

Isotopes of Dubnium

| Isotope | Atomic Mass | Half-life | Mode of Decay | Nuclear Spin | Nuclear Magnetic Moment |
|---------|-------------|--------------|--|-------------------|-------------------------|
| Db-255 | 255.1074 | 1.60 seconds | α to Lr-251; SF | No data available | No data available |
| Db-256 | 256.1081 | 2.60 seconds | α to Lr-252; SF; EC to Rf-256 | No data available | No data available |
| Db-257 | 257.1079 | 1.50 seconds | α to Lr-253; SF; EC to Rf-257 | No data available | No data available |
| Db-258 | 258.1093 | 4.20 seconds | α to Lr-254; SF; EC to Rf-258 | No data available | No data available |
| Db-259 | 259.1097 | 1.20 seconds | α to Lr-255 | No data available | No data available |
| Db-260 | 260.1114 | 1.50 seconds | α to Lr-256; SF; EC to Rf-260 | No data available | No data available |
| Db-261 | 261.1121 | 1.80 seconds | α to Lr-257; SF | No data available | No data available |
| Db-262 | 262.11376 | 34 seconds | α to Lr-258; SF; EC to Rf-262 | No data available | No data available |
| Db-263 | 263.1153 | 30 seconds | α to Lr-259; SF | No data available | No data available |



Dubnium is a synthetic element (an element that can be created in a laboratory but is not found in nature). It apparently was synthesized by Russian and American workers independently by bombardment technologies in the 1960s. Its actual isolation as the free element has not been accomplished. The priority of the discovery, and therefore the naming of the element, was disputed among Soviet and American scientists. The Soviet, later Russian, team proposed the name *nielsbohrium* (Ns) in honor of the Danish nuclear physicist Niels Bohr. The American team proposed that the new element should be named *hahnium* (Ha), in honor of the late German chemist Otto Hahn. In 1997 the dispute was resolved, and the current name "dubnium" (Db) adopted, after the Russian town of *Dubna*, the location of the Joint Institute for Nuclear Research, an institute prominently involved in the search for heavy elements.

The chemistry of dubnium has been studied for several years using gas thermochromatography, studying the relative adsorption characteristics of isotopes of niobium, tantalum and dubnium. Results indicate the formation of typical group 5 halides and oxyhalides.

Properties of Dubnium

| | |
|---------------------------------|--|
| Name | Dubnium |
| Symbol | Db |
| Atomic number | 105 |
| Atomic weight | [268] |
| Standard state | Presumably a solid at 298 °K |
| CAS Registry ID | 53850-35-4 |
| Group in periodic table | 5 |
| Group name | None |
| Period in periodic table | 7 |
| Block in periodic table | d-block |
| Color | Unknown, but probably metallic and silvery white or grey in appearance |
| Classification | Metallic |
| Melting point | No data available |
| Boiling point | No data available |
| Density of solid | 21.60 g/cm ³ (predicted) |
| Electron configuration | [Rn]5f ¹⁴ 6d ³ 7s ² |