



Key Properties

Atomic Mass	[289]
Category	Post-Transition Metals
State at 20°C	solid
Melting Point	null
Boiling Point	null
Density	14*
Electron Config	[Rn] 5f146d107s27p2
Electronegativity	null
Year Discovered	1999
Discovered By	Joint Institute for Nuclear Research (JINR)

Did You Know?

- 1 It is named in honor of the Flerov Laboratory of Nuclear Reactions at the Joint Institute for Nuclear Research (JINR) in Dubna, Russia.
- 2 The laboratory itself is named after its founder, the Russian physicist Georgy Flyorov.
- 3 Flerovium is located in Group 14, below lead. It is predicted to have some noble-gas-like properties due to relativistic effects on its electrons.
- 4 Its most stable isotope has a half-life of only about 2.6 seconds.
- 5 It was first synthesized in 1998 by bombarding a plutonium target with calcium ions.

APPEARANCE

Flerovium is a synthetic, highly radioactive element.

SUPERHERO PERSONA

"The Island of Stability Seeker, a hero from the lab that searches for the fabled 'island of stability' where super-heavy elements might last longer."

EVERYDAY CONNECTION

Flerovium has no everyday connection, used only in research.

POP CULTURE

Flerovium is predicted to have unusual, noble-gas-like properties.

Overview of Flerovium

Flerovium is a synthetic, highly radioactive element with atomic number 114. Only a handful of atoms have ever been produced, and its most stable isotope, flerovium-289, has a half-life of about 2.6 seconds. With such a fleeting existence, flerovium has no practical uses beyond research. It was named in honor of the Flerov Laboratory of Nuclear Reactions in Dubna, Russia, where it was first synthesized.

How Flerovium Is Made

Flerovium does not occur naturally and must be created in particle accelerators through nuclear fusion reactions.

First synthesis (1998): A Russian team led by Yuri Oganessian and Vladimir Utyonkov at the Joint Institute for Nuclear Research (JINR) produced flerovium by bombarding plutonium-244 with calcium-48 ions.

Scale of the experiment: Roughly 5 quintillion calcium ions had to be fired at the plutonium target over 40 days to create just a single atom of flerovium.

Other attempts have since confirmed the creation of additional isotopes of flerovium, though all decay in seconds.

Uses and Biological Role of Flerovium

Because of its extreme instability and rarity, flerovium has no commercial or practical uses. It is valuable only to researchers studying the chemistry of the heaviest elements.

Scientists are especially interested in flerovium because it lies at the edge of the theoretical "island of stability"—a predicted region of superheavy nuclei that may have longer half-lives and unique chemical properties.

Flerovium has no biological role and is considered toxic due to its intense radioactivity.

History of Flerovium

1998 – Discovery: First synthesized at JINR in Dubna, Russia, by a team led by Yuri Oganessian and Vladimir Utyonkov, who created flerovium-289 by fusing plutonium with calcium.

1999 – Confirmation: A few more atoms were successfully created, supporting the original claim.

2012 – Naming: The International Union of Pure and Applied Chemistry (IUPAC) officially named the element flerovium to honor Russian physicist Georgy Flyorov and the laboratory he established.