



### Key Properties

Atomic Mass	20.18
Category	Noble Gases
State at 20°C	gas
Melting Point	-248.59°C
Boiling Point	-246.046°C
Density	0.900 g/L
Electron Config	[He] 2s22p6
Electronegativity	null
Year Discovered	1898
Discovered By	William Ramsay & Morris Travers

### Did You Know?

- 1 Despite being famous for \
- 2 Neon is the fifth most abundant element in the universe but is very rare on Earth because it's light and chemically inert, so it easily escapes into space.
- 3 It is the least reactive of all the noble gases and does not form any known stable compounds with other elements.
- 4 The name Neon comes from the Greek word 'neos', meaning 'new'.
- 5 At 40 times the refrigerating capacity of liquid helium, liquid neon is a powerful and cost-effective cryogenic refrigerant.

#### APPEARANCE

A colorless, odorless, tasteless inert gas that glows reddish-orange in a vacuum tube.

#### SUPERHERO PERSONA

*"The City-Light, a flashy hero who stands out in any crowd with a brilliant, glowing personality."*

#### EVERYDAY CONNECTION

The bright, glowing signs on city streets.

#### POP CULTURE

The iconic visual style of cyberpunk cities, like in 'Blade Runner'.

### Neon: The "New" Gas that Glows

Neon is a colorless, odorless gas that doesn't react with anything under normal conditions. It belongs to the noble gases, which are famously unreactive. Its name comes from the Greek word neos, meaning "new"—a perfect fit for an element that gave the world a brand-new kind of glow.

### Why Is Neon Useful?

Neon is most famous for its glow, but it has several important uses in technology and industry.

**Neon Signs:** When electricity passes through neon gas in a glass tube, it glows with a bright reddish-orange light. This made neon signs iconic around the world. (Fun fact: most other colors in "neon signs" actually come from different gases!)

**Lighting & Electronics:** Neon is used in high-voltage indicators, switching gear, and helium-neon lasers for barcode scanners and scientific research.

**Cryogenic Refrigerant:** Liquid neon is an extremely effective coolant—more powerful per volume than liquid helium, and cheaper too. It's been used to cool satellite instruments and even the liquid oxygen and hydrogen that powered NASA's Apollo rockets.

**Other Uses:** Neon also plays a role in lightning arresters (for electrical safety) and in specialized diving equipment.

### Natural Abundance & History

Neon is the fifth most abundant element in the universe, but on Earth it's surprisingly rare—just about 18 parts per million of the atmosphere. It's obtained through fractional distillation of liquid air.

**Discovery (1898):** British chemists William Ramsay and Morris Travers discovered neon while studying liquid argon. As the liquid evaporated, they collected the gases that boiled off first. When they ran an electric current through the new gas, they were startled by its brilliant red glow—clear proof of a brand-new element.

### Biological Role

Neon has no biological role. It's non-toxic and harmless to living things.