

INTRODUCTION TO JAPANESE MINERALS

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“INTRODUCTION TO JAPANESE MINERALS”

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20. Iimoriite $(Y, Ca, Zr)_{15}(Mg, Fe^{2+}, Al)(Si, Al, P)_3O_{34}(OH)_{16}$

Crystal system. Triclinic with super structure along b and c axes.

Space group. $P\bar{1}-C_1^1$ (subcell), but the true cell may be $P1-C_1^1$.

Unit cell. $a_0 11.6 \pm 0.05 \text{ \AA}$, $b_0 2 \cdot 6.65 \pm 0.05 \text{ \AA}$, $c_0 2 \cdot 13.1 \pm 0.1 \text{ \AA}$, $\alpha 94.3^\circ \pm 0.1^\circ$, $\beta 95.0^\circ \pm 0.1^\circ$, $\gamma 93.6^\circ \pm 0.1^\circ$.

Refractive indices. $\alpha 1.786$, $\beta = \gamma 1.827$ (all ± 0.005).

Optic axial angle. $2V(\) 5-15^\circ$.

Dispersion. Indiscernible.

Colour. Light purplish gray, colourless in thin section.

Lustre. Vitreous.

Streak. White with purplish gray-tint.

Cleavage. (011) distinct.

Hardness. 5.5-6.

Specific gravity. 4.21 (meas.), 4.22 (calc.).

Chemical composition. ΣY_2O_3 64.99, ΣC_2O_3 0.83, Ce_2O_3 0.09, ThO_2 0.11, U_3O_8 0.88, $(Zr, Hf)O_2$ 1.43, CaO 0.85, MgO 0.71, Fe_2O_3 1.33, Al_2O_3 1.31, P_2O_5 0.91, SiO_2 19.09, $H_2O(+)$ 5.85, $H_2O(-)$ 0.87 = 99.25%.

Occurrence. It occurs as masses up to $3 \times 3 \times 2$ cm in size in quartz-microcline-pegmatite at Fusamata, Kawamata-machi, Fukushima Prefecture, Japan.

Associated minerals are biotite, monazite, fergusonite, uraninite and an undetermined mineral. It is also known from the neighbouring Suisho-yama pegmatite as alteration product of thalenite in association with tenerite.

Name. The name is for Dr. S. IIMORI and the late Dr. T. IIMORI, who first described many rare earth minerals from the pegmatite in this district.



Fig. 24. Iimoriite, Kawamata-machi, Fukushima Prefecture (SAKURAI Collection) $\times 2.2$.

Remarks. Iimoriite was originally studied by A. KATO and K. NAGASHIMA in 1967. The mineral was approved by the Commission on New Minerals and Mineral Names, IMA. But the full report of this mineral has not yet been published.

21. Akaganeite β -FeOOH

Crystal system. Tetragonal.

Space group. $I4/m-C_{4h}^5$.

Unit cell. a_0 10.50Å, c_0 3.03Å.

Refractive indices. Approximately ε 1.95, ω 2.0.

Pleochroism. Moderate, yellow to brownish yellow.

Colour. Orange to brownish yellow.

Crystal habit. The mineral occurs in powdery aggregates of very fine crystals, elongated [001] and flattened (100) up to $0.3 \cdot 0.03\mu$ in size (Fig. 25).

Occurrence. The mineral occurs in the weathered outcrop of the Akagane pyrometasomatic copper-iron mine, Iwate Prefecture, Japan. The deposits of the mine is in Carboniferous green rock, and the mineral appears to have been formed after pyrrhotite. Associated minerals are goethite, melanterite and two kinds of unknown iron sulfate.

Name. The name is for the locality, Akagane mine.

Remarks. New occurrences of this mineral have recently been reported from Richelle, Belgium (VAN TASSEL, 1959), Tharia, India (CHANDY, 1962), Questa mine, New Mexico (ISHIHARA, 1967) and others.



Fig. 25. Electron micrograph of Akaganeite, Akagane mine, Iwate Prefecture (Photographed by M. NAMBU).