

Topic Page: [dubnium](#)

Definition: **dubnium** from *Philip's Encyclopedia*

(symbol Db) Synthetic, radioactive transactinide element. Six isotopes have been synthesized. It was first reported by a Soviet team at Dubna in 1967. They claimed the isotopes of mass numbers 260 and 261, as a result of bombarding americium with neon ions. In 1970, a team at the University of California claimed the isotope 260 (half-life 1.6 seconds) obtained by bombarding californium with nitrogen nuclei. It was previously named hahnium. Properties: at.no. 105; r.a.m. 262.

Summary Article: **dubnium**

From *The Columbia Encyclopedia*

(dōb'nēəm), artificially produced radioactive chemical element; symbol Db; at. no. 105; mass number of most stable isotope 268; m.p., b.p., and sp. gr. unknown; valence +5. Situated in Group 5 of the periodic table, it has properties similar to those of niobium and tantalum. Dubnium-268, the most stable isotope, has a half-life of 1.2 days.

In 1968 a Soviet team led by G. N. Flerov at the Joint Institute for Nuclear Research at Dubna announced the discovery of element 105. They claimed that in 1967 they had isolated isotopes with mass numbers 260 and 261 and half-lives of 0.1 sec and 3 sec, respectively, by bombarding americium-243 atoms with neon-22 ions. In 1970 the same team announced that by using the same americium and neon isotopes but a different detection technique they had created an isotope of element 105 with mass number 261 and a half-life of 2 sec; they suggested that element 105 be named *nielsbohrium* to honor the Danish physicist Niels Bohr. In 1970, an American research team led by A. Ghiorso at the Lawrence Berkeley National Laboratory announced that, while they had been unable to confirm the Dubna group's results, they had synthesized an isotope of element 105 by another route. They bombarded californium-249 atoms with nitrogen-15 ions to create an isotope with mass number 260 and a half-life of 1.6 sec. Disputing the Soviet claim of discovery, the Americans suggested the name *hahnium* to honor the German chemist and physicist Otto Hahn.

An international committee set up to resolve such disputes decided in 1992 that the Berkeley and Dubna laboratories should share credit for the discovery. The syntheses of at least nine isotopes of dubnium, with half-lives ranging from 1.2 sec (Db-259) to 34 sec (Db-262), have been confirmed. In 1994 a committee of the International Union of Pure and Applied Chemistry (IUPAC), convened to resolve naming disputes for the transactinide elements, recommended that element 105 be named joliotium, symbol JI, after the French physicist Frédéric Joliot-Curie. In 1997 the name *dubnium* was accepted internationally for element 105, in recognition of the pioneering work done at the Dubna laboratory.

See also synthetic elements; transuranium elements.

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Dubnium. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from <https://search.credoreference.com/content/topic/dubnium>



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