



Key Properties

Atomic Mass	[280]
Category	unknown-properties
State at 20°C	solid
Melting Point	null
Boiling Point	null
Density	28.7*
Electron Config	[Rn] 5f146d107s1
Electronegativity	null
Year Discovered	1994
Discovered By	GSI Helmholtz Centre for Heavy Ion Research

Did You Know?

- 1 It is named in honor of the German physicist Wilhelm Conrad Röntgen, who discovered X-rays in 1895.
- 2 Like darmstadtium, it was first created at the GSI in Germany in 1994 by bombarding a bismuth target with nickel ions.
- 3 It is a member of Group 11, placing it below the 'coinage metals' copper, silver, and gold. It is therefore predicted to be a noble metal.
- 4 Its most stable known isotope has a half-life of about 26 seconds.
- 5 Only a handful of atoms have ever been produced.

APPEARANCE

Roentgenium is a synthetic, highly radioactive element.

SUPERHERO PERSONA

"The X-Ray, a hero named for the discoverer of the invisible rays that let us see inside things."

EVERYDAY CONNECTION

Roentgenium has no everyday connection, used only in research.

POP CULTURE

Roentgenium is predicted to be a solid metal in the same group as gold.

Roentgenium: The Elusive, Superheavy Metal

Roentgenium is a synthetic, highly radioactive metal that exists only in the lab. So far, scientists have created just a handful of atoms. Its longest-lived isotope survives for only 22.8 seconds before decaying. The element is named after Wilhelm Conrad Röntgen, the physicist who discovered X-rays.

A Man-Made Element

Roentgenium does not occur naturally—it must be made in a heavy ion accelerator. Scientists create it by fusing nickel atoms with bismuth atoms, a process that requires immense energy.

Because it is so rare and unstable, roentgenium has no practical uses. Instead, it helps scientists study the chemistry of superheavy elements and explore the limits of the periodic table.

Biological Role

Roentgenium has no biological role. Like other superheavy elements, it is considered highly toxic due to its intense radioactivity.

History of Discovery

The discovery of roentgenium was part of a global race to find new superheavy elements:

1986: A Russian team attempted to create element 111 by bombarding bismuth with nickel but was unsuccessful.

1994: At the Gesellschaft für Schwerionenforschung (GSI) in Germany, a team led by Peter Armbruster and Gottfried Münzenberg successfully synthesized roentgenium. They detected atoms of roentgenium-272, which lasted only 1.5 milliseconds before decaying.

Later work confirmed longer-lived isotopes, including roentgenium-282, which lasts up to 22.8 seconds.