

Illustration 2.2 - Gases in the atmosphere

What the atmosphere is mostly made of

Most of the air is not greenhouse gas

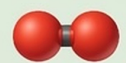
THE ATMOSPHERE BY VOLUME

Dry air near Earth's surface
(Water vapour varies by place and weather)



Nitrogen (N₂)
The biggest part of the air

78%



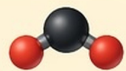
Oxygen (O₂)
Needed for breathing

21%



Argon (Ar)
A noble gas

0.9%

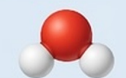


Carbon dioxide (CO₂)
A greenhouse gas

0.04%
(about 400 ppm)

Other trace gases
Neon, helium, krypton, hydrogen,
methane, nitrous oxide, ozone,
and others

**less than
0.06%**



Water vapour (H₂O)
A greenhouse gas
Varies a lot: about 0–4%

**variable
(0–4%)**

Percentages are approximate.
They can vary slightly with location and altitude.



THE KEY TAKEAWAY

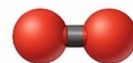
Most of the atmosphere is nitrogen and oxygen.
But the greenhouse effect depends on **what gases do**, not just how much of the air they make up.

NOT ALL GASES TRAP HEAT IN THE SAME WAY

Main gases in the air
Do NOT absorb infrared
heat in the same way



Nitrogen (N₂)
78% of the air



Oxygen (O₂)
21% of the air

These gases make up about 99%
of the atmosphere, but they do
not interact with infrared heat in
the same way as greenhouse
gases do.

Infrared
heat from
Earth



Greenhouse gases
Can absorb and re-emit
infrared heat



Carbon dioxide (CO₂)
0.04% (about 400 ppm)



Methane (CH₄)
Trace amounts (about 2 ppm)



Water vapour (H₂O)
Variable (0–4%)



Nitrous oxide (N₂O)
Trace amounts (about 0.3 ppm)

Even though these gases are present
in small amounts, they are very
effective at absorbing and re-emitting
infrared heat.