

Agrellite**NaCa₂Si₄O₁₀F**

©2001 Mineral Data Publishing, version 1.2

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Crystals elongated || [001], to 10 cm; platy aggregates.

Physical Properties: *Cleavage:* Excellent on {110} and {1 $\bar{1}$ 0}, poor on {010}. Hardness = 5.5 D(meas.) = 2.902 D(calc.) = 2.887 Fluoresces bright pink under LW UV and duller pink under SW UV.

Optical Properties: Transparent to translucent. *Color:* White to grayish or greenish white. *Luster:* Pearly on cleavages.

Optical Class: Biaxial (-). $\alpha = 1.567$ $\beta = 1.579$ $\gamma = 1.581$ 2V(meas.) = n.d. 2V(calc.) = 47°

Cell Data: *Space Group:* $P\bar{1}$. $a = 7.759(2)$ $b = 18.946(3)$ $c = 6.986(1)$ $\alpha = 89.88(2)^\circ$ $\beta = 116.65(2)^\circ$ $\gamma = 94.32(2)^\circ$ $Z = 4$

X-ray Powder Pattern: Villedieu Township, Canada. 3.19 (vs), 3.14 (vs), 3.44 (s), 3.33 (s), 2.58 (s), 2.31 (s), 2.04 (ms)

Chemistry:	(1)	(2)	(1)	(2)
SiO ₂	57.79	60.92	CaO	25.70
TiO ₂	0.01		SrO	0.16
ZrO ₂	0.18		BaO	0.06
Al ₂ O ₃	1.32		Na ₂ O	7.90
RE	2.57		K ₂ O	0.22
Fe ₂ O ₃	0.11		F	4.45
MnO	0.25		H ₂ O ⁺	0.4
MgO	0.02		-O = F ₂	1.87
			Total	99.27
				100.00

(1) Villedieu Township, Canada; by wet chemical analysis, spectrophotometry, and flame photometry, total Fe as Fe₂O₃, H₂O by the Penfield method. (2) NaCa₂Si₄O₁₀F.

Occurrence: In pegmatite lenses and pods and in mafic gneisses in a regionally metamorphosed agpaitic alkalic rock complex (Villedieu Township, Canada).

Association: Hiortdahlite, mosandrite, miserite, britholite, vlasovite, calcite, fluorite, clinohumite, gittinsite, norbergite, zircon, biotite, phlogopite, galena (Villedieu Township, Canada); miserite, aegirine, eudialyte, quartz (Wausau, Wisconsin, USA).

Distribution: In Canada, from the Sheffield Lake complex, Kipawa River, Villedieu Township, Quebec. In the USA, in the Wausau complex, Marathon Co., Wisconsin. In the Dara-i-Pioz massif, Alai Range, Tien Shan, Tajikistan. From the Murun massif, southwest of Olekminsk, Yakutia, Russia.

Name: To honor Professor Stuart Olof Agrell (1913–1996), eminent petrologist, Cambridge University, Cambridge, England.

Type Material: Canadian Museum of Nature, Ottawa; University of Toronto, Toronto; Royal Ontario Museum, Toronto, Canada, M34496; Harvard University, Cambridge, Massachusetts, 117050; National Museum of Natural History, Washington, D.C., USA, 127007; Cambridge University, Cambridge, England; The Natural History Museum, London, England, 1979,431.

References: (1) Gittins, J., M.G. Brown, and B.D. Sturman (1976) Agrellite, a new rock-forming mineral in regionally metamorphosed agpaitic alkalic rocks. *Can. Mineral.*, 14, 120–126. (2) (1977) *Amer. Mineral.*, 62, 173–174 (abs. ref. 1). (3) Ghose, S. and C. Wan (1979) Agrellite, Na(Ca, RE)₂Si₄O₁₀F: a layer structure with silicate tubes. *Amer. Mineral.*, 64, 563–572.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of Mineral Data Publishing.