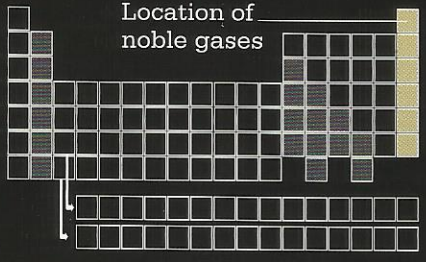
Noble gases | Lighting up



PERIODIC TABLE

These "shy" gases, which make up about 1 percent of Earth's atmosphere, rarely combine with other elements. They are all colorless and odorless, but when given a chance to shine they can be dazzling!

10 **Ne** NEON

Neon

Like all noble gases, neon glows when electricity passes through it. Neon lights blaze bright red-orange, bringing glamour and glitz to city nightlife.

What it is	A colorless, unreactive gas
Melting point	–415.46°F (–248.59°C)
Boiling point	–410.94°F (–246.08°C)

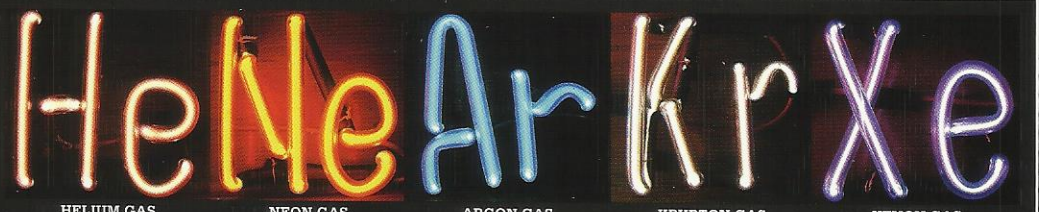
City lights
The first neon lights were made in the 1900s. They changed the look of cities forever.

86 **Rn** RADON

Radon

This noble gas is radioactive. Radon gas is produced by the radioactive decay (see pages 64–65) of uranium in Earth's crust, and it seeps naturally out of the ground.

What it is	A radioactive ga
Melting point	–96°F (–71°C
Boiling point	–79.1°F (–61.7°C



HELIUM GAS GLOWING | NEON GAS GLOWING | ARGON GAS GLOWING | KRYPTON GAS GLOWING | XENON GAS GLOWING

18 **Ar** ARGON

Argon

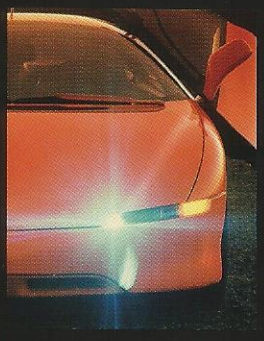
Unreactive argon is used in traditional lightbulbs, which heat a filament—a coil of tungsten wire—until it glows. The argon keeps the filament from burning out.

What it is	Unreactive ga
Melting point	–308.7°F (–189.3°C
Boiling point	–302.4°F (–185.8°C

54 **Xe** XENON

Xenon

This gas glows pale violet under electric current. Xenon is used in the superbright, high-temperature headlights of many expensive cars.



Dazzle danger
Headlights that use xenon give excellent night visibility, but they can dazzle other road users.

What it is	An unreactive, heavy gas
Melting point	–169.1°F (–111.7°C)
Boiling point	–162°F (–108°C)

36 **Kr** KRYPTON

Krypton

Under electric current, krypton glows a whitish-mauve color. Krypton is the main gas used in low-energy fluorescent lights.

Energy saver
Low-energy fluorescent lights use five times less energy than traditional filament lightbulbs.

What it is	An unreactive, heavier-than-air gas
Melting point	–251.25°F (–157.36°C)
Boiling point	–243.8°F (–153.22°C)

Welding metals together
Argon is so unreactive that it is used to prevent explosions from taking place during dangerous work, such as welding.

6 very unreactive elements