

# Naujakasite



©2001 Mineral Data Publishing, version 1.2

**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ , 2, or  $m$ . As aggregates of pseudohexagonal plates, to 2 cm.

**Physical Properties:** *Cleavage:* Perfect micaceous on  $\{001\}$ ;  $\{\bar{4}01\}$  and  $\{010\}$ , distinct. *Tenacity:* Brittle. Hardness = 2–3 D(meas.) = 2.615–2.622 D(calc.) = 2.661

**Optical Properties:** Semitransparent. *Color:* Gray to silver-white; colorless in thin section. *Luster:* Pearly on  $\{001\}$ . *Optical Class:* Biaxial (-).  $\alpha = 1.536$ – $1.538$   $\beta = 1.548$ – $1.551$   $\gamma = 1.555$ – $1.557$   $2V(\text{meas.}) = 52^\circ$ – $71^\circ$   $2V(\text{calc.}) = 62^\circ$ – $75^\circ$

**Cell Data:** *Space Group:*  $C2/m$ ,  $Cm$ , or  $C2$ .  $a = 15.025(1)$   $b = 7.991(2)$   $c = 10.486(1)$   $\beta = 113^\circ 40(5)'$   $Z = 2$

**X-ray Powder Pattern:** Ilímaussaq intrusion, Greenland. 3.99 (100), 3.56 (70), 2.26 (70), 3.69 (60), 3.44 (60), 3.06 (60), 2.79 (60)

## Chemistry:

	(1)	(2)
SiO <sub>2</sub>	50.95	50.65
TiO <sub>2</sub>		0.03
Al <sub>2</sub> O <sub>3</sub>	20.63	20.64
Fe <sub>2</sub> O <sub>3</sub>	2.76	2.18
FeO	5.25	4.46
MnO	0.57	1.09
MgO	0.10	
CaO	0.55	0.3
Na <sub>2</sub> O	14.51	18.37
K <sub>2</sub> O	0.80	0.49
H <sub>2</sub> O <sup>+</sup>	2.60	1.71
H <sub>2</sub> O <sup>-</sup>	1.02	
P <sub>2</sub> O <sub>5</sub>		0.07
Total	99.74	[100.00]

(1) Ilímaussaq intrusion, Greenland. (2) Tuperssuatsiait, Greenland; CaO 0.2%–0.4%, Fe<sup>2+</sup>:Fe<sup>3+</sup> and H<sub>2</sub>O by TGA, recalculated to 100.00%; corresponds to  $(\text{Na}_{5.67}\text{K}_{0.10})_{\Sigma=5.77}(\text{Fe}_{0.60}^{2+}\text{Mn}_{0.14}\text{Ca}_{0.06})_{\Sigma=0.80}(\text{Al}_{3.87}\text{Fe}_{0.27}^{3+})_{\Sigma=4.14}\text{Si}_{8.08}\text{O}_{26} \cdot 1.83\text{H}_2\text{O}$ .

**Occurrence:** In an alkalic intrusion.

**Association:** Arfvedsonite, sodalite, steenstrupine, analcime.

**Distribution:** In southern Greenland, in the Ilímaussaq intrusion, at Naujakasik, at Tuperssuatsiait Bay, and on the Kvanefjeld Plateau, all around the Tunugdliarfik Fjord.

**Name:** For the locality of original discovery, Naujakasik, Greenland.

**Type Material:** University of Copenhagen, Copenhagen, Denmark, 1933.31; National Museum of Natural History, Washington, D.C., USA, 97479.

**References:** (1) Bøggild, O.B. (1933) Igalikite and naujakasite, two new minerals from South Greenland. *Medd. Grønland*, 92(9), 1–12. (2) (1935) *Amer. Mineral.*, 20, 138 (abs. ref. 1). (3) Peterson, O.V. (1967) The mineralogy of naujakasite. *Medd. Grønland*, 181(6), 1–18. (4) (1968) *Amer. Mineral.*, 53, 1780 (abs. ref. 3). (5) Petersen, O.V. and S. Andersen (1975) The crystal habit of naujakasite. *Geol. Sur. Greenland, Rep.* 116, 5–9. (6) Basso, R., A. Dal Negro, A. Della Guista, and L. Ungaretti (1975) The crystal structure of naujakasite. *Geol. Sur. Greenland, Rep.* 116, 11–24. (7) (1976) *Chem. Abs.*, 84, 129188 (abs. ref. 6). (8) Khalilov, A.D., N.K. Dzhafarov, and K.S. Mamedov (1977) Crystal structure of naujakasite –  $\text{Na}_6\{\text{Fe}^{2+}[(\text{Si}, \text{Al})_8\text{Si}_4\text{O}_{26}]\}$ . *Dokl. Acad. Nauk Az. SSR*, 33(7), 35–40 (in Russian). (9) (1978) *Chem. Abs.*, 88, 113658 (abs. ref. 8).

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.