



SIAMITE® Lab Grown Ceramic: Citrine, Topaz and other yellow, orange and brown gemstones reflections

November Birthstone and Their Gemstones: Citrine and Topaz

November is associated with two beautiful gemstones: **Citrine and Topaz**. The name **Citrine** is derived from the French word citron, meaning lemon, because of its characteristic yellow, yellow-orange, and brownish-orange hues. Light yellow Citrine is often referred to as "Lemon Quartz."



Unlike Citrine, **Topaz** exhibits a much wider range of colors, including colorless, blue, pink, violet, brown, yellow, golden, orange, and more. A variety known as "Imperial Topaz" is especially valuable for its reddish-orange to orange-red hues. Additionally, the yellowish gemstone group includes Heliodor ("Golden Beryl"), which ranges from lemon-yellow to golden-yellow.

These gems are often very similar in color, making them challenging to distinguish from one another. Therefore, we have included in this review all **Siamite® reflections** that feature yellow, orange, and brown tones.

Citrine is a member of the Quartz (SiO_2) mineral family, like Amethyst and Smoky Quartz, and shares the same physical properties: hardness of 7 (Moh's scale), specific gravity of 2.6 g/cm^3 , and refractive index of 1.544.

Topaz, a silicate with the chemical composition $\text{Al}_2\text{SiO}_4(\text{F},\text{OH})_2$, exhibits higher values in these properties: hardness of 8, specific gravity of $3.4\text{--}3.6 \text{ g/cm}^3$, and refractive index of 1.61–1.63.

Beryl ($\text{Al}_2\text{Be}_3\text{Si}_6\text{O}_{18}$), a beryllium-aluminum silicate, belongs to the same mineral group as Emerald and Aquamarine and has similar characteristics: hardness of 7.5–8, specific gravity of $2.67\text{--}2.78 \text{ g/cm}^3$, and refractive index of 1.565–1.602.

Comparison of The Key Properties

	SIAMITE® Lab-grown Ceramic	Natural Topaz	Natural & Lab-grown Citrine	Natural & Lab-grown Beryl	Cubic Zirconia	Glass (Crystal)
Hardness	7.5	8.0	7.0	7.5-8.0	8.0-8.5	5.0-5.55
Reflective Index	1.61-1.63	1.61-1.63	1.544	1.565-1.602	2.08-2.18	1.52-1.58
Specific Gravity g/cm^3	3.0-3.3	3.4-3.6	2.6	2.67-2.78	5.5-6.2	2.22-2.50
Wax-Castable	YES	NO	NO	NO	YES	NO

The attached table of physical properties compares these natural gems with their lab-grown analogs and imitations. It is evident that **Siamite®** is much closer to natural stones than **Cubic Zirconia (CZ)** and **Glass (crystal)**. CZ exhibits significantly higher hardness, refractive index, and density compared to both natural stones and Siamite®. Conversely, colored glass (including crystals from well-known brands) falls short in hardness, strength, brilliance, and density. Siamite® closely resembles Topaz in physical properties, differing only in having slightly lower density.

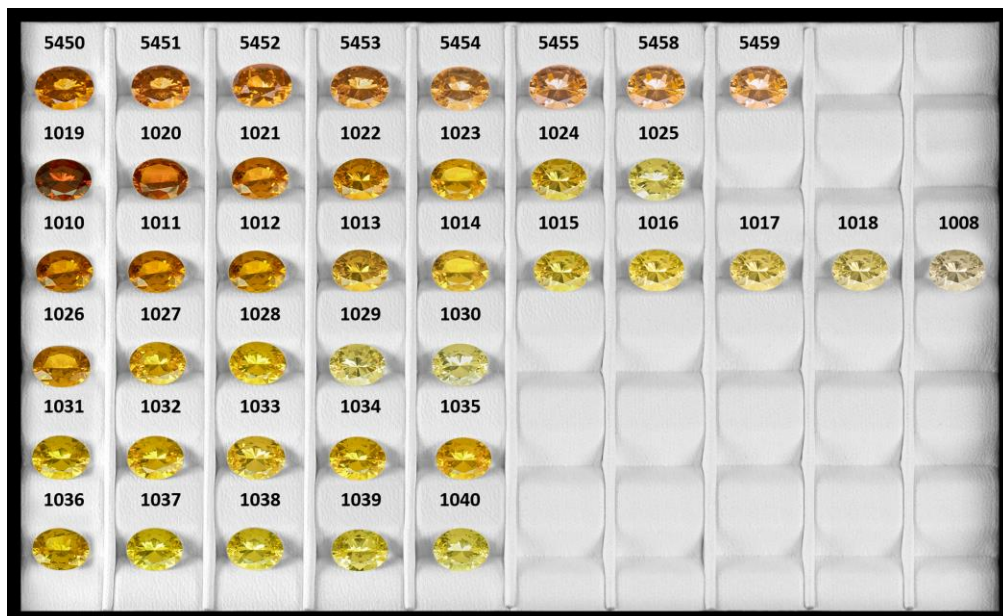
Lab-grown hydrothermal Citrine and Beryl are nearly identical to their natural counterparts in color, chemical composition, and physical properties. However, the main advantage of Siamite® over other lab-grown or imitation materials is its **resistance to thermal shock** and applicability in the technology of setting stones in wax with subsequent casting of gold, silver or brass. It is well known that glasses and lab-grown quartz, beryl, and some colours of CZ are destroyed or discoloured in “lost wax casting process”.

COLOR PALETTE:

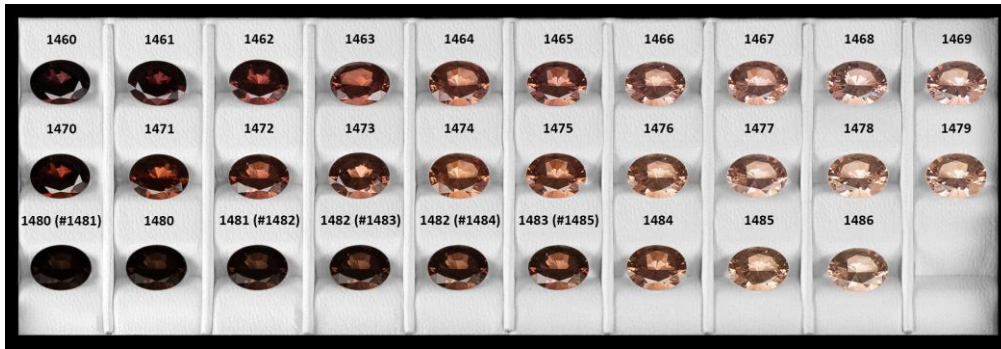
Yellow, Orange and Brown color Siamite® gemstones reflection consist of 9 groups and include a total of about 67 different colors, shades and saturations. These almost entirely cover the natural color range of the described gemstones, as clearly shown in the photos below.

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|--------------|-------------------------------|---|
| 1. 5450-5459 | Topaz Golden | Dark Orange Yellow to Light Pinkish and Orangish Yellow |
| 2. 1010-1018 | Topaz Canary | Dark Orangish Yellow to Extremely Light Yellow |
| 3. 1019-1025 | Citrine | Very Dark Orange Yellow to Very Light Yellow |
| 4. 1026-1030 | Beryl Golden Yellow | Medium Orangish Yellow to Extremely Light Yellow |
| 5. 1031-1035 | Quartz Greenish Yellow | Medium Strongly Greenish Yellow to Slightly Greenish Yellow |
| 6. 1036-1040 | Lemon Quartz | Medium Green Yellow to Very Light-Yellow Green |
| 7. 1460-1469 | Topaz Pinkish Brown | Extremely Dark to Very Light Pinkish Brown |
| 8. 1470-1479 | Topaz Brown | Extremely Dark to Very Light Brown |
| 9. 1480-1486 | Topaz Chocolate Brown | Extremely Dark to Very Light Strong Brown |

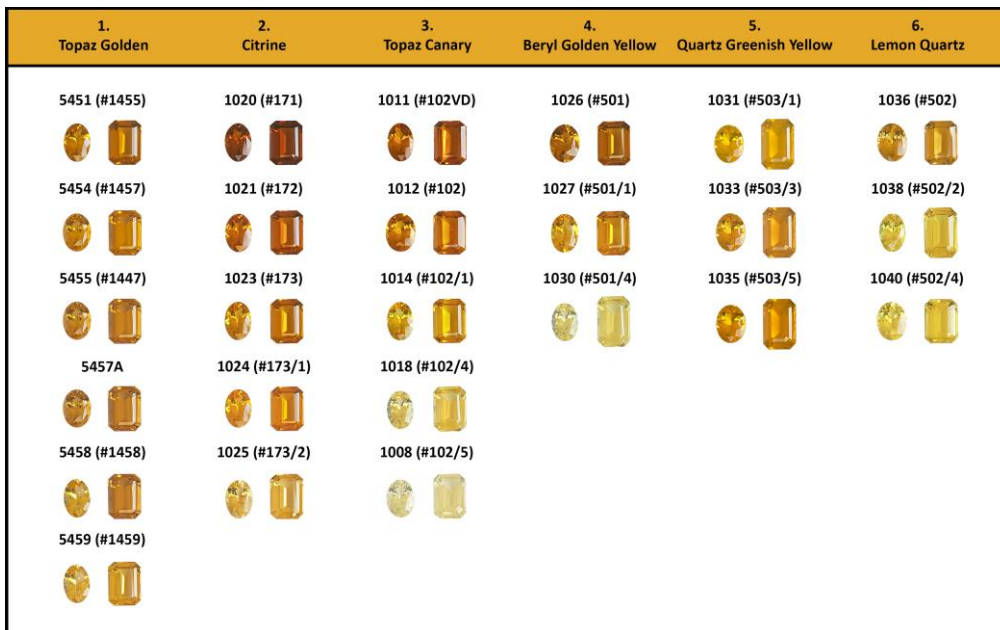
Picture 1. Oval 8x6: Yellow & Orange-Yellow



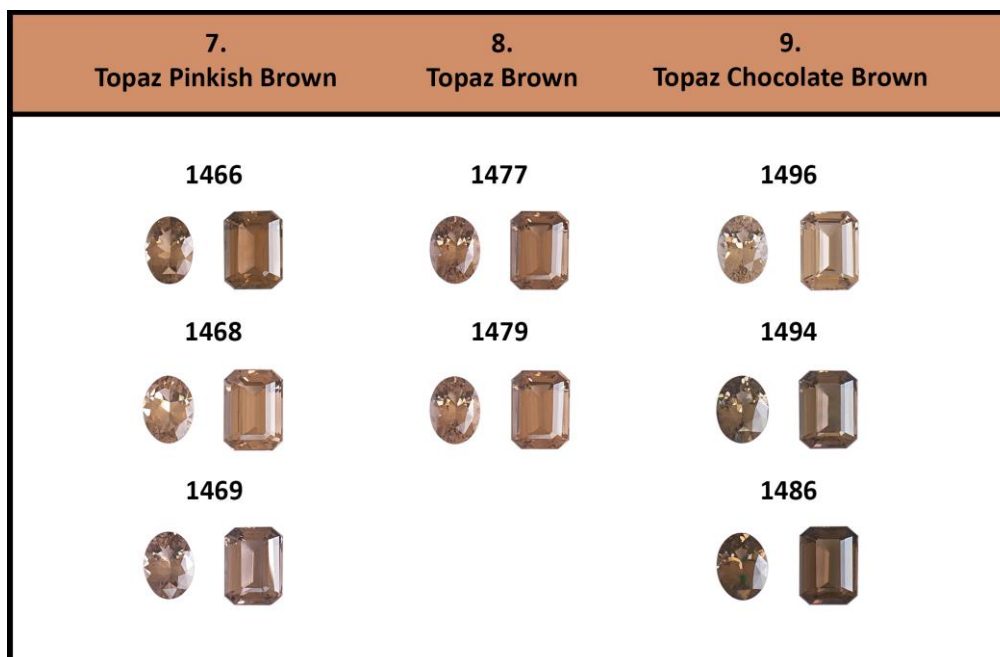
Picture 2. Oval 8x6: Brown



Picture 3. Oval & Octagon: Yellow & Orange-Yellow



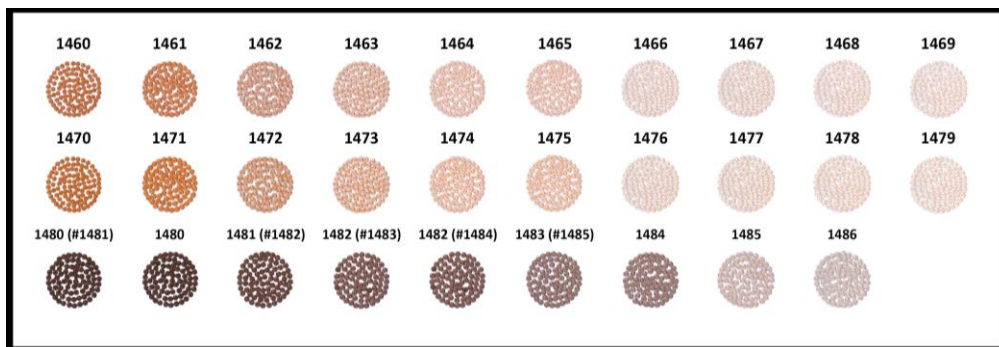
Picture 4. Oval & Octagon: Brown



Picture 5. Round 1.3 mm.: Yellow & Orange



Picture 5. Round 1.3 mm.: Brown



Externally, by color and luster, the human eye cannot distinguish Siamite® reflections of citrines, yellow-orange, and brown topazes from their natural counterparts. Standard gemological tools also cannot unambiguously determine the nature of these stones. Only chemical analysis and a more in-depth study of their physical properties can identify them as stones that do not occur in nature.

Compared to natural gemstones, Siamite® is significantly more affordable and available in an unlimited range of colors, sizes, and shapes. In addition to standard shapes and sizes, custom orders are accepted for fancy stones, including intaglios, cameos, and other 2D and 3D designs.

