COLORED GEMSTONE REPORT

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Absorption Spectra

The absorption spectra are a reflection of the electromagnetic radiation absorbed by a colored gemstone over a visible range of wavelengths (approximately 400-800 nanometers). They are recorded on a graph that plots the transmittance against wavelengths.

Carat Weight

A carat is a unit of metric measurement used for colored gemstones. One carat (ct.) equals 100 points, 200 milligrams, or 1/5 of a gram.

Color

Colored gemstones are distinguished by their hue (primary impression of color), or by a combination of hue, tone (lightness), and saturation (strength). Typically, colored gemstones exhibit single colors. More unique phenomena — such as bi-coloration, color-change, play of color, asterism (star effect), or chatoyancy (cat's-eye effect) — can create distinctive stones.

Country of Origin

The country of origin is the presumed geographical source of a colored gemstone, discoverable only for particular stones with unique identifying characteristics.

Cut (Shape and Style)

Cut describes the silhouette or form created by a colored gemstone's contours and facets. Shapes vary from round to fancy cuts, such as cushion, emerald, heart, marquise, oval, pear, princess, and triangle. And style includes variations of brilliant, step, mixed, and cabochon cuts. Beautiful stones can be found in virtually any shape or style.

Fluorescence

Fluorescence refers to a colored gemstone's capacity to emit visible light when its atoms react to long- and short-wave ultraviolet rays. Fluorescence is measured for identification purposes and described on a scale from inert (none) to very strong.

GEMSTONE	COLOR										
	Colorless	Pink/Purple	Red	Orange	Yellow	Green	Blue	Violet	Brown	White	Black
Alexandrite											
Amber											
Amethyst											
Aquamarine											
Citrine											
Emerald											
Garnet											
Jadeite											
Kunzite											
Opal											
Peridot											
Ruby											
Sapphire											
Spinel											
Tanzanite											
Topaz											
Tourmaline											
Turquoise											

Gemstone Identification

Gemstones are minerals, rocks, organic, or inorganic materials that are, typically, cut and polished for use in jewelry. There are dozens of types of gemstones — including diamonds, colored gemstones, and pearls — each with a unique set of physical and optical properties.

Identifying Characteristics

Identifying characteristics (IC) are physical aspects of a colored gemstone that help to confirm its singularity or categorization. These can range from inclusions (fingerprints, needles, etc.) to modifiers caused by treatments (crystals with halos, reduced silks, etc.). In addition, IC can refer to instrument-based measurements such as refractive index, x-ray fluorescence, infrared spectra, Raman spectra, or specific gravity.

Measurements

Measurements for round colored gemstones are indicated by maximum–minimum diameter x depth, in millimeters. Fancy shapes are indicated by length x width x depth.

Refractive Index

The refractive index (RI) is the degree to which visible light bends as it passes through a colored gemstone. Each type of stone exhibits a unique RI or RI range — a result of its distinct chemical composition and physical crystallization. As such, RI is a strong identifying characteristic.

Transparency

Transparency refers to the amount of light transmitted through a colored gemstone. It is influenced by the texture of the material itself and the presence of inclusions. Transparency is rated on a scale of transparent (typically preferred), semi-transparent, translucent, semi-translucent, and opaque.

Treatments

The color or clarity of a colored gemstone can be enhanced by treatment techniques such as heating, diffusion, feather or fracture filling, irradiation, dyeing, or surface coloration.