

Timur Ruby : Is it ruby or Spinel ?

Spinel is a gemstone that has confused for centuries with Ruby. Red spinel is indistinguishable from ruby by the naked eyes. The giant red gemstones set in the centre of Imperial State crown and necklace of Queen Victoria which are most famous in the entire world as the "Black Prince's Ruby" and "Timur Ruby" respectively. King Timur possessed "Timur Ruby", which has changed hands from Timur to Mughals to Duleep Singh. It was given as a gift to Queen Victoria in 1851 subsequent to annexing Punjab in 1849 by East India Company.



Top quality red Spinel and Ruby have superb pure red colour, and they actually fluoresce, or glow in natural light. These similarities led to some confusion in early history when people classified gems only by their colour. It comes in an extraordinary spectrum of colour, not just red and blue but vivid pinks, orange and brown. All blue gems are called as sapphire, all green gems as Emerald and all red gems as Ruby. Now it is clear that gems of same colour are not necessarily the same kind of material. Ruby is a crystalline Aluminium Oxide with chromium impurities and spinel is Magnesium Aluminium Oxide, its colour is due to the presence of chromium and iron impurities.

There is no authentic referenc

e about who identified Timur Ruby as spinel although in 1783, the French mineralogist Jean-Baptiste identified Spinel as different from Ruby by studying its gemmological and chemical properties. Since then, all other typical properties are well known and, Ruby and spinel could be differentiated. Spinel is singly refractive, it belongs to cubic crystal system with a refractive index of 1.715. Specific gravity of spinel varies from 3.58 to 3.64 and It has a hardness of 8 on the Mohs scale. Ruby is dichroic, its hardness is 9 and specific gravity varies from 3.99 to 4.00. Since hardness of the Spinel is lesser than Ruby, the gem traders of Myanmar were the first to recognize Spinel as being different from Ruby, based on the experience of cutting and polishing. That is why Spinel is called as "naram" in Indian market. However, suffered in popularity as it is classified as "semi-precious". Recently, the demand for and value of Spinel have increased sharply due to its attractive colour. As a result, the Spinel is the second most important and popular red gemstone after Ruby. Major sources of Spinel are Tajikistan, Burma, Vietnam, Madagascar, Sri Lanka and Tanzania. Natural Spinel is generally free of treatment. Due to its rise in demand, Spinel is being synthesized in Laboratories and some treatments are in vogue.

GII has the expertise and laboratories to distinguish Spinel from rubies, and also treatments if any, by its chemical and optical properties using Microscope and other tools of gem identification. Raman

spectroscopy and photoluminescence are very effective methods for identification of Spinel and helpful in determining their heated status.

References:

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