

107
Bh
Bohrium
[270]

Key Properties

Atomic Mass	[270]
Category	Transition Metals
State at 20°C	solid
Melting Point	null
Boiling Point	null
Density	37.1*
Electron Config	[Rn] 5f146d57s2
Electronegativity	null
Year Discovered	1981
Discovered By	GSI Helmholtz Centre for Heavy Ion Research

Did You Know?

- 1 It is named in honor of Niels Bohr, the Danish physicist who made foundational contributions to understanding atomic structure and quantum theory.
- 2 The German team at GSI that discovered it suggested the name 'nielsbohrium', but IUPAC eventually shortened it to 'bohrium'.
- 3 Its most stable isotope has a half-life of about 61 seconds.
- 4 It is a member of Group 7 of the periodic table and is expected to have properties similar to rhenium.
- 5 Only a few atoms of bohrium have ever been created.

APPEARANCE

Bohrium is a synthetic, highly radioactive metal.

SUPERHERO PERSONA

"The Quantum Leaper, a hero named for the physicist who described the quantum model of the atom."

EVERYDAY CONNECTION

Bohrium has no everyday connection, used only in research.

POP CULTURE

Bohrium has only ever been produced a few atoms at a time.

Overview of Bohrium

Bohrium is a synthetic, highly radioactive metal and one of the heaviest elements in the periodic table. It has no stable isotopes, and the most long-lived isotopes decay in less than a minute. Because of its extreme instability, bohrium will never be produced in visible amounts and has no practical applications. Its main significance lies in scientific research, helping chemists and physicists understand the behavior of superheavy elements.

How Bohrium Is Made

Bohrium does not occur naturally. Instead, it is created in laboratories using particle accelerators. The process involves colliding lighter atomic nuclei to form heavier ones. In the case of bohrium, scientists bombarded bismuth atoms with chromium ions to produce isotopes of the element. This method is known as "cold fusion," which allows for the creation of superheavy nuclei with reduced excitation energy.

History of Bohrium

1976 – First attempt: A team at the Joint Institute for Nuclear Research (JINR) in Dubna, Russia, led by Yuri Oganessian, reported evidence of bohrium-261, though their results were not universally accepted.

1981 – Confirmed discovery: At the Gesellschaft für Schwerionenforschung (GSI) in Darmstadt, Germany, Peter Armbruster and Gottfried Münzenberg successfully created a single atom of bohrium-262. Their clear detection methods provided strong evidence for the element's existence.

Naming: Although both Russia and Germany contributed to its discovery, the International Union of Pure and Applied Chemistry (IUPAC) credited the GSI team. The element was named bohrium in honor of Danish physicist Niels Bohr.

Natural Occurrence of Bohrium

Bohrium does not exist in nature due to its instability and extremely short half-life. Only a few atoms have ever been synthesized, all within specialized research facilities.

Biological Role of Bohrium

Bohrium has no biological role. It is purely a research element and is too unstable and radioactive to have any practical or biological applications.