

HACKMANITE: THE SODALITE THAT RESPONDS TO UV LIGHT

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Hackmanite is a variety of mineral species sodalite, but it has one especially cool thing going for it: tenebrescence. This refers to the material's ability to change color in response to exposure to UV light. The change is temporary, though, and can be reversed by removing the material from said UV light. In most cases, hackmanite turns pink to purple/violet after the exposure to UV radiation, according to a report from David Kondo and Donna Beaton published in GIA's *Gems & Gemology* journal.

The color change can be made repeatedly, but it's interesting to note that heating the material to more than 500°C will destroy the tenebrescence and the stones will stay in their "faded" state. Hackmanite is also highly fluorescent under long-wave UV light, showing a bright yellow-orange color.

The mineral was first discovered in Greenland in the late 1800s, but it wasn't until almost a century later that the first transparent gem-quality material was found in Quebec. In addition to Canada and Greenland, some form of hackmanite has also been found in Russia, Afghanistan, Myanmar, Norway, and even some in the U.S., according to Mindat.org.

While sodalite is fairly readily available in its traditional blue color, hackmanite is much rarer in supply and thus considered a collector's stone. It is usually found as translucent-to-opaque crystalline aggregates, often intergrown with other minerals, especially non-tenebrescent sodalite, Kondo and Beaton said in their report.



*A faceted hackmanite from Afghanistan.
(Image courtesy of John Bradshaw at John J. Bradshaw)*



*The same faceted hackmanite under a UV lamp.
(Image courtesy of John Bradshaw at John J. Bradshaw)*



A hackmanite with a faded purple color after storage in the dark (left), illuminated with long-wave UV light (center), and after removal from a few seconds of exposure to the long-wave UV light (right). The color has deepened after exposure to UV light.

Hackmanite has a Mohs hardness of 5.5-6, and the stones are brittle, with fair to poor toughness, making it hard to set. Use in rings or bracelets isn't advised, though featuring hackmanite in pendants or brooches is likely OK.



At left is a Burma hackmanite cabochon, and at right is the same Burma hackmanite after exposure to UV light.

(Images courtesy of John Bradshaw at John J. Bradshaw)

Trade professionals will know that, as is always the case with delicate stones, ultrasonics and steam cleaners should be avoided. Warm, soapy water is best for cleaning. ◆

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