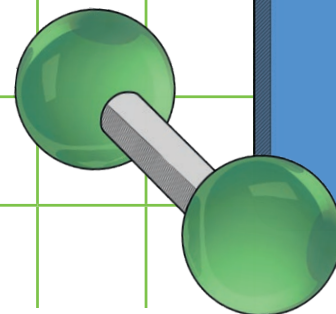


Properties of Non-Metals



N
nitrogen
14

Non-metals are a group of periodic table elements with some distinct properties in common.

Some of the general properties of non-metals are:

Electrical conductivity

Non-metals are generally **poor conductors of electricity and heat**. This is because they have relatively high ionisation energy, which means that they require a lot of energy to lose an electron.

Physical state

Non-metals **can exist in all three states of matter** (solid, liquid, and gas) at room temperature, depending on the element. For example, oxygen and nitrogen are gases, while sulphur and carbon can be solids or liquids.

Melting and boiling points

Non-metals generally have **low melting and boiling points**, which means they can be easily transformed from one state to another.

Reactivity

Non-metals are often **highly reactive** and can form compounds with other elements. Some non-metals are **highly corrosive** and can cause damage to metals and other materials.

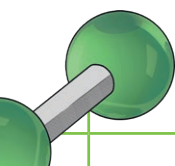
Electronegativity

Non-metals have **high electronegativity**, which means that they tend to attract electrons to themselves when they are involved in chemical bonding.

Chemical properties

Non-metals are generally **non-ductile and non-malleable**, meaning they cannot be easily shaped into wires or sheets.

Some common non-metals include oxygen, nitrogen, carbon, sulphur, fluorine, chlorine, and bromine. These elements play an important role in a variety of chemical and biological processes, and understanding their properties is essential to understanding their behaviour in nature and in laboratory settings.



O
oxygen
16

Activity

Find the following non-metals on the periodic table and colour their blocks in.

Hydrogen (H), Phosphorus (P), Helium (He), Carbon (C), Nitrogen (N), Fluorine (F), Oxygen (O), Neon (Ne), Sulfur (S), Chlorine (Cl), Argon (Ar), Selenium (Se), Bromine (Br), Krypton (Kr), Iodine (I), Xenon (Xe), Radon (Rn)

																He helium	
Li lithium	Be beryllium											B boron	C carbon	N nitrogen	O oxygen	F fluorine	Ne neon
Na sodium	Mg magnesium											Al aluminium	Si silicon	P phosphorus	S sulfur	Cl chlorine	Ar argon
K potassium	Ca calcium	Sc scandium	Ti titanium	V vanadium	Cr chromium	Mn manganese	Fe iron	Co cobalt	Ni nickel	Cu copper	Zn zinc	Ga gallium	Ge germanium	As arsenic	Se selenium	Br bromine	Kr krypton
Rb rubidium	Sr strontium	Y yttrium	Zr zirconium	Nb niobium	Mo molybdenum	Tc technetium	Ru ruthenium	Rh rhodium	Pd palladium	Ag silver	Cd cadmium	In indium	Sn tin	Sb antimony	Te tellurium	I iodine	Xe xenon
Cs caesium	Ba barium	La lanthanum	Hf hafnium	Ta tantalum	W tungsten	Re rhenium	Os osmium	Ir iridium	Pt platinum	Au gold	Hg mercury	Tl thallium	Pb lead	Bi bismuth	Po polonium	At astatine	Rn radon
Fr francium	Ra radium	Ac actinium	Rf rutherfordium	Db dubnium	Sg seaborgium	Bh bohrium	Hs hassium	Mt meitnerium	Ds darmstadtium	Rg roentgenium							

Interesting fact

Some elements are categorised as metalloids as they may exhibit metal-like behaviour under certain conditions but not others. Hydrogen and helium are often considered non-metals, but they can also be classified as metalloids or even metals, depending on the situation.

Activity Answers

Find the following non-metals on the periodic table and colour their blocks in.

Hydrogen (H), Phosphorus (P), Helium (He), Carbon (C), Nitrogen (N), Fluorine (F), Oxygen (O), Neon (Ne), Sulfur (S), Chlorine (Cl), Argon (Ar), Selenium (Se), Bromine (Br), Krypton (Kr), Iodine (I), Xenon (Xe), Radon (Rn)

																He helium	
Li lithium	Be beryllium											B boron	C carbon	N nitrogen	O oxygen	F fluorine	Ne neon
Na sodium	Mg magnesium											Al aluminium	Si silicon	P phosphorous	S sulfur	Cl chlorine	Ar argon
K potassium	Ca calcium	Sc scandium	Ti titanium	V vanadium	Cr chromium	Mn manganese	Fe iron	Co cobalt	Ni nickel	Cu copper	Zn zinc	Ga gallium	Ge germanium	As arsenic	Se selenium	Br bromine	Kr krypton
Rb rubidium	Sr strontium	Y yttrium	Zr zirconium	Nb niobium	Mo molybdenum	Tc technetium	Ru ruthenium	Rh rhodium	Pd palladium	Ag silver	Cd cadmium	In indium	Sn tin	Sb antimony	Te tellurium	I iodine	Xe xenon
Cs caesium	Ba barium	La lanthanum	Hf hafnium	Ta tantalum	W tungsten	Re rhenium	Os osmium	Ir iridium	Pt platinum	Au gold	Hg mercury	Tl thallium	Pb lead	Bi bismuth	Po polonium	At astatine	Rn radon
Fr francium	Ra radium	Ac actinium	Rf rutherfordium	Db dubnium	Sg seaborgium	Bh bohrium	Hs hassium	Mt meitnerium	Ds darmstadtium	Rg roentgenium							

H
hydrogen