

## NOTES – NOTISER

*Contribution to the mineralogy of Norway, No. 63*

### Osumilite, a mineral new to Norway

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A new occurrence of osumilite has been found in the charnockitic Precambrian of Rogaland, SW Norway. The osumilite has been discovered in an outcrop of slightly banded high-grade metapelitic rocks, designated as garnetiferous migmatites by Hermans et al. (1975), near Vikeså. Here the osumilite is a common constituent, giving the rocks a purplish appearance. It is accompanied by quartz, orthoclase-mesoperthite, plagioclase (An 28), distinctly pleochroic orthopyroxene, green spinel/magnetite intergrowths, garnet, and some biotite.

The osumilite forms large (up to 1 or locally 2 cm) and often irregular crystals or crystal aggregates. It has refractive indices similar to those of quartz and cordierite:  $n_o = 1.539 \pm 0.001$  and  $n_e = 1.546 \pm 0.001$  as determined with the immersion method, and birefringence is slightly smaller: 0.007, as determined with a Berek compensator. The Rogaland osumilite is uniaxial positive or anomalously biaxial positive with small but varying optic axial angle  $2V_z = 0 - 30^\circ$ . The mineral is colourless in thin section, but pale pink pleochroic in thick grains with  $n_o =$  pink and  $n_e =$  colourless. X-ray diffraction data are listed in Table 1 and show the osumilite to be hexagonal with  $a_o = 10.114 \pm 0.001 \text{ \AA}$  and  $c_o = 14.334 \pm 0.002 \text{ \AA}$ . Microprobe analyses are given in Table 2, and the resulting formula is:

$(K_{0.80}Na_{0.19})(Mg_{1.46}Fe^{2+}_{0.55}Mn_{0.02})(Al_{2.67}Ti_{0.03}Mg_{0.30})(Si_{10.13}Al_{1.87})O_{30}$ .

This new occurrence of osumilite, the sixth in the world, is situated at a distance of approximately 2 km from the anorthositic base of the well-known Bjerkreim-Sokndal lopolith. The physical and chemical characteristics, the mineral assemblage, and its mode of occurrence are, then, very similar to the recently described osumilite from the contact aureole of the anorthositic Nain complex, Labrador, Canada (Berg & Wheeler 1976).

Table 1. X-ray diffraction data of osumilite, Rogaland, Norway, compared with the equivalent d-values and intensities of synthetic osumilite (Schreyer &amp; Seifert 1967).

(hkl)	Rogaland			synthetic		
	d(observ.)	d(calc.)	I*	d(observ.)	d(calc.)	I
(0002)	7.17	7.167	19	7.18	7.159	47
(10 $\bar{1}$ 2)	5.54	5.5468	9	5.54	5.535	15
(11 $\bar{2}$ 0)	5.058	5.0570	26	5.04	5.039	59
(20 $\bar{2}$ 0)	4.381	4.3765	7	4.364	4.364	14
(11 $\bar{2}$ 2)	4.133	4.1320	31	4.122	4.121	38
(20 $\bar{2}$ 2)	3.735	3.7370	45	3.726	3.726	45
(0004)	3.584	3.5835	17	3.582	3.579	51
(10 $\bar{1}$ 4)	3.32	3.3167	15	3.313	3.312	27
(21 $\bar{3}$ 1)	3.226	3.2257	100	3.213	3.215	100
(21 $\bar{3}$ 2)	3.006	3.0054	9	2.995	2.996	11
(11 $\bar{2}$ 4)	2.925	2.9238	51	2.919	2.918	61
(20 $\bar{2}$ 4)	2.774	2.7735	48	2.768	2.767	64

\* intensities measured from diffractogram.

Table 2. Chemical analysis of osumilite, Rogaland, Norway\*.

SiO <sub>2</sub>	60.37
Al <sub>2</sub> O <sub>3</sub>	22.95
TiO <sub>2</sub>	0.22
FeO (tot.)	3.95
MnO	0.13
MgO	7.02
Na <sub>2</sub> O	0.59
K <sub>2</sub> O	4.14
Cr <sub>2</sub> O <sub>3</sub>	tr.
CaO	tr.
BaO	tr.
Total	99.37

\* Analysed with electron microprobe constructed by Technisch-Physische Dienst TNO – TH Delft, Netherlands, and purchased by ZWO (Netherlands Organization for the Advancement of Pure Research).

## REFERENCES

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