

A new occurrence of fenite from the Loch Borralan Alkaline Complex, Assynt

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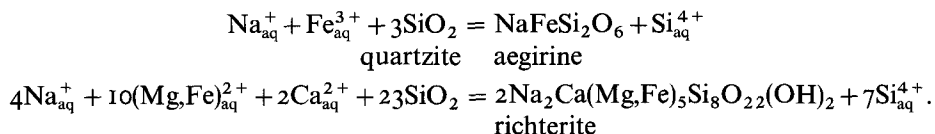
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A FENITE from a new locality from the Borralan Complex, Scotland, is described. It is from the SW. part of the Complex near to the cromaltite outcrop, and it comprises a moss-covered, blue-grey boulder. In thin section the rock is seen to consist of an inhomogeneous combination of stubby, greenish pyroxene prisms, an amphibole, feebly pleochroic in shades of blue, apatite, and minor interstitial potassium feldspar. Petrographically the rock is similar to some of the fenitized quartzites from the Borralan Complex described by Woolley *et al.* (1972).

Electron-microprobe analyses of microcline, apatite, aegirine-augite, and alkaline amphibole are given. The feldspar sometimes has microcline cross-hatching and varies from Or_{95.6} to Or_{96.2}. The pyroxenes vary from Di₄₇Hd₇Ac₄₆ to Di₃₃Hd₅Ac₆₂, similar to previously analysed Borralan fenite pyroxenes (Woolley *et al.*, 1972), and a composition not found amongst igneous pyroxenes. The amphiboles are richterites according to the definition of Leake (1968).

The modal composition of the rock is discussed and compared with previously described Borralan fenites. Possible parental source rocks for this fenite are considered but a quartzitic parent is preferred, principally because of similarities with unequivocally fenitized quartzites described from elsewhere at Borralan (Woolley *et al.*, 1972).

This fenite may represent an extreme product of such replacement reactions as:



In the latter reaction some of the Mg and Ca may have come from decarbonation of Durness limestone rather than the fenitizing magma, which perhaps explains the rather high Mg/(Mg + Fe²⁺) of the amphibole and pyroxene.

REFERENCES

- Leake (B. E.), 1968. *Geol. Soc. Am. Spec. Pap.* **98**.
 Woolley (A. R.), Symes (R. F.), and Elliott (C. J.), 1972. *Mineral. Mag.* **38**, 819-30.

The full text in the 'miniprint' section of this volume, p. M7.

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