

Occurrence of Rodingite in Ciletuh Ophiolitic Mélange Complex: First Initial Report of Rodingite in Indonesia

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The existence of ophiolitic mélange in the Indonesian archipelago have been recognized as the key areas in the paleo-tectonic reconstruction of the Southeast Asia Region. However, the existence of rodingite as part of ophiolite in Indonesia has never been reported in detail. Rodingites in Ciletuh Ophiolitic Mélange (Ikham et al., 2018) in western Java, are fresh and widespread, which provide a good opportunity to initiate a detailed rodingite research, especially related to their associations with serpentinite and gabbroic rocks. This study will discuss about the field description and outcrop sketches, microscopic analysis of thin sections, and identification of minerals using Raman Spectroscopy and SEM-EDS.

Rodingitized gabbro in Ciletuh occur as dykes intersecting serpentinitized peridotite with firm and diffuse contact. These dykes are controlled by faults in direction opposite perpendicular or diagonal to the shearing direction. Sheared and foliated rodingite and serpentinite are common, usually forming boudinages. Blackwall chlorite reaction zones can be encountered at the contacts between rodingite and serpentinite. Serpentinization occurs in approximately 15-90% of peridotite which characterized by ribbon-like textured serpentine minerals, mesh texture in mostly orthopyroxene (bastite), with serpentine \pm magnetite veins intruding serpentine mesh, orthopyroxene and spinel. Two samples of low degree serpentinization of lherzolite consist of olivine (42%), clinopyroxene (20%), orthopyroxene (10%), spinel (3%), and opaque (3%) with serpentine (17%) \pm chlorite \pm magnetite. Rodingitized gabbro are fine- to coarse-grained and composed of altered plagioclase (47-49%), clinopyroxene (29-32%) and orthopyroxene (22-24%), with minor opaque (2-4%). Plagioclase are strongly altered to hydrogrossular garnet, sericite and small amount of epidote. Rodingitization is thought to arise as a result of Ca-rich fluid metasomatism of the gabbroic dyke protolith along with serpentinization of peridotite.

Keywords: Rodingite, Serpentinite, Ciletuh, Ophiolite