

# Tourmaline

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## Tourmaline

This romantic-sounding gem stone first appeared on the scene early in the eighteenth century, when merchants from Ceylon brought a parcel of these stones to Europe. Its name is taken from the Sinhalese word turмали, meaning "attractor of ashes." If rubbed or heated, tourmaline becomes strongly charged with electricity, and, in this state, will readily attract dust particles. Chemically, it is a highly complex silicate of the elements boron and aluminum with magnesium, iron, and the metals sodium, potassium, and lithium present in varying quantities.

Its complex chemical composition can be described by the formula  $(\text{Na,Ca})(\text{Li,Mg,Fe,Al})_9\text{B}_3\text{Si}_6(\text{O,OH})_3\text{i}$ . In its gem varieties, tourmaline produces a galaxy of colors that surpass all other gem minerals in their versatility. Because of this, it has become increasingly popular as a gem stone and, although its hardness is only 7,3, is much worn in rings and brooches. The reason for its great color versatility lies in its varying chemical composition: tourmalines containing iron will usually be black; those containing sodium, potassium, or lithium may be red, green, or colorless. Then again, those containing magnesium will be yellow, brown, or black.

Tourmaline is a common rock-forming mineral and is widely distributed all over the world. Gem-quality stones are found in the Ural Mountains, where magnificent pink, blue, and green crystals have been mined. Other sources are the state of Minas Gerais in Brazil, the islands of Madagascar and Ceylon, and California.

Apart from their rare beauty, tourmaline crystals are often particolored, the two extremities of the slender prismatic crystals exhibiting different hues. Indeed, ring stones where one half of the stone is a soft pink, and the other half the green of the oceans, are sometimes met with. Tourmaline, more than most other doubly refractive gem stones, exhibits a directional property of crystals known as 'dichroism, or the property by which the color of a crystal may vary according to the direction in which it is viewed.

This phenomenon is particularly striking in green and brown tourmalines, which in certain directions will prevent all light from penetrating them, but in others will appear transparent and colorful. Tourmaline is therefore yet another gem stone where the knowledge of the lapidarist must be correctly applied so as to obtain the best results when it is cut into a gem.