906277	0.11	Ba (132)	131.905042	0.10	Ba (134)	133.904490	2.42
	Ba (135)	134.905668	6.59	Ba (136)	135.904556	7.85	Ba (137)	136.905816	11.23
	Ba (138)	137.905236	71.70						
Beryllium	Be (9)	9.012183	100.00						
Bismuth	Bi (209)	208.980388	100.00						
Boron	B (10)	10.012938	19.80	B (11)	11.009305	80.20			
Bromine	Br (79)	78.918336	50.69	Br (81)	80.916290	49.31			
Cadmium	Cd (106)	105.906461	1.25	Cd (110)	109.903007	12.49	Cd (111)	110.904182	12.80
	Cd (112)	111.902761	24.13	Cd (113)	112.904401	12.22	Cd (114)	113.903361	28.73
	Cd (116)	115.904758	7.49						
Calcium	Ca (40)	39.962591	96.95	Ca (42)	41.958622	0.65	Ca (43)	42.958770	0.14
	Ca (44)	43.955485	2.086	Ca (46)	45.953689	0.004	Ca (48)	47.952532	0.19
Carbon	C (12)	12.000000	98.90	C (13)	13.003355	1.10			

Cerium	Ce (136)	135.907140	0.19	Ce (138)	137.905996	0.25	Ce (140)	139.905442	88.48
	Ce (142)	141.909249	11.08						
Cesium	Cs (133)	132.905433	100.00						
Chlorine	Cl (35)	34.968853	75.77	Cl (37)	36.965903	24.23			
Chromium	Cr (50)	49.946046	4.35	Cr (52)	51.940510	83.79	Cr (53)	52.940651	9.50
	Cr (54)	53.938882	2.36						
Cobalt	Co (59)	58.933198	100.00						
Copper	Cu (63)	62.929599	69.17	Cu (65)	64.927792	30.83			
Dysprosium	Dy (156)	155.924287	0.060	Dy (158)	157.924412	0.10	Dy (160)	159.925203	2.34
	Dy (161)	160.926939	18.90	Dy (162)	161.926805	25.50	Dy (163)	162.928737	24.90
	Dy (164)	163.929183	28.20						
Erbium	Er (162)	161.928787	0.14	Er (164)	163.929211	1.61	Er (166)	165.930305	33.60
	Er (167)	166.932061	22.95	Er (168)	167.932383	26.80	Er (170)	169.935476	14.90
Europium	Eu (151)	150.919860	47.80	Eu (153)	152.921243	52.20			
Fluorine	F (19)	18.998403	100.00						
Gallium	Ga (69)	68.925581	60.10	Ga (71)	70.924701	39.90			
Gadolinium	Gd (152)	151.919803	0.200	Gd (154)	153.920876	2.18	Gd (155)	154.822629	14.80
	Gd (156)	155.922130	20.47	Gd (157)	156.923967	15.65	Gd (158)	157.924111	24.84
	Gd (160)	159.927061	21.86						
Germanium	Ge (70)	69.924250	20.50	Ge (72)	71.922080	27.40	Ge (73)	72.923464	7.80
	Ge (74)	73.921179	36.50	Ge (76)	75.921403	7.80			
Gold	Au (197)	196.966560	100.00						
Hafnium	Hf (174)	173.940065	0.16	Hf (176)	175.941420	5.20	Hf (177)	176.943233	18.60
	Hf (178)	177.943710	27.10	Hf (179)	178.945827	13.74	Hf (180)	179.946561	35.20
Helium	He (3)	3.016029	.0001	He (4)	4.002603	100.00			

Holmium	Ho (165)	164.930332	100.00						
Hydrogen	H (1)	1.007825	99.99	H (2)	2.014102	0.015			
Indium	In (113)	112.904056	4.30	In (115)	114.903875	95.70			
Iodine	I (127)	126.904477	100.00						
Iridium	Ir (191)	190.960603	37.30	Ir (193)	192.962942	62.70			
Iron	Fe (54)	53.939612	5.80	Fe (56)	55.934939	91.72	Fe (57)	56.935396	2.20
	Fe (58)	57.933278	0.28						
Krypton	Kr (78)	77.920397	0.35	Kr (80)	79.916375	2.25	Kr (82)	81.913483	11.60
	Kr (83)	82.914134	11.50	Kr (84)	83.911506	57.00	Kr (86)	85.910614	17.30
Lanthanum	La (138)	137.907114	0.09	La (139)	138.906355	99.91			
Lead	Pb (204)	203.973037	1.40	Pb (206)	205.974455	24.10	Pb (207)	206.975885	22.10
	Pb (208)	207.976641	52.40						
Lithium	Li (6)	6.015123	7.42	Li (7)	7.016005	92.58			
Lutetium	Lu (175)	174.940785	97.40	Lu (176)	175.942694	2.60			
Magnesium	Mg (24)	23.985045	78.90	Mg (25)	24.985839	10.00	Mg (26)	25.982595	11.10
Manganese	Mn (55)	54.938046	100.00						
Mercury	Hg (196)	195.965812	0.15	Hg (198)	197.966760	10.10	Hg (199)	198.968269	17.00
	Hg (200)	199.968316	23.10	Hg (201)	200.970293	13.20	Hg (202)	201.970632	29.65
	Hg (204)	203.973481	6.80						
Molybdenum	Mo (92)	91.906809	14.84	Mo (94)	93.905086	9.25	Mo (95)	94.905838	15.92
	Mo (96)	95.904676	16.68	Mo (97)	96.906018	9.55	Mo (98)	97.905405	24.13
	Mo (100)	99.907473	9.63						
Neodymium	Nd (142)	141.907731	27.13	Nd (143)	142.909823	12.18	Nd (144)	143.910096	23.80
	Nd (145)	144.912582	8.30	Nd (146)	145.913126	17.19	Nd (148)	147.916901	5.76
	Nd (150)	149.920900	5.64						

Neon	Ne (20)	19.992439	90.60	Ne (21)	20.993845	0.26	Ne (22)	21.991384	9.20
Nickel	Ni (58)	57.935347	68.27	Ni (60)	59.930789	26.10	Ni (61)	60.931059	1.13
	Ni (62)	61.928346	3.59	Ni (64)	63.927968	0.91			
Niobium	Nb (93)	92.906378	100.00						
Nitrogen	N (14)	14.003074	99.63	N (15)	15.000109	0.37			
Osmium	Os (184)	183.952514	0.02	Os (186)	185.953852	1.58	Os (187)	186.955762	1.60
	Os (188)	187.955850	13.30	Os (189)	188.958156	16.10	Os (190)	189.958455	26.40
	Os (192)	191.961487	41.00						
Oxygen	O (16)	15.994915	99.76	O (17)	16.999131	0.038	O (18)	17.999159	0.20
Palladium	Pd (102)	101.905609	1.02	Pd (104)	103.904026	11.14	Pd (105)	104.905075	22.33
	Pd (106)	105.903475	27.33	Pd (108)	107.903894	26.46	Pd (110)	109.905169	11.72
Phosphorus	P (31)	30.973763	100.00						
Platinum	Pt (190)	189.959937	0.010	Pt (192)	191.961049	0.79	Pt (194)	193.962679	32.90
	Pt (195)	194.964785	33.80	Pt (196)	195.964947	25.30	Pt (198)	197.967879	7.20
Potassium	K (39)	38.963708	93.20	K (40)	39.963999	0.012	K (41)	40.961825	6.73
Praseodymium	Pr (141)	140.907657	100.00						
Rhenium	Re (185)	184.952977	37.40	Re (187)	186.955765	62.60			
Rhodium	Rh (103)	102.905503	100.00						
Rubidium	Rb (85)	84.911800	72.17	Rb (87)	86.909184	27.84			
Ruthenium	Ru (96)	95.907596	5.52	Ru (98)	97.905287	1.88	Ru (99)	98.905937	12.70
	Ru (100)	99.904218	12.60	Ru (101)	100.905581	17.00	Ru (102)	101.904348	31.60
	Ru (104)	103.905422	18.70						
Samarium	Sm (144)	143.912009	3.10	Sm (147)	146.914907	15.00	Sm (148)	147.914832	11.30
	Sm (149)	148.917193	13.80	Sm (150)	149.917285	7.40	Sm (152)	151.919741	26.70
	Sm (154)	153.922218	22.70						

Scandium	Sc (45)	44.955914	100.00					
Selenium	Se (74)	73.922477	0.90	Se (76)	75.919207	9.00	Se (77)	76.919908 7.60
	Se (78)	77.917304	23.50	Se (80)	79.916521	49.60	Se (82)	81.916709 9.40
Silicon	Si (28)	27.976928	92.23	Si (29)	28.976496	4.67	Si (30)	29.973772 3.10
Silver	Ag (107)	106.905095	51.84	Ag (109)	108.904754	48.16		
Sodium	Na (23)	22.989770	100.00					
Strontium	Sr (84)	83.913428	0.56	Sr (86)	85.909273	9.86	Sr (87)	86.908902 7.00
	Sr (88)	87.905625	82.58					
Sulfur	S (32)	31.972072	95.02	S (33)	32.971459	0.75	S (34)	33.967868 4.21
	S (36)	35.967079	0.020					
Tantalum	Ta (180)	179.947489	0.012	Ta (181)	180.948014	99.99		
Tellurium	Te (122)	121.903055	2.60	Te (123)	122.904278	0.91	Te (124)	123.902825 4.82
	Te (125)	124.904435	7.14	Te (126)	125.903310	18.95	Te (128)	127.904464 31.69
	Te (130)	129.906229	33.80					
Terbium	Tb (159)	158.925350	100.00					
Thallium	Tl (203)	202.972336	29.52	Tl (205)	204.974410	70.48		
Thorium	Th (232)	232.038054	100.00					
Thulium	Tm (169)	168.934225	100.00					
Tin	Sn (112)	111.904826	0.97	Sn (114)	113.902784	0.65	Sn (115)	114.903348 0.36
	Sn (116)	115.901744	14.70	Sn (117)	116.902954	7.70	Sn (118)	117.901607 24.30
	Sn (119)	118.903310	8.60	Sn (120)	119.902199	32.40	Sn (122)	121.903440 4.60
	Sn (124)	123.905271	5.60					
Titanium	Ti (46)	45.952633	8.00	Ti (47)	46.951765	7.30	Ti (48)	47.947947 73.80
	Ti (49)	48.947871	5.50	Ti (50)	49.944786	5.40		
Tungsten	W (180)	179.946727	0.13	W (182)	181.948225	26.30	W (183)	182.950245 14.30

	W (184)	183.950953	30.67	W (186)	185.954377	28.60		
Uranium	U (234)	234.040947	0.006	U (235)	235.043925	0.72	U (238)	238.050786 99.27
Vanadium	V (50)	49.947161	0.25	V (51)	50.943963	99.75		
Xenon	Xe (124)	123.905894	0.10	X (126)	125.904281	0.09		
	Xe (128)	127.903531	1.91	Xe (129)	128.904780	26.40	Xe (130)	129.903510 4.10
	Xe (131)	130.905076	21.20	Xe (132)	131.904148	26.90	Xe (134)	133.905395 10.40
	Xe (136)	135.907219	8.90					
Ytterbium	Yb (168)	167.933908	0.13	Yb (170)	169.934774	3.05	Yb (171)	170.936338 14.30
	Yb (172)	171.936393	21.90	Yb (173)	172.938222	16.12	Yb (174)	173.938873 31.80
	Yb (176)	175.942576	12.70					
Yttrium	Y (89)	88.905856	100.00					
Zinc	Zn (64)	63.929145	48.60	Zn (66)	65.926035	27.90	Zn (67)	66.927129 4.10
	Zn (68)	67.924846	18.80	Zn (70)	69.925325	0.60		
Zirconium	Zr (90)	89.904708	51.45	Zr (91)	90.905644	11.27	Zr (92)	91.905039 17.17
	Zr (94)	93.906319	17.33	Zr (96)	95.908272	2.78		