

## Unit 2 The Periodic Table

## Vocab

Term	Definition
Alkali metals	all elements located in Group 1 on the periodic table except hydrogen; contains the most reactive metals
Alkaline Earth metals	all elements located in Group 2 on the periodic table
Allotrope	1 of 2 or more different forms of an element (nonmetal) in the same phase, but with different formulas and physical/chemical properties
Atomic Radius	the radius of an atom; measured in pm (picometers)
Chemical Reactivity	the tendency for an atom of a given element to gain or lose electrons when interacting with an atom of another element
Diatomic elements	elements that can't exist alone in nature; travel in pairs; contain 2 identical atoms (same element); Br <sub>2</sub> I <sub>2</sub> N <sub>2</sub> Cl <sub>2</sub> H <sub>2</sub> O <sub>2</sub> F <sub>2</sub>
Electronegativity	a measure of the relative tendency of an atom of an element to attract or gain electrons; the "desire" to gain electrons; electronegativity is based on a scale from 0.0-4.0
Families	elements with similar properties; group 1, 2, 17, and 18 on periodic table
Gases	have no definite shape and fill their container; at STP this includes H, N, O, F, Cl, & all of group 18 (the noble gases)
Groups	vertical columns on periodic table
Halogens	all elements located in Group 17 on the periodic table; have high electronegativities
Ionic Radius	the radius of an ion; cations (lose electrons) decrease in radius; anions (gain electrons) increase in radius
Ionization energy	the energy required to REMOVE one electron from an atom of an element; measured in kJ/mol
Isoelectronic	atoms or ions that have the SAME number of ELECTRONS
Liquids	take the shape of their container and have definite volume; only 2 elements exist as liquids at STP: Br, and Hg
Metallic Character	metals are malleable (can be hammered into thin sheets and bent), ductile (can be drawn into wire), have luster (shine), and conduct electricity; metals tend to lose electrons; all metals have a "sea of mobile valence electrons"
Metalloids	elements that have two properties/characteristics of metals; located along the "staircase," except for aluminum (Al)
Metals	elements that have all four properties/characteristics of a metal; located under/to the left of the staircase, except for Hydrogen (H)
Noble Gases	all elements located in Group 18 on the periodic table; inert (do not tend to react with atoms of other elements); have a full valence shell
Nonmetallic character	nonmetals are NOT malleable (shatter upon being hit with a hammer), NOT ductile, do NOT have luster (dull), and do NOT conduct electricity
Nonmetals	elements that have zero or one property/characteristic of a metal; located above/to the right of the staircase
Octet	full valence shell; 8 electrons, except for period 1 elements
Periodic	cyclic; repeating pattern/cycle
Periodic Law	elements of the periodic table are periodic functions of their atomic number

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Periods	horizontal rows on periodic table
Solids	have definite shape and definite volume; most elements are solids at STP
States of matter	any of the three phases in which an element can exist; solid (s), liquid (l), gas (g)
Transition metals	the three rows of elements in the middle of the periodic table from scandium (Sc) to mercury (Hg); reactivity is based on the elements with which they are combined