

CH 1

- Intensive properties: do not depend on the amount of sample
 - Temp, MP
- Extensive Properties: Do depend on the amount of sample
 - Length, volume
- Physical Properties: characteristics that do not involve a change in chemical make up
- Chemical Properties: characteristics that do involve a change in chemical make up
- Celsius -> Fahrenheit
 - $^{\circ}\text{F} = (9^{\circ}\text{F}/5^{\circ}\text{C}) * ^{\circ}\text{C} + 32$
- Fahrenheit -> Celsius
 - $^{\circ}\text{C} = (5^{\circ}\text{C}/9^{\circ}\text{F}) (^{\circ}\text{F} - 32^{\circ}\text{F})$
- Celsius -> Kelvin
 - $^{\circ}\text{C} + 273\text{K}$
- Remember: Celsius and Kelvin are on the same size of degree, so a change of 10°C is the same as a change of 10 units K
 - Also that 1°C is like 1.8°F
- Volume = mass/ density
- Density = mass/ volume

CH 2

- The nucleus contains protons and neutrons
- Atomic #: the # of protons and electrons
- Atomic Mass #: the # of protons + the # of neutrons
- Isotopes have different number of neutrons never protons
- Nuclear Decay:

Process	Symbol	Δ Atomic #	Δ Atomic Mass
Alpha Emission	$^4_2\text{He}, \alpha$	-2	-4
Beta Emission	$^0_{-1}\text{e}, \beta$	+1	0
Gamma Emission	$^0_0\gamma, \gamma$	0	0
Positron Emission (electron capture)	$^0_{+1}\text{e}, \text{E. C}$	-1	0

- Atomic Mass= (mass of X * abundance of X) + (mass of Y * abundance of Y) ...
- When naming compounds, it's only a polyatomic ion when there are charges included
- Polyatomic Ions

<p>*CH₃CO₂⁻ Acetate CN⁻ Cyanide ClO⁻ Hypochlorite ClO₂⁻ Chlorite ClO₃⁻ Chlorate ClO₄⁻ Perchlorate H₂PO₄⁻ Dihydrogen Phosphate HCO₃⁻ Bicarbonate HSO₄⁻ Bisulfate *OH⁻ Hydroxide MnO₄⁻ Permanganate *NO₂⁻ Nitrite *NO₃⁻ Nitrate</p>	<p>*CO₃²⁻ Carbonate CrO₄²⁻ Chromate CrO₂²⁻ Dichromate *O₂²⁻ Peroxide HPO₄²⁻ Hydrogen Phosphate *SO₃²⁻ Sulfite *SO₄²⁻ Sulfate S₂O₃²⁻ Thiosulfate</p>	<p>*NH₄⁺ Ammonium *NH₃ Ammonia PO₄³⁻ Phosphate</p>
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