

Metals (p. 570 - 577)

I. Properties Of Metals

1. Define the term metals.

Metals - elements that are good conductors of heat + electricity
(usually solids at room temperature)

2. Which metal is liquid at room temperature?

Mercury

3. Match the terms with the correct definitions.

1. B. - Luster A. Ability to hammered or rolled into sheets.
2. A. - Malleable B. Ability to reflect light.
3. C. - Ductile C. Ability to formed into wires.

4. Which statement is false concerning metals?

- a. Metals generally have one to three electrons in their outer energy levels.
b. Metals tend to give up electrons when they react chemically.
c. Metals tend to form covalent bonds. (p. 571) Top
d. Metals and non-metals become chemically stable when they form ions.

5. Define the term metallic bonding.

Metallic Bonding - bonding in which positively-charged metallic ions are surrounded by a cloud of electrons
(electrons move freely among positively-charged ions)

6. Why don't metals shatter when hammered into sheets or drawn into wires?

Ions in layers slide past each other without losing their attraction

II. The Alkali Metals

1. Which group of the periodic table makes up the alkali metals?

Group 1

2. Which statement is false concerning alkali metals?

- a. Alkali metals are softer than most other metals.
b. The alkali metals are the most reactive of all the metals.
c. Alkali metals rarely occur in their elemental form in nature.
d. Each alkali metal has one electron in its outer energy level.



3. Identify a use for each alkali metal.

Lithium = Batteries / Psychoactive Drug Rubidium = Photo cells
Sodium = Table Salt Cesium = Photo cells
Potassium = Bananas Francium = Rare + Radioactive

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4. Define the term radioactive element.

Radioactive Element - element in which the nucleus breaks down + gives off particles + energy **Ex: Francium**

III. The Alkaline Earth Metals

1. Which group of the periodic table makes up the alkaline earth metals?

Group 2

2. Which statement is false concerning alkaline earth metals?

- a. Alkaline earth metals are shiny, malleable, and ductile.
- b. Alkaline earth metals are not commonly found as free elements.
- c. Each alkaline earth metal has two electrons in its outer energy level.
- d. Alkaline earth metals do not form ionic bonds.

3. Identify a use for each alkaline earth metal.

Beryllium = Radiation windows for X-rays Strontium = Radioactive Dating
 Magnesium = Fireworks, Bicycles, Chlorophyll Barium = Medical Diagnosis
 Calcium = Marble, Bones, Shells Radium = Treat Cancer

IV. Transition Elements

1. Define the term transition elements.

Transition Elements - elements in groups 3-12 in the periodic table of elements

2. Which statement is false concerning transition metals?

- a. Transition elements occupy an area in the periodic table from Group 3 to Group 12.
- b. Transition elements are commonly found in their elemental form in nature.
- c. Transition elements tend to be chemically unstable.
- d. Transition elements tend to form colored compounds.

3. Identify a use for each transition metal.

"Iron Triad" → Iron = Steel, Blood Cobalt = Steel, Blue Pigment Nickel = Steel, Coinage
"Coinage Metals" → Copper = Wiring, Coinage Silver = Jewelry, Coinage Gold = Jewelry, Coinage
 Zinc = Protective Coating, Brass Cadmium = Rechargeable Batteries Mercury = Thermometers, Switches, Batteries

V. The Inner Transition Metals

1. Define the term lanthanides.

Lanthanides - series of elements with atomic numbers (58 to 71).
(Used in motion picture industry, colors on T.V. screen)

2. Define the term actinides.

Actinides - series of elements with atomic numbers (90 to 103)
(Radioactive + unstable) Thorium → camera lenses
Uranium → nuclear reactors