

PARAIBA TOURMALINE

Paraiba is a beautiful cupriferous tourmaline. They are rare and precious. These gemstones were discovered by Heitor Dimas Barbosa in the 1980s in the Brazilian State of Paraiba. The word Paraiba comes from a gemstone with blue to green tones of extraordinary vividness. In 2003, Tourmalines from Africa with Paraiba like qualities entered the market, these tourmalines are from copper rich mountains of Nigeria and Mozambique



Chemical composition analysis reveals the presence of different elements in Paraiba gemstone. Most accepted combinational formula is $((Ca,K,Na,[])(Al,Fe,Li,Mg,Mn)_3(Al,Cr,Fe,V)_6(BO_3)_3(Si,Al,B)_6O_{18}(OH,F)_4$. Abundant amounts of manganese and copper are responsible for colours. Presence of element copper in Paraiba Tourmaline is the cause of splendid Neon bright colour. Its with colours range from startling turquoise to majestic blue-green, but it is the incandescent glow that appears to light up the stone which makes Paraiba tourmalines incomparable to any other gem. The extraordinary vividness of the Paraiba tourmalines reveals by cutting & faceting. They scintillate an unusual 'fire' and appear to glow intensely even in very little light which is to as 'electric' or 'neon'.

Copper in high concentrations is responsible for the highly coveted radiant blue, turquoise and green hues, while violet and red tones are caused by the presence of manganese. Experienced cutters eliminate the red colour components by the burning technique to retain only blue colour.

In GII (Gemmological Institute Of India), We have received some Paraiba type coloured Tourmalines. The Standard gemmological testing by expert gemmologists, followed by analyses of the major, trace element concentration for each sample with Energy Dispersive X-ray Fluorescence (EDXRF), Raman spectroscopy (for identification), and UV Visible spectrometers (for chromophores) help in determining quality and origin of this interesting gemstone.

References:

1. <http://www.thejewelleryeditor.com/jewellery/article>
2. <https://www.gemstone.org/education/gem-by-gem/227-paraiba-tourmaline>