

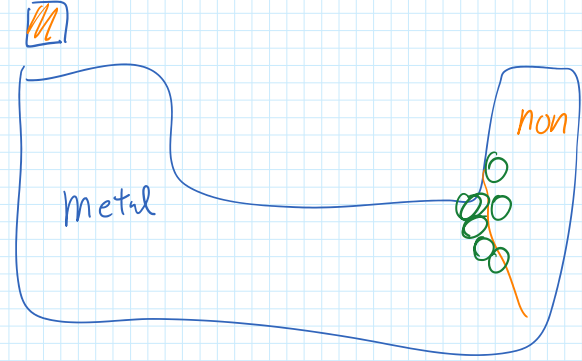
Printout

November 8, 2022 12:04 PM
 Science 9 – Chemistry Topic 2.2 – Concept 4: Elements are classified as metals, non-metals, or semi-metals.

190

Use old Science Prob 9 Book. Read p. 189-191 to complete the following table.

Properties	Metals	Non-Metals	Semi-metals (Metalloids)
Lustre -how light reflects off surface	shiny	dull	shiny (metal)
Malleability -can be pressed into sheets without breaking	malleable	brittle or shatter when struck	Brittle and not ductile (non metal)
Ductility -can be pulled into a wire	ductile		
Conductivity	Good Heat/Electricity	poor	poor (non-metal)
State -Solid/Liquid/Gas	Solid - for most Liquid - for mercury	Gas	solid (metal)
Melting point and boiling point	higher.	lower	
Density	higher	lower.	
Chemical Reactivity	react with acid or water.		



Metal:

Alkali metals:

- Group 1 (all elements, except Hydrogen)
- Shiny and soft
- Highly reactive with water and oxygen (often stored in a non-reactive liquid such as oil)

Alkaline-earth metals:

- Found in Group 2
- Shiny and Soft (but not as soft as alkali metals)
- Highly reactive (but not as reactive as alkali metals)

Figure 2.12: Magnesium (left) burns easily in air when ignited.

New Textbook.

P. 111 and 112

HW: WB P.63-64

Non-Metals

Hydrogen:

- Usually on the Left of the periodic table
- Lightest element
- Colorless, odorless, tasteless
- Highly flammable
- Makes up over 90% of atoms in the universe
- On Earth: Most hydrogen is found combined with oxygen as Water

H_2O

Halogens:

- Found in Group 17
- Highly reactive (therefore usually found in nature as part of compounds)

$NaCl$

"salt"

Noble gases:

- Found in Group 18
- Odorless, colorless gases
- Least reactive of all the elements
- Helium and neon never form compounds
- Other noble gases form compounds with great difficulty

Semi-metals

Semi-metals have physical and chemical properties of both metals and non-metals

- Shiny (like metals)
- Brittle and ductile (like non-metals)
- Poor conductors of heat and electricity (like non-metals)

Silicon (a notable Semi-metal):

- Poor conductors of heat and electricity (like non-metals)

Silicon (a notable Semi-metal):

- Second-most abundant element in Earth's crust (after oxygen)
- Used in many electronic devices (computers, smartphones)
- Used to make Silicone (material used in cookware contact lenses, prosthetics)

H		semi-metals										17	He
3	4	5	6	7	8	9	10					16	Ne
Li	Be	B	C	N	O	F							
11	12	13	14	15	16	17	18						
Na	Mg	Al	Si	P	S	Cl	Ar						
19	20	21	22	23	24	25	26						
K	Ca	Ga	Ge	As	Se	Br	Kr						
37	38	49	50	51	52	53	54						
Rb	Sr	In	Sn	Sb	Te	I	Xe						
55	56	81	82	83	84	85	86						
Cs	Ba	Tl	Pb	Bi	Po	At	Rn						
87	88												
Fr	Ra												

VVB P, 63-64