



Mineralogy, Chemical Compositions, and Gemological Characteristics of Larvikite

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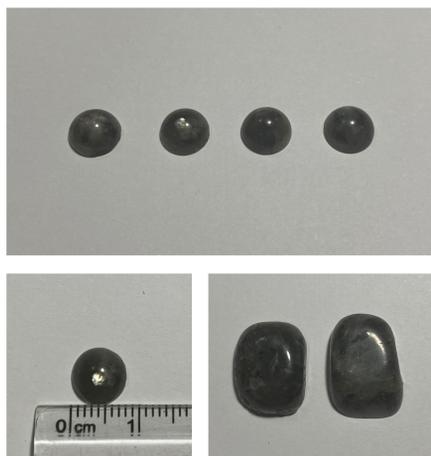
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Introduction

Larvikite is a gem that shows the blue-gray labradorescence, which occurs from alternated layers of alkali feldspar and plagioclase. Major constituents included alkali feldspar that showed perthitic texture. Minor components were augite, biotite, apatite, and opaque minerals. Larvikite is popular as a magical stone, a sacred gem. It is a stone of protection, helping to destroy negative. Currently, the popularity of sacred stones and gems has led to the naming of various gems, which may have similar appearances and cause confusion for both buyers and sellers. This study is therefore a collection of information about Larvikite, covering mineralogy, chemical composition, and gemological characteristics.

Methodology

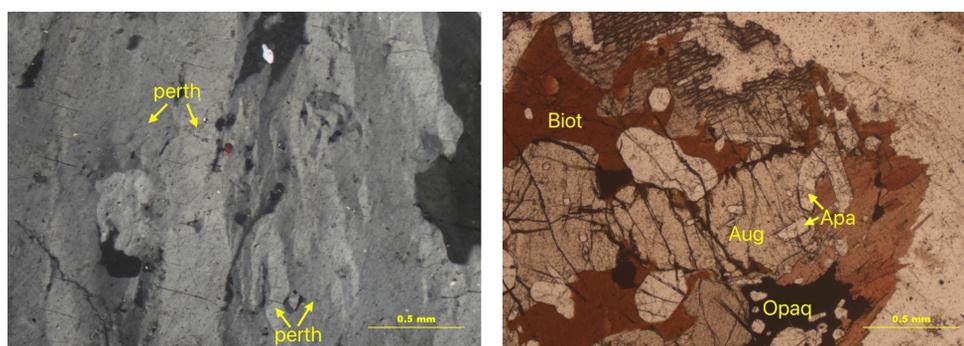
32 samples with a weight between 1.57-28.53 carats were studied for their gemological properties, mineral constituents, and chemical compositions using basic instruments including Hydrostatic Weight, and advanced instruments analysis including a Scanning Electron Microscope and Energy-Dispersive X-ray Spectroscopy (SEM-EDS) to analyze the chemical composition and structure, and X-ray Diffractometer (XRD) to examine the mineral composition.



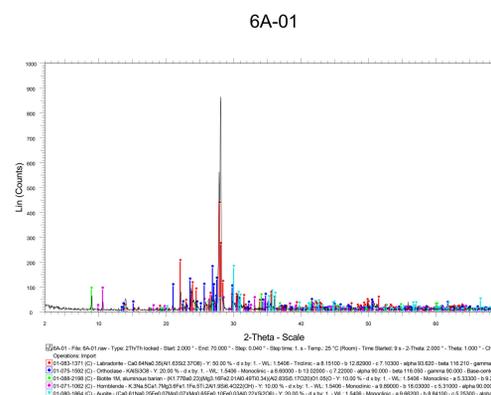
Results

The samples were gray-black and polished in a fancy and spherical shape with a specific gravity in the range of 2.62-2.90.

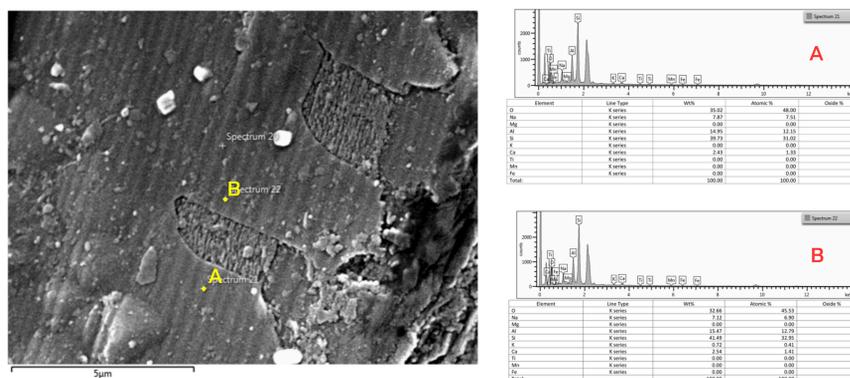
Petrographic studies exhibited phaneritic texture with major constituents including alkali feldspar that showed perthitic texture (perth). Minor components were augite (Aug), biotite (Biot), apatite (Apa), and opaque minerals (Opq). Modal analysis indicated that these studied samples were augite syenite-monzonite.



X-ray diffraction technique showed the mineral assemblages where labradorite, orthoclase, biotite and augite were found.



SEM-EDS the study of surface morphology exhibited fine lamellae of perthitic pattern, which further chemically confirmed by EDS for their ternary feldspar characteristics with the presence of alternatively ratio of K: Na: Ca in each band.



References

www.wikipedia.org
www.gemdat.org
www.alexstrekeisen.it