Periodic Table of the Elements

Alkali metal | Alkaline earth metal | Lanthanide | Actinide | Transition metal | Post transition metal | Metalloid | Nonmetal | Noble gase | Unclassified | Group 17 = Halogen

Key

group
Xy
Atomname
MW — ox. no.
r_a/r_i — EN
m.p./b.p.
p, Xy_n, $Xy^{+/-}$ — abc
el. conf.

relative ionic radius (r_i, $Xy^{+/-}$)
relative atomic radius (r_a)

Note: values written in gray are predictions

#.....Atomic number
Xy.....Symbol
Atomname.....If written in black, the atom is usually produced synthetically.
MW.....Molecular weight (g/mol)
ox. no. .....Most common oxidation states
EN.....Electro negativity (pauling scale)
r_a.....atomic radius (pm)
r_i.....ionic radius (pm)
m.p. .....melting point (K)*
b.p. .....boiling point (K)*
p .....phases*: solid (**s**), liquid (**l**), gas (**g**)
Xy_n.....Elemntar form
$Xy^{+/-}$.....Ion corresponding to r_i
el. conf. .....electron configuration
abc.....crystal structure

*Values at STP (273.15 K,1 bar)

bcc: body centered cubic
cub: cubic
dhcp: double hexagonal close-packed
fcc: face-centered cubic
fcd: face-centered diamond-cubic
hcp: hexagonal closed-packed
hex: hexagonal
mon: monoclinic
ort: orthorhombic
rho: rhombohedral
she: simple hexagonal

Equations:
Concentration: $c = n/V$ [mol/L]
Amount of substance: n [mol]
Volume: V [L]
Particle number: $N = n \cdot N_a$
Pressure: p [Pa]
Ideal gas equation: $pV = nRT = NkBT$

Conversion factors:
1 µm = 10^{-6} m; 1 nm = 10^{-9} m; 1 Å (Angs.) = 10^{-10} m; 1 pm = 10^{-12} m; 1 fm = 10^{-15} m
1 bar = 10^5 N/m^2 = 10^5 Pa; 1 atm = 101325 Pa = 1.01325 bar
Torr = 1/760 atm = 1.333 mbar = 1 mmHg
1 L = 10^{-3} m^3 = 1 dm^3 = 10^3 cm^3 = 10^6 mm^3

Constants:

Avogadro number	N_a	=	6.022 141 79(30) • 10^{-23} mol^{-1}
Mass of proton	m_p	=	1.672 621 777(74) • 10^{-27} kg
Mass of electron	m_e	=	9.109 382 91(40) • 10^{-31} kg
Mass of neutron	m_n	=	1.674 927 351(74) • 10^{-27} kg
Standard temperature	T_s	=	273.15 K = 0 °C
Univaersal gas constant	R	=	8.314 472(15) J/(mol•K)
Boltzmann-constant	k_B	=	1.380 650 4(24) • 10^{-23} J/K
Speed of light	c	=	2.997 924 58 • 10^8 m/s
Eelementary charge	e	=	1.602 176 487(40) • 10^{-19} C
Planck constant	h	=	6.626 068 96 (33) • 10^{-34} J•s
	$\hbar = h/2\pi$	=	1.054 571 628(53) • 10^{-34} J•s
Unified atomic mass unit	1 u	=	1.660 538 921(73) • 10^{-27} kg

The unified atomic mass is equal to 1/12 of the mass of a single isolated C-atom.

REFERENCES:
[MW] Comission on Isotopic Abundancies and Atomic Weights, http://www.ciaaw.org/
[r_a] E. Clementi, D.L. Raimondi, W.P. Reinhardt, *J. Chem. Phys.*, **1967**, *47*, 1300-1307.
[r_i] R. D. Shannon, *Acta Cryst.*, **1976**, *A32*, 751-767 and https://en.wikipedia.org/wiki/ionic_radius.
[m.s., b.p., phases, cryst. struct., ox. no.] https://www.wikipedia.org
[EN] A. L. Allred, *J. Inorg. Nucl. Chem.*, **1961**, *17*, 215-221.
[Constants] http://physics.nist.gov/cuu/Constants/index.html

I–IA	II–IIA	III–IIIB	IV–IVB	V–VB	VI–VIB	VII–VIIB	VIII–VIIIB	VIII–VIIIB	VIII–VIIIB	I–IB	II–IIB	III–IIIB	IV–IVA	V–VA	VI–VIA	VII–VIIA	VIII–VIIIA
1 H							2 He					5 B	6 C	7 N	8 O	9 F	10 Ne
Hydrogen							Helium					Boron	Carbon	Nitrogen	Oxygen	Fluorine	Neon
1.00794							4.002602(2)					10.81	12.011	14.007	15.999	18.998403163	20.1797(6)
-1,1							-					3	-4,-3,-2,-1,1,2,3,4	-3,3,5	-2	-1	-
52.9/154 2.20							31/- n.a.					87/41 2.04	67/30 2.55	56/132/27 3.04	48/126 3.44	42/119 3.98	38/- n.a.
13.99/20.271							0.95/4.222					2349/4200	3915 (subl.)	63.15/77.355	54.36/90.188	53.48/85.03	24.56/27.104
g,H_2,H^- *hex*							g,He *hcp*					s,B_n,B^{3+} *rho*	s,C_n,C^{4+} *she,fcd*	g,N_2,N^{3-},N^{5+} *hex*	g,O_2,O^{2-} *cub*	g,F_2,F^- *cub*	g,Ne *fcc*
$1s^2$							$1s^2$					$1s^2 2s^2 p^1$	$1s^2 2s^2 p^2$	$1s^2 2s^2 p^3$	$1s^2 2s^2 p^4$	$1s^2 2s^2 p^5$	$1s^2 2s^2 p^6$
3 Li	4 Be											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
Lithium	Beryllium											Aluminium	Silicon	Phosphorous	Sulfur	Chlorine	Argon
6.941	9.0121831(5)											26.9815385(7)	28.085	30.973761998	32.06	35.45	39.948(1)
1	2											3	-4,4	-3,5	-2,2,4,6	-1,1,3,5,7	-
167/90 0.98	112/59 1.57											118/67.5 1.61	111/54 1.90	98/52 2.19	88/170 2.58	79/167 3.16	71/- n.a.
453.65/1603	1560/2742											933.47/2743	1687/3538	317/553 (white)	388.36/717.8	171.6/239.11	83.81/87.302
s,Li_n,Li^+ *bcc*	s,Be_n,Be^{2+} *hcp*											s,Al_n,Al^{3+} *fcc*	s,Si_n,Si^{4+} *fcd*	s,P_n,P^{5+} *bcc*	s,S_8,S^{2-} *ort*	g,Cl_2,Cl^- *ort*	g,Ar *fcc*
[He]$2s^1$	[He]$2s^2$											[Ne]$3s^2 p^1$	[Ne]$3s^2 p^2$	[Ne]$3s^2 p^3$	[Ne]$3s^2 p^4$	[Ne]$3s^2 p^5$	[Ne]$3s^2 p^6$
11 Na	12 Mg																
Sodium	Magnesium																
22.98976928(2)	24.305																
1	2																
190/116 0.93	145/86 1.31																
370.94/1156.09	923/1363																
s,Na_n,Na^+ *bcc*	s,Mg_n,Mg^{2+} *hcp*																
[Ne]$3s^1$	[Ne]$3s^2$																
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
Potassium	Calcium	Scandium	Titanium	Vanadium	Chromium	Manganese	Iron	Cobalt	Nickel	Copper	Zinc	Gallium	Germanium	Arsenic	Selenium	Bromine	Krypton
39.0983(1)	40.078(4)	44.955908(5)	47.867(1)	50.9415(1)	51.9961(6)	54.938044(3)	55.845(2)	58.933194(4)	58.6934(4)	63.546(3)	65.38(2)	69.723(1)	72.630(8)	74.921595(6)	78.971(8)	79.904	83.798(2)
1	2	3	4	5	3,6	2,4,7	2,3,6	2,3	2	2	2	3	-4,2,4	-3,3,5	-2,2,4,6	-1,1,3,5	2
243/152 0.82	194/114 1.00	184/88.5 1.36	176/74.5 1.54	171/68 1.63	166/58 1.66	161/60 1.55	156/39 1.83	152/68.5 1.88	149/83 1.91	145/87 1.90	142/88 1.65	136/76 1.81	125/67 2.01	114/72 2.18	103/184 2.55	94/182 2.96	88/- 3.00
336.7/1032	1115/1757	1814/3109	1941/3560	2183/3680	2180/2944	1519/2334	1811/3134	1768/3200	1728/3003	1357.77/2835	692.68/1180	302.91/2673	1211.40/3106	887 (subl.)	494/958	265.8/332.0	115.78/119.93
s,K_n,K^+ *bcc*	s,Ca_n,Ca^{2+} *fcc*	s,Sc_n,Sc^{3+} *hcp*	s,Ti_n,Ti^{4+} *hcp*	s,V_n,V^{5+} *bcc*	s,Cr_n,Cr^{6+} *bcc*	s,Mn_n,Mn^{7+} *bcc*	s,Fe_n,Fe^{6+} *bcc,fcc*	s,Co_n,Co^{3+} *hcp*	s,Ni_n,Ni^{2+} *fcc*	s,Cu_n,Cu^{2+} *fcc*	s,Zn_n,Zn^{2+} *hcp*	s,Ga_n,Ga^{3+} *ort*	s,Ge_n,Ge^{4+} *fcd*	s,As_n,As^{3+} *rho*	s,Se_8,Se^{2-} *hex*	l,Br_2,Br^- *ort*	g,Kr *fcc*
[Ar]$4s^1$	[Ar]$4s^2$	[Ar]$3d^1 4s^2$	[Ar]$3d^2 4s^2$	[Ar]$3d^3 4s^2$	[Ar]$3d^5 4s^1$	[Ar]$3d^5 4s^2$	[Ar]$3d^6 4s^2$	[Ar]$3d^7 4s^2$	[Ar]$3d^8 4s^2$	[Ar]$3d^{10} 4s^1$	[Ar]$3d^{10} 4s^2$	[Ar]$3d^{10} 4s^2 p^1$	[Ar]$3d^{10} 4s^2 p^2$	[Ar]$3d^{10} 4s^2 p^3$	[Ar]$3d^{10} 4s^2 p^4$	[Ar]$3d^{10} 4s^2 p^5$	[Ar]$3d^{10} 4s^2 p^6$
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
Rubidium	Strontium	Yttrium	Zirconium	Niobium	Molybdenum	Technetium	Ruthenium	Rhodium	Palladium	Silver	Cadmium	Indium	Tin	Antimony	Tellurium	Iodine	Xenon
85.4678(3)	87.62(1)	88.90584(2)	91.224(2)	92.90637(2)	95.95(1)	(98)	101.07(2)	102.90550(2)	106.42(1)	107.8682(2)	112.414(4)	114.818(1)	118.710(7)	121.760(1)	127.60(3)	126.90447(3)	131.293(6)
1	2	3	4	5	4,6	4,7	3,4	3	2,4	1	2	3	-4,2,4	-3,3,5	-2,2,4,6	-1,1,3,5,7	2,4,6
265/166 0.82	219/132 0.95	212/104 1.22	206/86 1.33	198/78 1.60	190/73 2.16	183/70 1.9	178/76 2.2	173/80.5 2.28	169/100 2.20	165/129 1.93	161/109 1.69	156/94 1.78	145/83 1.96	133/74 2.05	123/207 2.1	115/206 2.66	108 2.60
312.45/961	1050/1650	1799/3203	2128/4650	2750/5017	2896/4912	2430/4538	2607/4423	2237/3968	1828.05/3236	1234.93/2435	594.22/1040	429.75/2345	505.08/2875	903.73/1908	722.66/1261	386.85/457.4	161.40/165.051
s,Rb_n,Rb^+ *bcc*	s,Sr_n,Sr^{2+} *fcc*	s,Y_n,Y^{3+} *hcp*	s,Zr_n,Zr^{4+} *hcp*	s,Nb_n,Nb^{5+} *bcc*	s,Mo_n,Mo^{6+} *bcc*	s,Tc_n,Tc^{7+} *hcp*	s,Ru_n,Ru^{4+} *hcp*	s,Rh_n,Rh^{3+} *fcc*	s,Pd_n,Pd^{2+} *fcc*	s,Ag_n,Ag^{1+} *fcc*	s,Cd_n,Cd^{2+} *hcp*	s,In_n,In^{3+} *tet*	s,Sn_n,Sn^{4+}*tet,fcd*	s,Sb_n,Sb^{5+} *rho*	s,Te_n,Te^{2-} *hex*	s,I_2,I^- *ort*	g,Xe *fcc*
[Kr]$5s^1$	[Kr]$5s^2$	[Kr]$4d^1 5s^2$	[Kr]$4d^2 5s^2$	[Kr]$4d^4 5s^1$	[Kr]$4d^5 5s^1$	[Kr]$4d^5 5s^2$	[Kr]$4d^7 5s^1$	[Kr]$4d^8 5s^1$	[Kr]$4d^{10}$	[Kr]$4d^{10} 5s^1$	[Kr]$4d^{10} 5s^2$	[Kr]$4d^{10} 5s^2 p^1$	[Kr]$4d^{10} 5s^2 p^2$	[Kr]$4d^{10} 5s^2 p^3$	[Kr]$4d^{10} 5s^2 p^4$	[Kr]$4d^{10} 5s^2 p^5$	[Kr]$4d^{10} 5s^2 p^6$
55 Cs	56 Ba	57-71	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
Cesium	Barium		Hafnium	Tantalum	Tungsten	Rhenium	Osmium	Iridium	Platinum	Gold	Mercury	Thallium	Lead	Bismuth	Polonium	Astatine	Radon
132.90545196	137.327(7)		178.49(2)	180.94788(2)	183.84(1)	186.207(1)	190.23(3)	192.217(3)	195.084(9)	196.966569(5)	200.592(3)	204.38	207.2(1)	208.98040(1)	(209)	(210)	(222)
1	2		4	5	4,6	4	4	3,4	2,4	3	1,2	1,3	2,4	3	-2,2,4	-1,1	2
298/181 0.79	253/149 0.89		208/85 1.30	200/78 1.50	193/74 2.36	188/67 1.9	185/53 2.2	180/82 2.20	177/94 2.28	174/99 2.54	171/116 2.00	156/102.5 1.62	154/133 1.87	143/90 2.02	135/108 2.0	127/n.a. 2.2	120 2.2
301.7/944	1000/2118		2506/4876	3290/5731	3695/6203	3459/5869	3306/5285	2719/4403	2041.4/4098	1337.33/3243	234.3210/629.88	577/1746	600.61/2022	544.7/1837	527/1235	575/610	202/211.5
s,Cs_n,Cs^+ *bcc*	s,Ba_n,Ba^{2+} *bcc*		s,Hf_n,Hf^{4+} *hcp*	s,Ta_n,Ta^{5+} *bcc,tet*	s,W_n,W^{6+} *bcc*	s,Re_n,Re^{7+} *hcp*	s,Os_n,Os^{8+} *hcp*	s,Ir_n,Ir^{3+} *fcc*	s,Pt_n,Pt^{2+} *fcc*	s,Au_n,Au^{3+} *fcc*	l,Hg_n,Hg^{2+} *rho*	s,Tl_n,Tl^{3+} *hcp*	s,Pb_n,Pb^{2+} *fcc*	s,Bi_n,Bi^{5+} *rho*	s,Po_n,Po^{4+} *cub*	n.a.,n.a.,n.a. *fcc*	g,Rn *fcc*
[Xe]$6s^1$	[Xe]$6s^2$		[Xe]$4f^{14} 5d^2 6s^2$	[Xe]$4f^{14} 5d^3 6s^2$	[Xe]$4f^{14} 5d^4 6s^2$	[Xe]$4f^{14} 5d^5 6s^2$	[Xe]$4f^{14} 5d^6 6s^2$	[Xe]$4f^{14} 5d^7 6s^2$	[Xe]$4f^{14} 5d^9 6s^1$	[Xe]$4f^{14} 5d^{10} 6s^1$	[Xe]$4f^{14} 5d^{10} 6s^2$	[Xe]$4f^{14} 5d^{10} 6s^2 p^1$	[Xe]$4f^{14} 5d^{10} 6s^2 p^2$	[Xe]$4f^{14} 5d^{10} 6s^2 p^3$	[Xe]$4f^{14} 5d^{10} 6s^2 p^4$	[Xe]$4f^{14} 5d^{10} 6s^2 p^5$	[Xe]$4f^{14} 5d^{10} 6s^2 p^6$
87 Fr	88 Ra	89-103	104 Rf	105Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Nh	114 Fl	115 Mc	116 Lv	117 Ts	118 Og
Francium	Radium		Rutherfordium	Dubnium	Seaborgium	Bohrium	Hassium	Meitnerium	Darmstadtium	Roentgenium	Copernicium	Nihonium	Flerovium	Moscovium	Livermorium	Tennessine	Oganesson
(223)	(226)		(267)	(268)	(269)	(270)	(269)	(278)	(281)	(282)	(285)	(286)	(289)	(289)	(293)	(294)	(294)
1	2		4	5	6	7	8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a./n.a. 0.7	n.a./162 0.90		n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.	n.a./n.a. n.a.
n.a./n.a.	973/2010		2400/5800	n.a./n.a.	n.a./n.a.	n.a./n.a.	n.a./n.a.	n.a./n.a.	n.a./n.a.	1814/3109	700/1430	340/420	670/1400	n.a./n.a.	n.a./n.a.	n.a./n.a.	n.a./n.a.
n.a.,n.a.,n.a. *bcc*	s,Ra_n,Ra^{2+} *bcc*		s,n.a.,n.a. *hcp*	s,n.a.,n.a. *bcc*	s,n.a.,n.a. *bcc*	s,n.a.,n.a. *hcp*	s,n.a.,n.a. *hcp*	s,n.a.,n.a. *fcc*	s,n.a.,n.a. *bcc*	s,n.a.,n.a. *bcc*	n.a.,n.a.,n.a. *hcp*	s,n.a.,n.a. *hcp*	s,n.a.,n.a. *n.a.*	s,n.a.,n.a. *n.a.*	s,n.a.,n.a. *n.a.*	s,n.a.,n.a. *n.a.*	s,n.a.,n.a. *n.a.*
[Rn]$7s^1$	[Rn]$7s^2$		[Rn]$5f^{14} 6d^2 7s^2$	[Rn]$5f^{14} 6d^3 7s^2$	[Rn]$5f^{14} 6d^4 7s^2$	[Rn]$5f^{14} 6d^5 7s^2$	[Rn]$5f^{14} 6d^6 7s^2$	[Rn]$5f^{14} 6d^7 7s^2$	[Rn]$5f^{14} 6d^8 7s^2$	[Rn]$5f^{14} 6d^9 7s^2$	[Rn]$5f^{14} 6d^{10} 7s^2$	[Rn]$5f^{14} 6d^{10} 7s^2 p^1$	[Rn]$5f^{14} 6d^{10} 7s^2 p^2$	[Rn]$5f^{14} 6d^{10} 7s^2 p^3$	[Rn]$5f^{14} 6d^{10} 7s^2 p^4$	[Rn]$5f^{14} 6d^{10} 7s^2 p^5$	[Rn]$5f^{14} 6d^{10} 7s^2 p^6$

57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
Lanthanum	Cerium	Praseodymium	Neodymium	Promethium	Samarium	Europium	Gadolinium	Terbium	Dysprosium	Holmium	Erbium	Thulium	Ytterbium	Lutetium
138.90547(7)	140.116(1)	140.90766(2)	144.242(3)	(145)	150.36(2)	151.964(1)	157.25(3)	158.92535(2)	162.500 (1)	164.93033(2)	167.259(3)	168.93422(2)	173.045(10)	174.9668(1)
3	3,4	3	3	3	3	2,3	3	3	3	3	3	3	3	3
n.a./117.2 1.1	n.a./101 1.12	n.a./113 1.13	n.a./112.3 1.14	n.a./111 1.13	n.a./109.8 1.17	n.a./108.7 1.2	n.a./107.8 1.2	n.a./106.3 1.1	n.a./105.2 1.22	n.a./104.1 1.23	n.a./103 1.24	n.a./102 1.25	n.a./100.8 1.1	n.a./100.1 1.27
1193/3737	1068/3716	1208/3403	1297/3347	1315/3273	1345/2173	1099/1802	1585/3273	1629/3396	1680/2840	1734/2873	1802/3141	1818/2223	1097/1469	1925/3675
s,La_n,La^{3+} *dhcp*	s,Ce_n,Ce^{4+} *dhcp*	s,Pr_n,Pr^{3+} *dhcp*	s,Nd_n,Nd^{3+} *dhcp*	s,Pm_n,Pm^{3+}*dhcp*	s,Sm_n,Sm^{3+} *rho*	s,Eu_n,Eu^{3+} *bcc*	s,Gd_n,Gd^{3+} *hcp*	s,Tb_n,Tb^{3+} *hcp*	s,Dy_n,Dy^{3+} *hcp*	s,Ho_n,Ho^{3+} *hcp*	s,Er_n,Er^{3+} *hcp*	s,Tm_n,Tm^{3+} *hcp*	s,Yb_n,Yb^{3+} *fcc*	s,Lu_n,Lu^{3+} *hcp*
[Xe]$5d^1 6s^2$	[Xe]$4f^1 5d^1 6s^2$	[Xe]$4f^3 6s^2$	[Xe]$4f^4 6s^2$	[Xe]$4f^5 6s^2$	[Xe]$4f^6 6s^2$	[Xe]$4f^7 6s^2$	[Xe]$4f^7 5d^1 6s^2$	[Xe]$4f^9 6s^2$	[Xe]$4f^{10} 6s^2$	[Xe]$4f^{11} 6s^2$	[Xe]$4f^{12} 6s^2$	[Xe]$4f^{13} 6s^2$	[Xe]$4f^{14} 6s^2$	[Xe]$4f^{14} 5d^1 6s^2$
89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100Fm	101Md	102No	103 Lr
Actinium	Thorium	Protactinium	Uranium	Neptunium	Plutonium	Americium	Curium	Berkelium	Californium	Einsteinium	Fermium	Mendelevium	Nobelium	Lawrencium
(227)	232.0377(4)	231.03588(2)	238.02891(3)	(237)	(244)	(243)	(247)	(247)	(251)	(252)	(257)	(258)	(259)	(266)
3	4	5	6	5	4	3	3	3	3	3	3	3	2	3
n.a./126 1.1	n.a./108 1.3	n.a./104 1.5	n.a./103 1.38	n.a./89 1.36	n.a./100 1.28	n.a./111.5 1.13	n.a./99 1.28	n.a./110 1.3	n.a./109 1.3	n.a./92.8 1.3	n.a./n.a. 1.3	n.a./n.a. 1.3	n.a./n.a. 1.3	n.a./n.a. 1.3
n.a./n.a.	2023/5061.	1841/4300	1405.3/4404	912/4447	912.5/3505	1449/2880	1613/3383	1259/2900	1173/1743	1133/1499	1800/n.a.	1100/n.a.	1100/n.a.	1900/n.a.
s,Ac_n,Ac^{3+} *fcc*	s,Th_n,Th^{4+} *fcc*	s,Pa_n,Pa^{4+} *tet*	s,U_n,U^{4+} *ort*	s,Np_n,Np^{5+} *ort*	s,Pu_n,Pu^{4+} *mon*	s,Am_n,Am^{3+}*dhcp*	s,Cm_n,Cm^{4+}*dhcp*	s,Bk_n,Bk^{3+} *dhcp*	s,Cf_n,Cf^{3+} *dhcp*	s,Es_n,Es^{2+} *fcc*	s,n.a.,n.a. *n.a.*	s,n.a.,n.a. *n.a.*	s,n.a.,n.a. *n.a.*	s,n.a.,n.a. *n.a.*
[Rn]$6d^1 7s^2$	[Rn]$6d^2 7s^2$	[Rn]$5f^2 6d^1 7s^2$	[Rn]$5f^3 6d^1 7s^2$	[Rn]$5f^4 6d^1 7s^2$	[Rn]$5f^6 7s^2$	[Rn]$5f^7 7s^2$	[Rn]$5f^7 6d^1 7s^2$	[Rn]$5f^9 7s^2$	[Rn]$5f^{10} 7s^2$	[Rn]$5f^{11} 7s^2$	[Rn]$5f^{12} 7s^2$	[Rn]$5f^{13} 7s^2$	[Rn]$5f^{14} 7s^2$	[Rn]$5f^{14} 7s^2 7p^1$

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