FIRE OPAL;
A GEM OF FLAMES...

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Opal is classified as a "mineraloid" or mineral-like in scientific terms. It is a silica-gel made out of microscopic spheres with water molecules in between, therefore an amorphous material. While opal is a widespread material on earth's crust, gem quality opal is quite rare. Precious opal has a more regular structure compared to common opal. Tiny little silica gel spheres in its structure are of similar size and create the unique phenomenon known as "play of color."

Fire opal and diamond brooch. Courtesy of Bonham's.

Opal has been a popular gemstone for thousands of years despite its low durability. Ancient Romans called it "opalus" literally meaning "precious stone" and was revered as a symbol of love and hope. There are exhausted precious opal sources in Europe. For more than a century, Australia has been the classic locality for world famous precious opals. Australian opals are the benchmark by which all gem quality opals are evaluated. Today, Ethiopia is a well-established location for many different types of opals. Other countries, including Peru and Turkey, produce interesting opals without play of color effect but exhibiting unusual body colors. However, one particular country is famous with its fire opal, Mexico. A collector's delight, fire opal may be found in other sources like Australia, Ethiopia, and Turkey but Mexican fire opal is the most desirable.

Fire opal and diamond earrings. Courtesy of Heritage Auctions.

Fire opal owes its name to its body color. Whether with or without play of color effect, the body color ranges from light yellow to deep reds and oranges.

There is also a transparency factor as most fire opals are translucent. Once it is transparent to translucent, it becomes a good candidate for faceting. Majority of opals are cut as cabochons to display the phenomenon, yet fire opal makes an exception with its attractive body colors. Nonetheless, if a fire opal has play of color against a contrasting body color with transparency, it is graded in fine to extra fine category and fashioned into a cabochon or freeform gem.

Gem professionals are familiar with synthetic and imitation opals. They are relatively easy to identify via conventional gem testing methods. However, opal's amorphous structure makes it vulnerable to water loss creating fine fissures in the gem. This is known as crazing in gemology. Once crazing forms, it is not possible to heal it. A common treatment seen in opal is dying. Again, due to its own structure, opal takes liquid dyes easily. Enhancing a light colored fire opal into a red one is well known. This method along with resin treatment may be seen on lower grade material, most probably in beads and small cabochons. Magnification is the best method to detect such treatments. Opals, being low in durability, require careful use in jewelry. Protecting them from direct sunshine while displaying or keeping them apart from other jewelry items while storing should be basic practices. ◆

Freeform Mexican fire opal, 9.52 carat.
Courtesy of Bonhams.

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