

Petrucci's

GENERAL CHEMISTRY

Principles and Modern Applications

TWELFTH EDITION

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Periodic Table of the Elements†

1	1																18	
	1A																8A	
2	1	2															10	Ne
	3	4															9	F
3	11	12															17	Cl
	19	20	21	22	23	24	25	26	27	28	29	30					35	Br
4	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	I
	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	At
5	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	Po
	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	Bi
6	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	Pb
	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	Tl
7	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	Pt
	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	Au
																		Hg
																		Ag
																		Pd
																		Rh
																		Ru
																		Fe
																		Co
																		Ni
																		Cu
																		Zn
																		Ga
																		Ge
																		As
																		Se
																		Br
																		Kr
																		Sr
																		Y
																		Zr
																		Nb
																		Ta
																		Hf
																		La-Lu
																		Ba
																		Cs
																		Rb
																		K
																		Ca
																		Mg
																		Al
																		Si
																		P
																		S
																		O
																		N
																		C
																		B
																		He

*Lanthanide series	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
	138.91	140.12	140.91	144.24	(145)	150.36	151.96	157.25	158.93	162.50	164.93	167.26	168.93	173.01	174.97
†Actinide series	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103
	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr
	(227)	232.04	231.04	238.03	(237)	(244)	(243)	(247)	(247)	(251)	(252)	(257)	(258)	(259)	(262)

Atomic masses are relative to carbon-12. For certain radioactive elements, the numbers listed (in parentheses) are the mass numbers of the most stable isotopes. The scheme for numbering of groups is explained on page 80. The metals are and the nonmetals are . Metalloids are indicated by . The noble gases are .

†Based on the version endorsed by the International Union of Pure and Applied Chemistry (IUPAC) on May 4, 2022.

Notes:

1. Atomic masses are from Pure Appl. Chem. Vol. 85, No. 5, pp. 1047–1078, 2013. They are given here with five significant figures where possible.
2. For H, Li, B, C, N, O, Mg, Si, S, Cl, Br, and Tl, the *conventional atomic mass*, a representative value from the *atomic mass interval*, is provided. (See page 77.)

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Copyright

Dedication

Pearsons Commitment to Diversity, Equity, and Inclusion

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