

## Isotopes of Darmstadtium

Isotope	Atomic Mass	Half-life	Mode of Decay	Nuclear Spin	Nuclear Magnetic Moment
Ds-267	267.1440	$3 \times 10^{-6}$ seconds	$\alpha$ to Hs-263	No data available	No data available
Ds-268	268.1435	No data available	No data available	No data available	No data available
Ds-269	269.1451	0.00017 seconds	$\alpha$ to Hs-265	No data available	No data available
Ds-270	270.1446	No data available	No data available	No data available	No data available
Ds-271	271.1461	0.0011 seconds	$\alpha$ to Hs-267	No data available	No data available
Ds-272	272.1463	0.00086 seconds	SF	0	No data available
Ds-273	273.1492	0.00018 seconds	$\alpha$ to Hs-269	No data available	No data available
Ds-280	280	7.60 seconds	SF	No data available	No data available
Ds-281	281	1.10 minutes	$\alpha$ to Hs-277	No data available	No data available

**110**  
**Ds** Darmstadtium was discovered in 1994 by Peter Armbruster and Gottfried Münzenberg, under the direction of Sigurd Hofmann, at the Gesellschaft für Schwerionenforschung (GSI) (Institute for Heavy Ion Research) in Darmstadt, Germany. Its name is derived from that of Darmstadt, the place of its discovery. The new element was produced by fusing a nickel atom and a lead atom together. Over a period of many days, many billions of nickel atoms were fired at a lead target in order to produce and identify a single atom of darmstadtium.

Darmstadtium is a synthetic element (an element that can be created in a laboratory but is not found in nature) in the same group as nickel, palladium and platinum. It is calculated to have similar properties to these lighter homologues, but unlike them, darmstadtium decays after a small fraction of a thousandth of a second into lighter elements by emitting  $\alpha$ -particles which are the nuclei of helium atoms. Due to the short half-lives of its isotopes (and the resulting difficulty in obtaining statistically significant results), experimental chemistry of darmstadtium has not received as much attention as that of the heavier elements copernicium and flerovium.

## Properties of Darmstadtium

<b>Name</b>	Darmstadtium
<b>Symbol</b>	Ds
<b>Atomic number</b>	110
<b>Atomic weight</b>	[281]
<b>Standard state</b>	Presumably a solid at 298 °K
<b>CAS Registry ID</b>	54083-77-1
<b>Group in periodic table</b>	10
<b>Group name</b>	None
<b>Period in periodic table</b>	7
<b>Block in periodic table</b>	d-block
<b>Color</b>	Unknown, but probably metallic and silvery white or grey in appearance
<b>Classification</b>	Metallic
<b>Melting point</b>	No data available
<b>Boiling point</b>	No data available
<b>Density of solid</b>	27.40 g/cm <sup>3</sup> (predicted)
<b>Electron configuration</b>	[Rn]5f <sup>14</sup> 6d <sup>8</sup> 7s <sup>2</sup>