

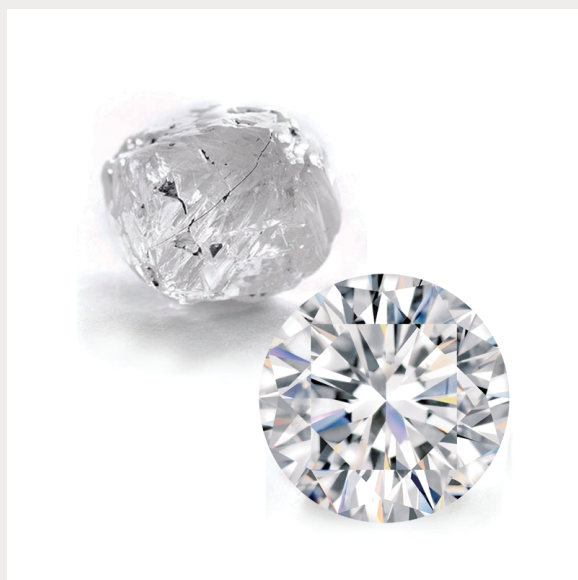


How to tell if a diamond is natural or synthetic

A synthetic diamond is produced in an artificial process in lab. It has the same chemical composition, crystal structure and physical properties as natural diamond. Synthetic diamond is mostly categorized in either High-Pressure High-Temperature (HPHT) or Chemical Vapor Deposition (CVD).

CVD diamond is a synthetic diamond produced by CVD technique that use moderate temperatures and very low pressures in a vacuum chamber and involves heating a hydrocarbon gas mixture. This CVD production requires smaller and less expensive equipment that make less costly.

HPHT diamond is a synthetic diamond produced under extremely high temperature and pressure inside special machines in a lab. Temperatures soar as high as 2,600 degrees Celsius to imitate the naturally occurring heat in the earth necessary to create a natural diamond.



In recent years, synthetic diamonds have become more common, high quality and harder to detect. With current technologies, lab can identify synthetics and treatments by diamond characteristics. A diamond is irradiated with ultraviolet radiation which is preponderantly of wavelength 225 nm or less.

Some of laboratories use two types of machines to detect synthetic diamonds. Light through the diamond and evaluate the spectral characteristics of the absorbed or emitted light. If it is detected and analyzed like a synthetic diamond, the labs use a secondary machine that utilizes ultraviolet light to reveal its inner structure.