GEMSTONE ENHANCEMENTS

ASSEMBLED: A

To improve durability or appearance. Assembled gemstones consist of two or more parts where at least one of these is a natural gemstone like in a doublet or triplet construction. The colored stone is sandwiched between a dark glass or semi-precious stone base and a protective natural crystal cap. The new three-layered stone is more resistant to impact and scratching than the original material.

BLEACHING: B

To lighten or remove color. Heat, light and/or other chemical agents are applied to the original material. This is especially common with pearl jewelry to remove discoloration on the surface of the pearl.

COATING: C

To improve the appearance by adding color or other special effects. Surface enhancements like lacquering, enameling, inking, foiling or sputtering of films are common in jewelry design. Modern gem coatings are indistinguishable from the gemstone- like the coatings that are applied to eyeglass lenses.

DIFFUSION: DF

To change color and/or introduce asterism-producing inclusions. Diffusion enhancements are often only detectable on a microscopic level. Chemical elements in conjunction with high temperatures are introduced to the molecular structure of a gemstone. For example, in natural gemstones the element chromium is typically responsible for a stone's green hue. By diffusing chromium to a neutral base material, you can transform it into a green gemstone.

DYEING: D

To enhance or change the color. One of the oldest gemstone enhancements, dyeing introduces pigment into a gemstone to give it new color, intensify its original color or improve color uniformity. Chalcedony quartz and agate are commonly dyed to produce a popular variety of colors. While these dyes are stable, you should take extra care to avoid prolonged exposure to moist heat.

FISSURE FILLING: FF

To improve durability or appearance or to add weight. Like getting a filling at the dentist, gemstone fissure filling introduces material to fill surface-breaking cavities or fissures within a gemstone. Fillers may consist of colorless glass, plastic, solidified borax or similar substances. These substances are typically fused with the original gemstone material through a heating process.

HEAT: H

To alter color or improve clarity. One of the most common gemstone enhancements, heat is slowly applied to gemstones at temperatures ranging from 200 to 2,000 degrees Celsius. Gemstones are formed under heat and pressure and this heat-only treatment can act as a continuation of Mother Nature's original design.

HIGH PRESSURE, HIGH TEMPERATURE: HPHT

To alter color clarity or phenomena. Like heat-only treatments, high-pressure, high-temperature treatments (HPHT) mimic the natural conditions under which gemstone are formed. This combination of heat and pressure can lighten, deepen or transform the color of a gem depending on the original material. The heat and pressure can also mend certain flaws or inclusions.

IMPREGNATION: I

To improve durability and appearance. Occasionally porous gemstones are impregnated with a colorless agent or polymer to stabilize a gemstone making it more durable and suitable for lapidary work.

IRRADIATION: IR

To alter color. In a laboratory setting, a gemstone is bombarded with subatomic neutrons, gamma rays or beta particles (high energy electrons) to alter the molecular structure of the gemstone material. The irradiation process is very safe and leaves no residual radioactivity in the gemstone material. Occasionally, this treatment may be followed by a heating process for added stability.

LASERING: L

To improve clarity. Typically used to enhance diamonds, a high-powered laser burns a whole in a colored inclusion in the stone. Then a chemical wash removes the coloring agent, improving the overall clarity of the gemstone.

OILING/RESIN INFUSION: O

To improve clarity and surface texture. Similar to fissure filling, the technique of infusing a gemstone with oil resin, wax or other colorless substances, improves the overall appearance of the stone. Glass and plastic are not used in the oiling/resin infusion technique.

PLATED: PL

To enhance the appearance- to protect/strengthen the surface. The surface of the gemstone is covered with a thin coating or film typically in a metallic material.

POLYMERIZATION: P

To improve durability and appearance. This form of enhancement uses the chemical bonding of two or more monomers to form polymers which are used as bonding agents.

STABILIZATION: S

To stabilize hardness and clarity. Stabilization is not a color enhancement. In this process, excess gemstone material and clear resin are mixed and applied to the original porous gemstone material. This color-matched mixture protects the gemstone while allowing it to retain its natural color.

WAXING/OILING: W

To enhance luster. The surface of porous, opaque or translucent gemstones is rubbed with a colorless wax paraffin or oil to improve the surface quality and add a shiny luster.

ZACHERY: Z

Turquoise is a porous gemstone and the Zachery treatment is a proprietary enhancement process used to decrease its porosity. This treatment prevents oxidation and discoloration of the stone due to agents like skin oils, cosmetics and sweat that the stone is exposed to during typical wear. This technique also improves the stone's ability to take a good polish and may improve the stone's color.