

UNIT 3.5:

NAMING MATTER

Topics Covered:

- Introduction to Nomenclature
- Monatomic Ions
- Polyatomic Ions
- Polyvalent Ions
- Covalent Compounds

UNIT OBJECTIVES

- Name inorganic ionic and molecular compounds

INTRODUCTION TO NOMENCLATURE

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Common names:

SUGAR

WATER

SALT

Milk of Magnesia

VINEGAR

*Does not tell us anything about the compound



INTRODUCTION TO NOMENCLATURE

Metals

Nonmetals

Key

11	Atomic number
Na	Element symbol
Sodium	Element name
22.99	Average atomic mass*

1 1A H Hydrogen 1.01	2 2A											13 3A B Boron	14 4A C Carbon 12.01	15 5A N Nitrogen 14.01	16 6A O Oxygen 16.00	17 7A F Fluorine 19.00	18 8A He Helium 4.00
3 Li Lithium 6.94	4 Be Beryllium 9.01											5 Al Aluminum 26.98	6 Si Silicon 28.09	7 P Phosphorus 30.97	8 S Sulfur 32.07	9 Cl Chlorine 35.45	10 Ar Argon 39.95
11 Na Sodium 22.99	12 Mg Magnesium	3 3B	4 4B	5 5B	6 6B	7 7B	8	9	10	11 1B	12 2B	13 3A	14 4A	15 5A	16 6A	17 7A	18 8A
19 K Potassium 39.10	20 Ca Calcium 40.08	21 Sc Scandium 44.96	22 Ti Titanium 47.87	23 V Vanadium 50.94	24 Cr Chromium 52.00	25 Mn Manganese 54.94	26 Fe Iron 55.85	27 Co Cobalt 58.93	28 Ni Nickel 58.69	29 Cu Copper 63.55	30 Zn Zinc 65.39	31 Ga Gallium 69.72	32 Ge Germanium 72.61	33 As Arsenic	34 Se Selenium 78.96	35 Br Bromine 79.90	36 Kr Krypton 83.80
37 Rb Rubidium 85.47	38 Sr Strontium 87.62	39 Y Yttrium 88.91	40 Zr Zirconium 91.22	41 Nb Niobium 92.91	42 Mo Molybdenum 95.94	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.91	46 Pd Palladium 106.42	47 Ag Silver 107.87	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.71	51 Sb Antimony 121.76	52 Te Tellurium	53 I Iodine 126.90	54 Xe Xenon 131.29
55 Cs Cesium 132.91	56 Ba Barium 137.33	57 La Lanthanum 138.91	72 Hf Hafnium 178.49	73 Ta Tantalum 180.95	74 W Tungsten 183.84	75 Re Rhenium 186.21	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.97	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)
87 Fr Francium (223)	88 Ra Radium (226)	89 Ac Actinium (227)	104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (266)	107 Bh Bohrium (264)	108 Hs Hassium (269)	109 Mt Meitnerium (268)									

58 Ce Cerium 140.12	59 Pr Praseodymium 140.91	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.93	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.97
90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (262)

* If this number is in parentheses, then it refers to the atomic mass of the most stable isotope.

INTRODUCTION TO NOMENCLATURE

Binary Compounds: Contain 2 elements

1. Metal + Nonmetal \curvearrowright Ionic

2. Nonmetal + Nonmetal \curvearrowright Covalent

INTRODUCTION TO NOMENCLATURE

Classify the type of binary compound:

