

Helium (He)

What is it and where does it come from?

Helium is formed by radioactive decay and is found underground where it occurs in oil and natural gas wells. There are tiny amounts of helium in the atmosphere.

Properties:

Elemental Symbol	He
% in the atmosphere	0.0005%
Boiling Point	-269°C
Density (Air = 1)	0.14
Atomic Mass	2
Molecular Mass	4

Discovered by: Sir William Ramsey (1895)

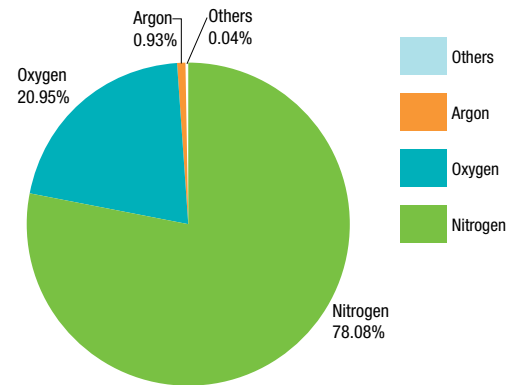
Characteristics:

- One volume of liquid helium expands to produce 800 volumes of gaseous helium
- It is colourless – you can not see it
- It is odourless – you can not smell it
- It is tasteless – you can not taste it
- It is not toxic or flammable
- It is completely inert – it does not react with any other elements

Interesting facts about Helium:

- It is much lighter than air
- It does not support life
- It does not support combustion
- It has the smallest molecules of any of the elements
- It is the second lightest of all the elements
- It is the second most abundant element in the universe
- There is a limited amount on helium on earth
- As with fossil fuels where it occurs, our supplies will one day run out

The air we breath



Helium (He)

What can we use it for?

How high can you go ?

How low can you go ?

Balloons and Airships

- Helium is much lighter than air so it is used to inflate party balloons. It is also used to inflate airships.

Deep Sea Diving

- Helium is mixed with oxygen to make special breathing gases for deep sea divers. It helps to prevent decompression sickness or “The Bends” which occurs when nitrogen gets trapped in the blood.

Leak Detection

- Helium molecules are the smallest of any element, making it an ideal gas for leak detecting. Helium will identify very small leaks and is inert so will be safe when released into the atmosphere.

Medicine

- Liquid Helium is used to cool the magnets used in Magnetic Resonance Imaging (MRI) scanners.
- MRI scanners are used in hospitals when scanning the body. Cooling the magnets to extremely low temperatures allows them to be “super conductive” and create very detailed images. This is important when treating patients with cancer or tumours.



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