Rubidium (Rb)

Element 37 — Complete Summary

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37
Rb
Rubidium
85.468

Key Properties

Atomic Mass	85.468
Category	Alkali Metals
State at 20°C	solid
Melting Point	39.30°C
Boiling Point	688°C
Density	1.532
Electron Config	[Kr] 5s1
Electronegativity	0.82
Year Discovered	1861
Discovered By	Robert Bunsen & Gustav Kirchhoff

✨ Did You Know?

1. It was discovered using spectroscopy by Robert Bunsen and Gustav Kirchhoff, who noticed a unique set of deep red lines in the spectrum of a mineral sample. The name comes from the Latin 'rubidus' for 'deepest red'.
2. Rubidium is used in some of the world's most accurate atomic clocks.
3. It is so reactive that it can ignite spontaneously in air and reacts violently with water.
4. It melts at a very low temperature of 39.3 °C (102.7 °F), meaning it would be a liquid on a very hot summer day.
5. The human body tends to treat rubidium ions as if they were potassium ions, so it can become widely distributed in the body if ingested.

APPEARANCE
Rubidium is a soft, silvery-white, highly reactive metal.

SUPERHERO PERSONA
"The Timekeeper, a hero who measures time with atomic precision."

EVERYDAY CONNECTION
Rubidium is found in the purple color in some fireworks.

POP CULTURE
Rubidium is a component of atomic clocks, the basis for precise timekeeping in GPS satellites.

Rubidium: The Red-Lined Element

Rubidium is a soft, silvery-white metal that is extremely reactive—it can ignite in air and explodes when it touches water. Its name comes from the Latin word rubidus, meaning “deep red,” because of the bright red lines in its atomic spectrum. Due to its volatility, rubidium is mostly used in research, with only a few specialized applications.

Why Is Rubidium Useful?

Even though it isn’t common in everyday life, rubidium’s unusual properties make it useful in certain fields:

Photocells: Rubidium is easily ionized by light, making it useful in photoelectric cells.

Glassmaking & Electronics: It’s used in special glass types and to remove tiny amounts of oxygen from vacuum tubes.

Fireworks: Rubidium nitrate can add a distinctive purple color to fireworks.

Medical Research: Radioactive rubidium behaves like potassium in the body. Since tumors absorb rubidium differently than healthy tissue, it has been used to help locate brain tumors.

Biological Role & Natural Abundance 🌱

Rubidium has no essential biological role and is generally non-toxic. However, because it is chemically similar to potassium, the human body naturally absorbs about half a gram of rubidium from food.

Rubidium is never found pure in nature. Instead, it occurs in minerals like lepidolite and pollucite. Commercially, it is recovered as a by-product of lithium and potassium extraction from minerals and brines.

History of Discovery 📜

1861: German chemists Robert Bunsen and Gustav Kirchhoff discovered rubidium at the University of Heidelberg using a spectroscope, a new invention at the time. They noticed two brilliant ruby-red lines in the mineral’s spectrum that had never been seen before—clear evidence of a brand-new element.

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