

Darmstadtium (Ds)

Element 110 | Transition metal - superheavy | Period 7 | d-block

Atomic number	110
Atomic mass	[281]
Electron configuration	[Rn] 5f14 6d9 7s1
Reference isotope	281Ds
Density	Unknown
Melting point	Unknown
Boiling point	Unknown
Structure	Bulk crystal structure unknown

Big idea

Darmstadtium is defined experimentally by its nuclei and decay chains. Its Group 10 position is useful for theory, but the page does not turn theoretical metallic behavior into fake bulk measurements.

Five things to remember

- Atomic number 110 means every darmstadtium nucleus has 110 protons.
- The ground-state/reference electron configuration is [Rn] 5f14 6d9 7s1.
- The representative teaching isotope is 281Ds.
- Darmstadtium is defined experimentally by its nuclei and decay chains. Its Group 10 position is useful for theory, but the page does not turn theoretical metallic behavior into fake bulk measurements.
- Material structure status: Bulk crystal structure unknown.

Structure, evidence and real-world context

No defensible macroscopic crystal lattice is displayed for Darmstadtium. Nuclear/atomic evidence and theory are kept separate from unmeasured bulk material properties.

Evidence boundary

Atomic identity and source-reviewed reference values are separated from predictions. Search demand shapes headings and FAQs but never overrides scientific evidence; unknown bulk structure/density/phase values remain visibly unknown.

Where is it used?

Scientific research only - Research-only context; no operational production or handling guidance.

Nuclear-structure and superheavy-element studies - Research-only context; no operational production or handling guidance.

Discovery and history

1994 - Sigurd Hofmann, Peter Armbruster, Gottfried Münzenberg and colleagues produced element 110 at GSI in Darmstadt.

Naming / context - The element name and discovery story are part of the historical record; search-led questions are answered without turning history into scientific evidence for bulk properties.

Today - Current use is described at the level supported by the element's availability and evidence, with research-only elements kept research-only.

Safety / interpretation

This page is educational and non-operational. It provides no radioactive-material production, separation, source-preparation, handling or access instructions.

Search-led questions and review

The questions below reflect genuine learner/search intent. Answers remain source- and evidence-led.

What is the atomic number of darmstadtium?

The atomic number is 110, meaning every darmstadtium nucleus has 110 protons.

What is the symbol for darmstadtium?

The chemical symbol is Ds.

What is darmstadtium?

Darmstadtium is element 110, symbol Ds, a synthetic superheavy Group 10 element.

What is darmstadtium used for?

Darmstadtium has no use outside scientific research.

How many neutrons does darmstadtium have?

Neutron count depends on isotope. The teaching isotope ^{281}Ds has $281 - 110 = 171$ neutrons.

What does darmstadtium look like?

No macroscopic sample has been observed; measured bulk appearance and crystal structure are unknown.

Quick review

What is Darmstadtium's atomic number?

Answer: 110

Atomic number 110 defines Darmstadtium by its proton count.

Which statement best describes the material evidence for Darmstadtium?

Answer: Bulk crystal structure unknown

The Structure view follows measured/reviewed evidence; unknown bulk structures remain unknown.

What is the safest rule for Darmstadtium uses?

Answer: Distinguish the element from its isotopes, compounds and engineered materials

Elemental, isotope-specific and compound properties must not be conflated.

Sources

Royal Society of Chemistry - Darmstadtium: <https://periodic-table.rsc.org/element/110/>

NIST - Atomic Weights and Isotopic Compositions: https://physics.nist.gov/cgi-bin/Compositions/stand_alone.pl

IUPAC - Periodic Table of Elements: <https://iupac.org/what-we-do/periodic-table-of-elements/>