

Celebrate the 250th Anniversary of the United States of America with Red, White and Blue Gems and Pearls



Red, white, and blue may be familiar colors, but the gemstones and pearls that display them are anything but ordinary.

To mark the United States' 250th anniversary, GIA explores this iconic palette through unexpected gemstones, distinctive cuts, and remarkable natural forms.

From a carved ruby depicting Abraham Lincoln to one of the world's rarest gemstones, this collection reveals how crystal structure, formation, and craftsmanship shape a gem's appearance just as much as color itself.

Featured examples include naturally formed pearls, overlooked colorless minerals, and a star-shaped blue gemstone that plays with symmetry and light.

“Red, white, and blue are instantly recognizable, but in gems and pearls, they are far from uniform. This mix highlights how those colors show up across different materials, offering a fresh perspective on a familiar palette.”

Nathan Renfro

Senior Manager of Colored Stones Identification, GIA

Featured Gems and Pearls:

RED

In gems, “red” can come from different causes, depending on the mineral. In ruby and red spinel, trace elements such as chromium help create vivid red color. In rhodochrosite, manganese plays an important role. These differences give red gemstones a wide range of appearances, from transparent and fiery to softer, banded, or more saturated.

Ruby



What Makes It Extraordinary: Ruby is one of the most valued colored gemstones. It ranks nine on the Mohs scale, making it highly durable. Fine-quality rubies display strong color saturation and a vivid red color.

Why It's Significant: Ruby is widely recognized and has a long history in fine jewelry. While most people associate ruby with faceted gemstones, the carved Abraham Lincoln example in GIA's collection demonstrates a lesser-known side of the stone: its potential for detailed, sculptural artistry.

Science Made Simple: Ruby is the red variety of corundum, an aluminum oxide mineral. Its red color comes from trace amounts of chromium present in the crystal structure. Corundum ranks nine on the Mohs scale, making it suitable for both faceting and carving.

Styling Note: Ruby is often used as a center stone in rings, pendants, and earrings where strong color defines the design.

Red Spinel



What Makes It Extraordinary: Spinel in its red form is defined by intensity—saturated, fiery color paired with exceptional clarity that allows light to pass through without interruption.

Why It's Significant: Historically known as “the great imposter,” many famous “rubies” in royal collections were later identified as spinel. The Black Prince's Ruby in the British Imperial State Crown is one of the most well-known examples. For centuries, spinel moved through empires as a symbol of wealth and conquest, often without being correctly identified.

Science Made Simple: Spinel is a distinct mineral with a cubic crystal structure. Unlike ruby, it has no birefringence, meaning light does not split into two rays as it passes through the stone. This contributes to its crisp, single-refracted brilliance resulting in a purer, more intense red. This color is caused by chromium.

Styling Note: With its durability (Mohs eight) and typically clean appearance, red spinel works well in both everyday jewelry and high-end designs, offering a bright refined alternative to ruby.

Rhodochrosite



What Makes It Extraordinary: Often associated with soft pink tones, the finest rhodochrosite can reveal a rich, saturated red, challenging traditional ideas of “red” gemstones. The South African specimen featured here showcases the vivid color and transparency that make exceptional rhodochrosite so sought after.

Why It’s Significant: Rhodochrosite expands the definition of “red” in gemstones. Beyond the uniform, highly transparent reds of ruby or spinel, it introduces a more complex spectrum, from intense raspberry-red crystals to richly banded materials, adding depth and variation to the category. Exceptional specimens have been discovered in several localities around the world, including South Africa and Colorado’s famous Sweet Home Mine.

Science Made Simple: Its red color comes from manganese. Under the right geological conditions, hydrothermal processes can produce transparent crystals with deep red saturation, rather than the more common opaque, banded forms.

Styling Note: Deep red rhodochrosite is often used in collector pieces and statement jewelry, where its saturated color and natural variation create visual impact distinct from more traditional red gemstones.

Red Beryl



What Makes It Extraordinary: Red beryl is among the rarest gem varieties in the world. Unlike ruby, which is found in multiple countries, gem-quality red beryl has been commercially produced from only one known locality: Utah’s Ruby Violet Mine.

Why It’s Significant: Its rarity has made red beryl one of America’s most distinctive gemstones. Production has remained extremely limited, with only a small percentage of recovered crystals suitable for faceting.

Science Made Simple: Red beryl belongs to the same mineral family as emerald and aquamarine. Its vivid red color comes from traces of manganese in the crystal, and it formed under rare volcanic conditions within Utah’s rhyolite deposits.

Styling Note: Because of its rarity and typically small size, red beryl is most often featured in collector jewelry and bespoke designs where the stone itself becomes the focal point.

WHITE OR COLORLESS

In gemology, “white” refers to gemstones that appear colorless, but far from being neutral, these stones reveal some of the most complex optical effects. Without trace elements to absorb light, they reflect and refract it fully, creating brilliance, fire, or in some cases, a more subtle, luminous glow.

Zircon



What Makes It Extraordinary: Colorless zircon is one of the most brilliant natural gemstones, known for its intense sparkle and strong fire with visible flashes of rainbow color as light disperses.

Why It’s Significant: It demonstrates that “white” gemstones are not visually neutral. Zircon’s ability to bend and return light gives it a lively, dynamic appearance that stands apart from other colorless stones.

Science Made Simple: Zircon’s high refractive index allows it to bend light significantly, while strong dispersion separates that light into spectral colors, creating fire.

Styling Note: Ideal for designs that prioritize sparkle and movement, zircon works well as a center stone or to add contrast alongside more saturated gems.

Beryllonite



What Makes It Extraordinary: Beryllonite offers a softer, more understated take on colorless gemstones, with a clean, luminous appearance rather than intense sparkle.

Why It’s Significant: Its origin in Maine provides a direct U.S. connection, while its relative obscurity introduces an unexpected gemstone into the conversation. Visually, it represents the quieter side of “white” — focused on clarity and light rather than brilliance.

Science Made Simple: Without color-causing trace elements, beryllonite appears transparent and colorless, allowing light to pass through with minimal distortion.

Styling Note: Best suited for designs that emphasize subtlety, negative space, or balance, where softer light reflection complements stronger colors.

Apophyllite



What Makes It Extraordinary: Apophyllite is prized for its exceptional transparency and crystal clarity, often appearing almost glass-like.

Why It’s Significant: Unlike most gemstones, apophyllite is rarely faceted due to its delicate structure, making cut examples both uncommon and technically demanding.

Science Made Simple: Its internal structure and lack of color-causing elements create a highly transparent appearance, but perfect cleavage makes it sensitive to heat and pressure during cutting.

Styling Note: Apophyllite is often appreciated for its natural clarity and structure, making it more common in collector pieces or designs that highlight the raw beauty of the material.

Pearls



What Makes It Extraordinary: Unlike gemstones that form within the earth, pearls are created by living mollusks. Their soft glow, known as luster, comes from layers of nacre that interact with light in a way that is unlike any mineral gemstone.

Why It's Significant: Often called “The Queen of Gems,” pearls have been prized across cultures for centuries. Before cultured pearls became commercially available in the early twentieth century, natural pearls were so rare that they were largely reserved for royalty and the wealthy.

Science Made Simple: Pearls are composed primarily of calcium carbonate and are formed through a natural biomineralization process inside mollusks. They are born from the unique intersection of biology and gemology.

Styling Note: Whether classic strands or contemporary designs, pearls remain one of the most versatile jewelry materials, pairing easily with both traditional and modern styles.

BLUE

In gemology, “blue” can appear in many forms, from transparent color to textured inclusions within another mineral. Trace elements such as iron, cobalt, and titanium can influence blue hues, while mineral structure affects how light moves through the stone. The result can be crisp and bright, deep and saturated, or patterned with natural variation.

Dumortierite



What Makes It Extraordinary: Dumortierite appears as rich blue fibers or inclusions within quartz, creating a distinctive, textured look that sets it apart from more uniform blue gemstones.

Why It's Significant: Rather than presenting blue as a single, even color, dumortierite reveals movement and variation within the stone itself. In GIA's collection, one example is cut into a star shape — an unexpected form that enhances.

Science Made Simple: In this stone, blue fibers are included within quartz, creating the gem's distinctive color, texture, and pattern in the stone.

Styling Note: Stones with visible inclusions are often used in statement pieces, where natural pattern and color variation become the focal point.

Blue Spinel



What Makes It Extraordinary: Blue spinel is known for its clean, vivid color and natural brilliance, often appearing bright and crisp to the eye.

Why It's Significant: While red spinel is historically tied to royal collections, blue spinel feels distinctly modern — less about intensity, and more about precision, subtlety, and tonal depth within the blue spectrum.

Science Made Simple: Its blue color is influenced by trace elements such as iron and cobalt, while its crystal structure creates an even, controlled reflection of light, giving the stone a calmer, more uniform appearance compared to more saturated blue gems.

Styling Note: Durable and versatile, blue spinel works well in everyday jewelry, from rings to earrings, particularly in clean, minimal settings where its tone and clarity can stand on their own.

Euclase



What Makes It Extraordinary: Euclase stands out for its exceptional clarity and saturated blue color, often appearing luminous and glass-like.

Why It's Significant: Often overlooked, euclase introduces a sense of discovery — expanding the blue category beyond the gemstones most people recognize.

Science Made Simple: Its color comes from traces of iron, while its crystal structure allows light to pass through cleanly, enhancing its clarity.

Styling Note: Due to its rarity and more delicate nature, euclase is typically used in special occasion or collector-focused pieces.

Benitoite



What Makes It Extraordinary: Benitoite displays a vivid blue color that can rival sapphire while often exhibiting even greater brilliance. Its striking appearance is enhanced by exceptionally strong light dispersion, creating flashes of spectral color.

Why It's Significant: Discovered in California in 1907, benitoite remains closely associated with the state and was officially designated California's state gemstone in 1985. Although found elsewhere in small quantities, the California deposit has produced the finest gem-quality material.

Science Made Simple: Benitoite's high refractive indices and strong optical dispersion help create its exceptional sparkle. Interestingly, despite decades of study, scientists still do not fully understand the exact cause of the mineral's blue color.

Styling Note: Its rarity and vibrant color make it especially appealing for collector jewelry and statement pieces that showcase unusual American gemstones.