



Key Properties

Atomic Mass	[285]
Category	Transition Metals
State at 20°C	solid
Melting Point	null
Boiling Point	null
Density	23.7*
Electron Config	[Rn] 5f146d107s2
Electronegativity	null
Year Discovered	1996
Discovered By	GSI Helmholtz Centre for Heavy Ion Research

Did You Know?

- 1 It is named in honor of the famous astronomer Nicolaus Copernicus, who proposed that the Earth revolves around the Sun.
- 2 It was created at the GSI in Germany by bombarding a lead target with zinc ions.
- 3 It is a member of Group 12, below zinc, cadmium, and mercury. It is predicted to be a volatile metal and may even be a liquid or a gas at room temperature.
- 4 The first reaction to create it produced only a single atom, which existed for less than a millisecond.
- 5 Its most stable isotope has a half-life of approximately 29 seconds.

APPEARANCE

Copernicium is a synthetic, highly radioactive element.

SUPERHERO PERSONA

"The Revolutionary, a hero named for the astronomer who placed the Sun at the center of the solar system."

EVERYDAY CONNECTION

Copernicium has no everyday connection, used only in research.

POP CULTURE

Copernicium is predicted to be a volatile metal, possibly even a liquid at room temperature like mercury.

Overview of Copernicium

Copernicium is a synthetic, radioactive element with atomic number 112. Only a handful of atoms have ever been produced, making it one of the rarest elements in the periodic table. Though classified as a metal, theoretical predictions suggest it behaves more like a noble gas, making it unusually unreactive for its group.

The element was named in honor of the astronomer Nicolaus Copernicus, who revolutionized our understanding of the solar system.

How Copernicium Is Made

Copernicium does not exist in nature and must be created artificially. It is synthesized in a heavy ion accelerator through fusion reactions, in which lighter nuclei are combined to form a heavier one. The first successful experiment bombarded lead nuclei with zinc nuclei, briefly creating atoms of copernicium.

Uses of Copernicium

Because copernicium has a very short half-life and can only be made in atom-scale quantities, it has no practical applications outside of scientific study. Its primary value is in nuclear research, where it helps scientists explore the stability and behavior of the heaviest elements at the edge of the periodic table.

Biological Role of Copernicium

Copernicium has no biological role. It is synthetic, highly radioactive, and considered toxic.

History of Copernicium

1996 – First synthesis: A German team at the Gesellschaft für Schwerionenforschung (GSI) in Darmstadt, led by Sigurd Hofmann, created the first atom of copernicium-277 by bombarding lead with zinc ions. This isotope had an extremely short half-life of just 0.24 milliseconds.

Later confirmation: Other isotopes of copernicium have since been observed as decay products of heavier elements, including flerovium (114) and livermorium (116), confirming its place in the periodic table.

Naming: In 2010, the element was officially named copernicium in recognition of Nicolaus Copernicus.