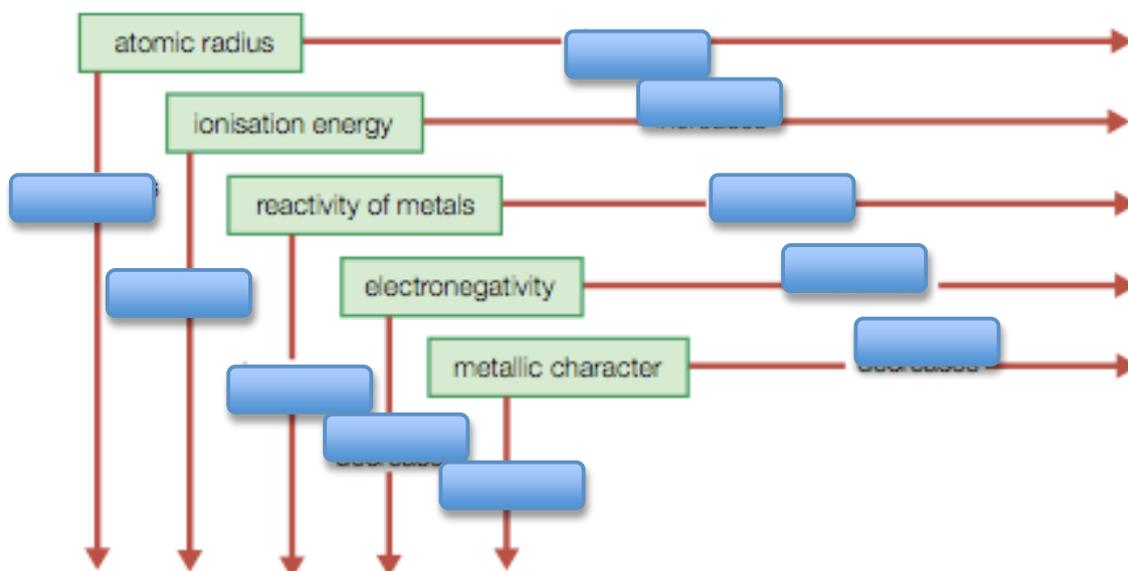


History of Periodic Table

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Source: '화학을 아작내기'[롤랜드 스미스 2007]

Review:



M.P.:

B.P.:

Very crude periodic table was invented by:

- What was the main idea behind it

Who formed the basis of MODERN periodic table:

- What properties did he use to classify:
- Account for the importance of the Mendeleev's Periodic Table in discovering new elements.(2marks)

Who proposed 'modified periodic law' and why?

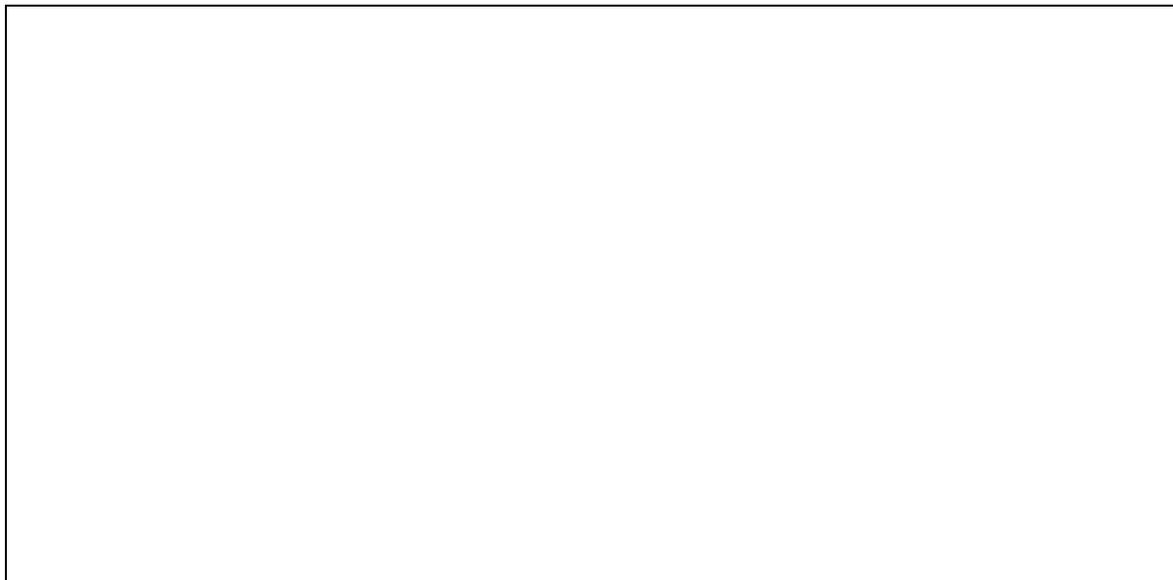
Investigation 5 Station 4

Aim To form a compound from an element of Magnesium

Hypothesis As the Magnesium burns, it will oxidise to form MgO(Magnesium Oxide)

Method/Procedure Equipment: 50cm Mg Ribbon, Crucible with lid, balance, pipe clay triangle, emery paper, Bunsen burner, tongs, 3 test tubes, 10mL 1 M HCl and taper.

Apparatus:



Method: Part A

- A1. Weigh a clean crucible with lid to the nearest to the 0.01g
- A2. Polish a 30cm Mg ribbon with the emery paper very thoroughly
- A3. Coil the Magnesium so the magnesium does not stick to each other. Put this into the crucible.
- A4. Reweigh the crucible and record all the measurement to record for table 1

A5. Place the crucible and lid onto the pipe-clay triangle as shown in apparatus. Heat strongly until the Mg ignites. Tilt the lid open slightly so the oxygen does not run out and keep the ignition going.

A6. Turn off the flame and cool down the crucible to room temperature, then weigh again.

Part B

B1. Perform the physical test for the Magnesium and the compound formed

B2. Place magnesium and compound formed into two separate test tube. Add some HCl acid and observe. In case of the Tube containing the magnesium ribbon, place new tube as soon as the HCl is added to collect the gas formed

B3. Light a taper to test the collected gas

Risk Assessment: There was a possibility of fire burn due to the Intense flame caused by the burning Magnesium strip.

Results

Table1		
Measurement	Mass	
Empty crucible		
Crucible and magnesium		
Crucible and compound		

Table 2		
Test/property	Magnesium	Compound
Appearance	Shiny Silver	White Powdery
Lustre	Very	No Lustre
Malleability	Very	Very Brittle
Hardness	Soft	Soft
Effect of acid	H ₂ gas formed	Nothing

Calculation

1. Mass of Magnesium used

Mass of Crucible with lid and Magnesium – Mass of crucible with lid

=

=

2. Mass of Compound Formed

Mass of Crucible with lid and Compound – Mass of crucible with lid

=

=

Discussion

1. Adding of the HCl can show the difference by releasing or not releasing the hydrogen gas.

2. Reaction was endothermic because the energy was required to trigger the reaction

3. The change in physical characteristics indirectly suggested such as appearance, lustre and malleability change suggested

4. $2\text{Mg} + \text{O}_2 + \text{Heat E.} \rightarrow 2\text{MgO}$

5. $\text{Mg} + 2\text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$

6.

Property	Magnesium	Oxygen	Magnesium Oxide
Appearance	Silver & Shiny	Transparent	White
Lustre	Yes	No	No
Malleability	Yes	N/a	No
Hardness	Medium	N/a	Soft
Effect of Acid	Hydrogen gas	N/a	Neutralisation

Avogadro's Number

State 'law of combining volumes':

State Avogadro's Hypothesis:

Mol is

- (Number)
- (Carbon)

DEFINE Molar Mass:

ASSESS the significance of the Guy-Lussac's contribution in understanding gaseous reactions to the development of chemical formula.[3 Marks]

PLAN:

ANSWER:

Now do some calculation questions

How does empirical formula and molecular formula differ:

HINT:

empirical |em¹ˈpɪrɪkəl|

adjective

based on, concerned with, or verifiable by observation or experience rather than theory or pure logic : *they provided considerable empirical evidence to support their argument.*

Distinguish the terms ECONOMIC and NON-ECONOMIC deposit of minerals? What type of analysis would mineral engineers used to make this distinction?[3 Marks]

What is the most abundant metal in lithosphere?

Check the price of the following metals:

Gold

Silver

Aluminium

Copper

Iron

Which one is the most expensive?

Account for the reason the metal above is the most expensive?

Aluminium is initially very expensive[despite the abundance], can you suggest a reason why?

Copper Extraction & Al. Recycle

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Make note from video