

C2: The Periodic Table

Knowledge Organiser



The Periodic Table displays the names and symbols of all the elements we have discovered which are organised by their chemical properties and their physical properties.

Physical properties

The physical properties of an element describe how a substance behaves generally.

(E.g., conductor of electricity, dense, conductor of heat, shiny, malleable, sonorous, high melting and boiling points)

Chemical properties

The **chemical properties** of an element describe how a substance behaves in terms of its chemical reactions. For example, how reactive it is, what other substances it reacts with, and the products it forms in reactions.

metals are to the left of the red line

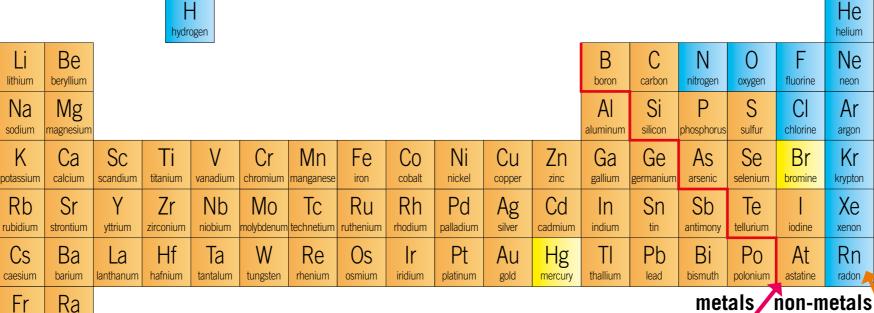
non-metals are on the right

Metals

- normally good conductors of heat and electricity
- shiny when cut
- malleable
- dense and sonorous
- most have high melting points

Group 1

- called the alkali metals
- like all other metals but are very reactive
- react vigorously (strongly) with water
- get more reactive as you go down the
- lower melting points than most other metals
- melting points decrease down the group
- always produce a metal hydroxide and hydrogen gas when reacted with water



gases at room temprature

metals / non-metals

Group 0

• called the **noble gases**

brittle and not sonorous

columns are called groups

Elements in a group normally have similar

properties, meaning chemists can predict

Non-metals

• low boiling points, so are gases at room

· poor conductors of electricity and heat

• often have properties the opposite of

properties of elements based on their

rows are called periods

group.

metals

temperature

low density

• dull in appearance

- very unreactive
- low boiling points, so are gases at room temperature
- like the halogens, their boiling points increase down the group

Group 7

liquids

called the halogens

radium

francium

- generally very reactive
- generally the opposite of Group 1
- melting point increases down the group while reactivity decreases.

This version of the Periodic Table does not include every discovered element.

solids

• take part in **displacement reactions**, where an element from higher up the group takes the place of one from lower down the group in a compound.

For example: potassium iodide + chlorine → potassium chloride + iodine

Key terms

Make sure you can write definitions for these key terms.

brittle alkali metal conductor chemical property displacement reaction element haloaen malleable metal noble aas non-metal aroup Periodic Table physical property sonorous