

The occurrence of jadeite in the ultramafic body discovered in the Sanbagawa belt, Shibukawa region, central Japan

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The Sanbagawa belt is a representative high-pressure metamorphic belt of southwestern Japan. Shibukawa region is located along the border of Aichi and Shizuoka prefectures and consists of the Sanbagawa crystalline schist group and the Mikabu greenstone group. The Sanbagawa group consists of pelitic, psammitic and siliceous schists and the Mikabu group consists dominantly of greenstones with hornblende, metagabbro and ultramafic bodies. Both groups occur alternatively in the region. The blueschist phase indicators such as jadeite, glaucophane and lawsonite have been reported previously. In particular, jadeite occurs in metagabbroic rocks surrounded by ultramafic rocks or lawsonite-bearing schists (Seki, 1960; Seki et al., 1960). From our field observation, we discovered jadeite-bearing veinlet was discovered in a dunite block of the Shibukawa ultramafic body. The veinlet cut through the dunite block and occur ~5mm in width. The veinlet consists of diopside, grossular garnet, chlorite and relict olivine in addition to jadeite, and minor euhedral magnetite. Jadeite grains occur as anhedral patches in the grossular grains and their grain sizes are less than 100 μ m. The major element compositions of jadeite are rich in Na and Al (Na_2O =14.7–15.4 wt.%; Al_2O_3 =24.3–25.5 wt.%) and poor in Ca (CaO =0.4–1.3 wt.%). Jadeite values ($=(\text{Na}-\text{Fe}^{3+})/(\text{Na}+\text{Ca})\times 100$) are 92–97%. In this study, we present the occurrence and chemical compositions of jadeite in detail and discuss how this high-pressure mineral has been taken place in the Shibukawa region.

References

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