

What is the difference between chrysoberyl and alexandrite?

Chrysoberyl is the species name and Alexandrite is the variety name. Alexandrite is that variety of chrysoberyl that changes color as a function of the light source; green in daylight and red under incandescent light.

Chrysoberyl is normally yellow, yellow-green, or brownish with its color being caused by the presence of iron. Spectroscopic analysis will reveal a strong band where the violet takes over from the blue. As the color darkens from bright yellowish-green to golden-yellow to brown, this band increases in strength. When the stone has a strong color, two additional bands can be seen in the green-blue. The most common inclusions are liquid-filled cavities containing three-phase inclusions. Stepped twin planes may be apparent in some cases. Some very rare mint bluish-green chrysoberyls from Tanzania owe their color to the presence of vanadium. These stones are quite rare and exceptional specimens can command prices as high as alexandrite.

Alexandrite results from the small scale replacement of aluminum by chromium in the oxide resulting in alexandrite's characteristic green to red color change effect. Its rarity is due to the requirements for two kinds of minerals, - one providing aluminum and beryllium and the other providing chromium oxide. Only chrysoberyl displaying a distinct change of color should be designated as alexandrite. Since stones with a weak color change could be identified as either alexandrite or chrysoberyl, depending on the degree of change, the determination can easily be subjective.

As the color change in alexandrite is due to the presence of chromium, and the color of yellow or brown in ordinary chrysoberyl is due to the presence of iron, spectroscopic examination will reveal these differences and help with identification. Chrysoberyl usually shows no fluorescence. The red fluorescence of alexandrite is only evident using the "crossed filter" method.

See Alexandrite Tsarstone collectors guide, What is the difference between chrysoberyl and alexandrite?, <http://www.alexandrite.net/viewpage.html?id=GG-0122> (Chrysoberyl is the species name and Alexandrite is the variety name. Alexandrite is that variety of chrysoberyl that changes color as a function of the light source; green in daylight and red under incandescent light.) (as of).