Module B. Colour from the Cosmos

Lesson 14: Beryl Mineralogy and Gemology

Can Beryl be Produced Synthetically?

Synthetic beryl has been produced commercially for a number of years. Several different procedures have been successful in growing sizeable beryl crystals, mostly using a hydrothermal solution. These water-based ("hydro") solutions use hot ("thermal") fluids with the desired chemical components dissolved into them (e.g., Be, Si, Al, and Cr). When the solution is cooled, beryl crystals will nucleate and if given enough time, clean stones of sufficient size will be grown, faceted, and sold as synthetic emerald. [Chatham Created Emeralds](http://www.chatham.com/) and Gilson Emeralds are two such companies marketing synthetic emeralds. Aquamarine is found in abundant enough quantities and sizes that it is not produced synthetically for retail. However, it is commonly synthesized in laboratories with specific characteristics for academic studies on crystal structures.

Raw synthetic beryl grown hydrothermally and a faceted example of this material. Photo courtesy of the [Gemological Institute of America](http://www.gia.edu/).