

Astatine

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Astatine Latest News

Recently, an international collaboration led by researchers at the University of Jyväskylä, Finland, detected and measured the half-life of the heaviest proton emitter ^{188}At (astatine) isotope.

About Astatine

- It is a **rare and highly radioactive element** with atomic number 85.
- It is part of the halogen group (Group 17) in the periodic table, which also includes fluorine, chlorine, bromine, and iodine. Unlike the other halogens, astatine has **no stable isotopes**.

Features of Astatine

- It's probably a **dark-colored solid** at **room temperature** and pressure, but there is too little of it to know for sure. Due to its extreme radioactivity, it has a blue glow from ionizing air. All of its isotopes are radioactive.

- It occurs naturally as a decay product, but **has a short half-life**.
- It has **41 known isotopes** ranging from mass number **188 and 190-229**, all of which are radioactive.
- When the 188-astatine emits the proton, it becomes **187-polonium isotope**, which has a half-life of only 1.4 milliseconds. The 187-polonium isotope then decays via alpha decay into 183-lead and so on, until it reaches a stable nucleus.
- It likely forms compounds similar to iodine but exhibits more metallic characteristics.
- Astatine's **chemical properties most** closely resemble those **of iodine**.

Astatine FAQs

Q1: What is astatine used for?

Ans: It is mainly used for research. It is also used as a radioactive tracer and a treatment for thyroid cancer.

Q2: What is special about astatine?

Ans: Astatine is an extremely radioactive element.

Source: TH

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