

PLEASE DO NOT WRITE ON THIS SHEET!
TURN IT IN WHEN YOU TURN IN YOUR TEST. THANK YOU!

Latin Prefixes:

- 1 = mono
- 2 = di
- 3 = tri
- 4 = tetra
- 5 = penta
- 6 = hexa
- 7 = hepta
- 8 = octa
- 9 = nona
- 10 = deca

Activity Series

- Li
- K
- Ba
- Sr
- Ca
- Na
- Mg
- Al
- H(H₂O)
- Zn
- Cr
- Fe
- Co
- Ni
- Sn
- Pb
- H(acid)
- Cu
- Ag
- Hg
- Pt
- Au

Activity Series

- F₂
- Cl₂
- Br₂
- I₂



$h = 6.63 \times 10^{-34} \text{ Js}$
1 mole = 6.02 x 10²³

Metric Prefix	Symbol	Meaning
Mega-	M	10 ⁶
kilo-	k	10 ³
deci-	d	10 ⁻¹
centi-	c	10 ⁻²
milli-	m	10 ⁻³
micro-	μ	10 ⁻⁶
nano-	n	10 ⁻⁹

Other Conversions

- 1 inch = 2.54 cm (exactly)
- 1 foot = 12 inches (exactly)
- 1 hour = 60 minutes (exactly)
- 1 minute = 60 seconds (exactly)
- 1 mile = 5280. feet
- 1 mile = 1.61 km
- 1 pound = 453.6 grams
- 1 mL = 1 cm³ (exactly)

Hydrogen 1 H 1.0079																										8A (18) Helium 2 He 4.0026
1A (1)		2A (2)												3A (13)	4A (14)	5A (15)	6A (16)	7A (17)								
Lithium 3 Li 6.941	Beryllium 4 Be 9.0122											Boron 5 B 10.811	Carbon 6 C 12.011	Nitrogen 7 N 14.0067	Oxygen 8 O 15.9994	Fluorine 9 F 18.9984	Neon 10 Ne 20.1797									
Sodium 11 Na 22.9898	Magnesium 12 Mg 24.3050											Aluminum 13 Al 26.9815	Silicon 14 Si 28.0855	Phosphorus 15 P 30.9738	Sulfur 16 S 32.066	Chlorine 17 Cl 35.4527	Argon 18 Ar 39.948									
Potassium 19 K 39.0983	Calcium 20 Ca 40.078	Scandium 21 Sc 44.9559	Titanium 22 Ti 47.867	Vanadium 23 V 50.9415	Chromium 24 Cr 51.9961	Manganese 25 Mn 54.9380	Iron 26 Fe 55.845	Cobalt 27 Co 58.9332	Nickel 28 Ni 58.6934	Copper 29 Cu 63.546	Zinc 30 Zn 65.38	Gallium 31 Ga 69.723	Germanium 32 Ge 72.61	Arsenic 33 As 74.9216	Selenium 34 Se 78.96	Bromine 35 Br 79.904	Krypton 36 Kr 83.80									
Rubidium 37 Rb 85.4678	Strontium 38 Sr 87.62	Yttrium 39 Y 88.9059	Zirconium 40 Zr 91.224	Niobium 41 Nb 92.9064	Molybdenum 42 Mo 95.96	Technetium 43 Tc (97.907)	Ruthenium 44 Ru 101.07	Rhodium 45 Rh 102.9055	Palladium 46 Pd 106.42	Silver 47 Ag 107.8682	Cadmium 48 Cd 112.411	Indium 49 In 114.818	Tin 50 Sn 118.710	Antimony 51 Sb 121.760	Tellurium 52 Te 127.60	Iodine 53 I 126.9045	Xenon 54 Xe 131.29									
Cesium 55 Cs 132.9055	Barium 56 Ba 137.327	Lanthanum 57 La 138.9055	Hafnium 72 Hf 178.49	Tantalum 73 Ta 180.9479	Tungsten 74 W 183.84	Rhenium 75 Re 186.207	Osmium 76 Os 190.23	Iridium 77 Ir 192.22	Platinum 78 Pt 195.084	Gold 79 Au 196.9666	Mercury 80 Hg 200.59	Thallium 81 Tl 204.3833	Lead 82 Pb 207.2	Bismuth 83 Bi 208.9804	Polonium 84 Po (208.98)	Astatine 85 At (209.99)	Radon 86 Rn (222.02)									
Francium 87 Fr (223.02)	Radium 88 Ra (226.0254)	Actinium 89 Ac (227.0278)	Rutherfordium 104 Rf (267)	Dubnium 105 Db (268)	Seaborgium 106 Sg (271)	Bohrium 107 Bh (272)	Hassium 108 Hs (270)	Meitnerium 109 Mt (276)	Darmstadtium 110 Ds (281)	Roentgenium 111 Rg (280)	Copernicium 112 Cn (285)	Ununtrium 113 Uut Discovered 2004	Ununquadium 114 Uuq Discovered 1999	Ununpentium 115 Uup Discovered 2004	Ununhexium 116 Uuh Discovered 1999	Ununseptium 117 Uus Discovered 2010	Ununoctium 118 Uuo Discovered 2002									

Cerium 58 Ce 140.116	Praseodymium 59 Pr 140.9076	Neodymium 60 Nd 144.242	Promethium 61 Pm (144.91)	Samarium 62 Sm 150.36	Europium 63 Eu 151.964	Gadolinium 64 Gd 157.25	Terbium 65 Tb 158.9254	Dysprosium 66 Dy 162.50	Holmium 67 Ho 164.9303	Erbium 68 Er 167.26	Thulium 69 Tm 168.9342	Ytterbium 70 Yb 173.054	Lutetium 71 Lu 174.9668
Thorium 90 Th 232.0381	Protactinium 91 Pa 231.0359	Uranium 92 U 238.0289	Neptunium 93 Np (237.0482)	Plutonium 94 Pu (244.064)	Americium 95 Am (243.061)	Curium 96 Cm (247.07)	Berkelium 97 Bk (247.07)	Californium 98 Cf (251.08)	Einsteinium 99 Es (252.08)	Fermium 100 Fm (257.10)	Mendelevium 101 Md (258.10)	Nobelium 102 No (259.10)	Lawrencium 103 Lr (262.11)

Table of Common Ions !

Cations

Al ⁺³	aluminum
NH ₄ ⁺¹	ammonium
Sb ⁺³	antimony
Ba ⁺²	barium
Bi ⁺³	bismuth
Cd ⁺²	cadmium
Ca ⁺²	calcium
Cr ⁺²	chromium II (chromous)
Cr ⁺³	chromium III (chromic)
Co ⁺²	cobalt
Cu ⁺¹	copper I (cuprous)
Cu ⁺²	copper II (cupric)
Au ⁺¹	gold I (aurous)
H ⁺¹	hydrogen
H ₃ O ⁺¹	hydronium
Fe ⁺²	iron II (ferrous)
Fe ⁺³	iron III (ferric)
Pb ⁺²	lead II (plumbous)
Pb ⁺⁴	lead IV (plumbic)
Li ⁺¹	lithium
Mg ⁺²	magnesium
Mn ⁺²	manganese II (manganous)
Mn ⁺³	manganese III (manganic)
Hg ₂ ⁺²	mercury I (mercurous)
Hg ⁺²	mercury II (mercuric)
Ni ⁺²	nickel
K ⁺¹	potassium
Ag ⁺¹	silver
Na ⁺¹	sodium
Sr ⁺²	strontium
Sn ⁺²	tin II (stannous)
Sn ⁺⁴	tin IV (stannic)
Zn ⁺²	zinc

Anions (monoatomic)

Br ⁻¹	bromide
Cl ⁻¹	chloride
F ⁻¹	fluoride
H ⁻¹	hydride
I ⁻¹	iodide
N ⁻³	nitride
O ⁻²	oxide
P ⁻³	phosphide
S ⁻²	sulfide

Anions (polyatomic)

C ₂ H ₃ O ₂ ⁻¹	acetate
AsO ₄ ⁻³	arsenate
HCO ₃ ⁻¹	bicarbonate
HSO ₄ ⁻¹	bisulfate
HSO ₃ ⁻¹	bisulfite
BO ₃ ⁻³	borate
BrO ₃ ⁻¹	bromate
BrO ₂ ⁻¹	bromite
CO ₃ ⁻²	carbonate
ClO ₃ ⁻¹	chlorate
ClO ₂ ⁻¹	chlorite
CrO ₄ ⁻²	chromate
CN ⁻¹	cyanide
OCN ⁻¹	cyanate
Cr ₂ O ₇ ⁻²	dichromate
OH ⁻¹	hydroxide
BrO ⁻¹	hypobromite
ClO ⁻¹	hypochlorite
NO ₃ ⁻¹	nitrate
NO ₂ ⁻¹	nitrite
C ₂ O ₄ ⁻²	oxalate
ClO ₄ ⁻¹	perchlorate
MnO ₄ ⁻¹	permanganate
O ₂ ⁻²	peroxide
PO ₄ ⁻³	phosphate
SiO ₃ ⁻²	silicate
SO ₄ ⁻²	sulfate
SO ₃ ⁻²	sulfite
SCN ⁻¹	thiocyanate
S ₂ O ₃ ⁻²	thiosulfate

Negative Ions (Anions)	+	Positive Ions (Cations)	→	Compounds with the Solubility:
Essentially all		Alkali ions (Li ⁺ , Na ⁺ , K ⁺ , Rb ⁺ , Cs ⁺ , Fr ⁺)		soluble
Essentially all		hydrogen ion [H ⁺ (aq)]		soluble
Essentially all		ammonium ion (NH ₄ ⁺)		soluble
Nitrate, NO ₃ ⁻		essentially all		soluble
Acetate, CH ₃ COO ⁻ / C ₂ H ₃ O ₂ ⁻¹		essentially all		soluble
Chloride, Cl ⁻ Bromide, Br ⁻ Iodide, I ⁻	}	Ag ⁺ , Pb ²⁺ , Hg ₂ ²⁺ , Cu ⁺ Tl ⁺		NOT soluble
		all others (including Cu ⁺²)		soluble
Sulfate, SO ₄ ²⁻		Ca ²⁺ , Sr ²⁺ , Ba ²⁺ , Pb ²⁺ Ra ²⁺		NOT soluble
		all others		soluble
Sulfide, S ²⁻		alkali ions, H ⁺ (aq), NH ₄ ⁺ , Be ²⁺ , Mg ²⁺ , Ca ²⁺ , Sr ²⁺ , Ba ²⁺ , Ra ²⁺		soluble
		all others		NOT soluble
Hydroxide, OH ⁻		alkali ions, H ⁺ (aq), NH ₄ ⁺ Sr ²⁺ , Ba ²⁺ , Ra ²⁺ , Tl ⁺		soluble
		all others		NOT soluble
Phosphate, PO ₄ ³⁻ Carbonate, CO ₃ ²⁻ Sulfite, SO ₃ ²⁻	}	alkali ions, H ⁺ (aq), NH ₄ ⁺		soluble
		all others		NOT soluble

* "Soluble" means that at least 0.10 mole of compound can dissolve per liter of solution.

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