

PERIODIC TABLE OF THE ELEMENTS (LONG FORM)

1

IA

Atomic number – 1

±1

120

-259.3

0.08988

Hydrogen

1s¹

1.008

2.2

13.598

-252.9

1400

H

Hydrogen

Atomic mass (u)

Electronegativity (Pauling scale)

First ionization energy (eV)

Boiling point (°C)

Natural abundance in the Earth's crust and oceans (ppm)

Crystal structure

Alkali metals

Alkali earth metals

Lanthanides

Actinides

Transition metals

Post-transition metals

Semimetals

Nonmetals

Halogens

Noble gasses

Black symbols show solid elements

Blue symbols show liquid elements

Red symbols show gaseous elements

Magenta symbols show synthetic elements

☼ marks radioactive elements

"—" marks no data

Cubic

Tetragonal

Orthorhombic

Rhombohedral

Monoclinic

Hexagonal

13

IIIA

14

IVA

15

VA

16

VIA

17

VIIA

18

VIIIA

5

10.81

+3

192

2075

2370

B

Boron

(He)2s²2p¹

6

12.011

+4, +2

170

3550

2267

C

Carbon

(He)2s²2p²

7

14.007

+5, +4, ±3, ±2, ±1

255

1510

200

N

Nitrogen

(He)2s²2p³

8

15.999

-2

152

3265

461000

O

Oxygen

(He)2s²2p⁴

9

18.9984

-1

135

-219.6

1.696

F

Flourine

(He)2s²2p⁵

10

20.18

0

154

-188.1

585

Ne

Neon

(He)2s²2p⁶

13

26.9815

+3

184

660

2700

Al

Aluminium

(Ne)3s²3p¹

14

28.085

+4, +2

161

5986

82300

Si

Silicon

(Ne)3s²3p²

15

30.9738

+5, ±3

180

4415

1820

P

Phophorus

(Ne)3s²3p³

16

32.07

+6, +4, -2

180

280.5

1050

S

Sulphur

(Ne)3s²3p⁴

17

35.45

+7, +5, ±1

175

-101.5

350

Cl

Chlorine

(Ne)3s²3p⁵

18

39.9

0

188

-189.3

145

Ar

Argon

(Ne)3s²3p⁶

19

39.0983

+1

275

63.38

890

K

Potassium

(Ar)4s¹

20

40.08

+2

231

759

1540

Ca

Calcium

(Ar)4s²

37

85.468

+1

303

39.31

1530

Rb

Rubidium

(Kr)5s¹

38

87.62

+2

249

688

2640

Sr

Strontium

(Kr)5s²

55

132.905

+1

343

28.44

1930

Cs

Cesium

(Xe)6s¹

56

137.33

+2

268

727

3620

Ba

Barium

(Xe)6s²

71

174.967

+3

221

1663

9840

Lu

Lutetium

(Xe)6s²4f¹⁴5d¹

72

178.49

+4

212

3402

13300

Hf

Hafnium

(Xe)6s²4f¹⁴5d²

73

180.948

+5

217

4603

16400

Ta

Tantalum

(Xe)6s²4f¹⁴5d³

74

183.84

+6

210

5458

19300

W

Tungsten

(Xe)6s²4f¹⁴5d⁴

75

186.207

+7, +6, +4

216

7.98

20800

Re

Rhenium

(Xe)6s²4f¹⁴5d⁵

76

190.2

+4, +3

216

8.7

22570

Os

Osmium

(Xe)6s²4f¹⁴5d⁶

77

192.22

+4, +3

202

9.1

22420

Ir

Iridium

(Xe)6s²4f¹⁴5d⁷

78

195.08

+4, +2

201

9.209

21460

Pt

Platinum

(Xe)6s²4f¹⁴5d⁹

79

196.967

+3, +1

166

9.226

19282

Au

Gold

(Xe)6s¹4f¹⁴5d¹⁰

80

200.59

+2, +1

209

10.438

13534

Hg

Mercury

(Xe)6s²4f¹⁴5d¹⁰

81

204.383

+3, +1

202

6.108

11800

Tl

Thallium

(Xe)6s²4f¹⁴5d¹⁰6p¹

82

207

+4, +2

207

7.417

11342

Pb

Lead

(Xe)6s²4f¹⁴5d¹⁰6p²

83

208.98

+5, +3

207

7.289

9807

Bi

Bismuth

(Xe)6s²4f¹⁴5d¹⁰6p³

84

208.982

+4, +2

197

8.417

9320

Po

Polonium

(Xe)6s²4f¹⁴5d¹⁰6p⁴

85

209.987

+7, +5, ±1

202

8.417

7000

At

Astatine

(Xe)6s²4f¹⁴5d¹⁰6p⁵

86

222.018

+2

198

9.5

3620

Rn

Radon

(Xe)6s²4f¹⁴5d¹⁰6p⁶

87

223.02

☼

+1

348

26.85

—

Fr

Francium

(Rn)7s¹

88

226.025

☼

+2

283

700

5000

Ra

Radium

(Rn)7s²

103

266.12

☼

+3

—

—

—

Lr

Lawrencium

(Rn)7s²5f¹⁴6d¹

104

267.122

☼

+4

—

—

—

Rf

Rutherfordium

(Rn)7s²5f¹⁴6d²

105

268.126

☼

+5, +4, +3

—

—

—

Db

Dubnium

(Rn)7s²5f¹⁴6d³

106

269.128

☼

+6, +5, +4, +3, 0

—

—

—

Sg

Seaborgium

(Rn)7s²5f¹⁴6d⁴

107

270.133

☼

+7, +5, +4, +3

—

—

—

Bh

Bohrium

(Rn)7s²5f¹⁴6d⁵

108

269.134

☼

+8, +6, +5, +4, +3, +2

—

—

—

Hs

Hassium

(Rn)7s²5f¹⁴6d⁶

109

277.154

☼

+9, +8, +6, +4, +3, +1

—

—

—

Mt

Meitnerium

(Rn)7s²5f¹⁴6d⁷

110

282.166

☼

+8, +6, +4, +2, 0

—

—

—

Ds

Darmastadtium

(Rn)7s²5f¹⁴6d⁹

111

282.169

☼

+5, +3, ±1

—

—

—

Rg

Roentgenium

(Rn)7s²5f¹⁴6d¹⁰

112

286.179

☼

+2, +1, 0

—

—

—

Cn

Copernicium

(Rn)7s²5f¹⁴6d¹⁰

113

286.182

☼

—

—

—

Nh

Nihonium

(Rn)7s²5f¹⁴6d¹⁰7p¹

114

290.192

☼

+6, +4, +2, +1, 0

—

—

—

Fl

Flerovium

(Rn)7s²5f¹⁴6d¹⁰7p²

115

290.196

☼

+3, +1

—

—

—

Mc

Moscovium

(Rn)7s²5f¹⁴6d¹⁰7p³

116

293.205

☼

+4, ±2

—

—

—

Lv

Livermorium

(Rn)7s²5f¹⁴6d¹⁰7p⁴

117

294.211

☼

+5, +3, ±1

—

—

—

Ts

Tennessine

(Rn)7s²5f¹⁴6d¹⁰7p⁵

118

295.216

☼

+6, +4, +2, ±1, 0

—

—

—

Og

Oganesson

(Rn)7s²5f¹⁴6d¹⁰7p⁶

← Group

↓ Period

1

2

3

4

5

6

7

f - block (inner - transition) elements														
57 +3 240 6150 La Lanthanum (Xe)6s ² 5d ¹	58 +4, +3 138.905 1.1 5.577 235 39 Ce Cerium (Xe)6s ² 4f ¹ 5d ¹	59 +3 140.116 1.12 5.539 239 66.5 Pr Praseodymium (Xe)6s ² 4f ³	60 +3 140.908 1.13 5.525 236 9.2 Nd Neodymium (Xe)6s ² 4f ⁴	61 +3 144.24 1.14 5.525 236 1042 61 Pm Promethium (Xe)6s ² 4f ⁵	62 +3, +2 150.4 1.17 5.55 3000 7520 Sm Samarium (Xe)6s ² 4f ⁶	63 +3, +2 151.964 1.17 5.525 236 2 Eu Europium (Xe)6s ² 4f ⁷	64 +3 157.2 1.2 6.15 221 7900 Gd Gadolinium (Xe)6s ² 4f ⁷ 5d ¹	65 +3 158.925 1.2 6.15 221 8230 Tb Terbium (Xe)6s ² 4f ⁹	66 +3 162.5 1.22 5.939 216 8550 Dy Dysprosium (Xe)6s ² 4f ¹⁰	67 +3 164.93 1.23 6.022 235 9070 Ho Holmium (Xe)6s ² 4f ¹¹	68 +3 167.26 1.24 6.108 227 3.5 Er Erbium (Xe)6s ² 4f ¹²	69 +3 168.934 1.25 6.184 242 0.52 Tm Thulium (Xe)6s ² 4f ¹³	70 +3, +2 173.05 — 6.254 1196 3.2 Yb Ytterbium (Xe)6s ² 4f ¹⁴	
89 +3 260 1051 10070 Ac Actinium (Rn)7s ² 6d ¹	90 +4 227.028 0.7 5.17 237 6E-13 Th Thorium (Rn)7s ² 6d ²	91 +5, +4 231.036 0.9 6.08 243 9.6 Pa Protactinium (Rn)7s ² 5f ² 6d ¹	92 +6, +5, +4, +3 238.029 1.3 6.194 221 18950 U Uranium (Rn)7s ² 5f ³ 6d ¹	93 +6, +5, +4, +3 237.048 1.5 6.266 243 2.7 Np Neptunium (Rn)7s ² 5f ⁴ 6d ¹	94 +6, +5, +4, +3 244.064 1.38 6.06 244 19840 Pu Plutonium (Rn)7s ² 5f ⁶	95 +6, +5, +4, +3 243.061 1.36 5.993 245 — Am Americium (Rn)7s ² 5f ⁷	96 +3 247.07 1.28 6.02 244 — Cm Curium (Rn)7s ² 5f ⁶ 6d ¹	97 +4, +3 247.07 1.3 6.23 245 14000 Bk Berkelium (Rn)7s ² 5f ⁹	98 +3 251.08 1.3 6.3 245 — Cf Californium (Rn)7s ² 5f ¹⁰	99 +3 252.083 1.3 6.42 245 — Es Einsteinium (Rn)7s ² 5f ¹¹	100 +3 257.098 6.5 — — Fm Fermium (Rn)7s ² 5f ¹²	101 +3, +2 258.098 1.3 6.58 — Md Mendelevium (Rn)7s ² 5f ¹³	102 +3, +2 259.101 1.3 6.65 — No Nobelium (Rn)7s ² 5f ¹⁴	