

Amicite

$\text{K}_2\text{Na}_2\text{Al}_4\text{Si}_4\text{O}_{16} \cdot 5\text{H}_2\text{O}$

©2001 Mineral Data Publishing, version 1.2

Crystal Data: Monoclinic, pseudotetragonal. *Point Group:* 2. As well-formed pseudotetragonal pyramidal crystals, to 5 mm, showing {011} and {110}, or more rarely {111} and {110}.

Physical Properties: Hardness = ~ 4.5 D(meas.) = 2.06–2.23 D(calc.) = 2.146–2.178

Optical Properties: Transparent. *Color:* Colorless. *Luster:* Vitreous. *Streak:* White. *Optical Class:* Biaxial (–). *Orientation:* $X = b$; $Z \wedge c = 12^\circ$. $\alpha = 1.485$ $\beta = 1.490$ $\gamma = 1.494$ $2V(\text{meas.}) = 82^\circ$

Cell Data: *Space Group:* $I2_1$. $a = 10.226\text{--}10.26$ $b = 10.422\text{--}10.44$ $c = 9.884\text{--}9.92$
 $\beta = 88^\circ 19'\text{--}91^\circ 30'$ $Z = [2]$

X-ray Powder Pattern: Hegau, Germany.

2.722 (100), 4.220 (90), 3.141 (80), 7.295 (55), 2.704 (50), 3.238 (45), 5.108 (40)

Chemistry:

	(1)	(2)
SiO ₂	36.38	34.81
Al ₂ O ₃	29.46	29.53
Fe ₂ O ₃	trace	
MgO	trace	
CaO	0.22	
SrO	0.03	
BaO	trace	
Na ₂ O	8.22	8.98
K ₂ O	12.96	13.64
H ₂ O	12.80	13.04
Total	100.07	100.00

(1) Hegau, Germany; by electron microprobe; corresponds to $\text{K}_{1.88}\text{Na}_{1.80}\text{Ca}_{0.02}\text{Al}_{3.93}\text{Si}_{4.12}\text{O}_{16} \cdot 4.84\text{H}_2\text{O}$. (2) $\text{K}_2\text{Na}_2\text{Al}_4\text{Si}_4\text{O}_{16} \cdot 5\text{H}_2\text{O}$.

Mineral Group: Zeolite group.

Occurrence: In veinlets cutting melilite-nephelinite volcanic rocks and pyroclastics (Hegau, Germany); in natrolite veinlets cutting ijolite-urtite pegmatites and apatite-nepheline rocks (Kola Peninsula, Russia).

Association: Merlinoite, aragonite, calcite (Hegau, Germany); natrolite (Kola Peninsula, Russia).

Distribution: In the Höwenegg quarry, Hegau, Baden-Württemberg, Germany. From the Kukisvumchorr apatite deposit, Khibiny massif, Kola Peninsula, Russia. In a quarry near Cuidad Real, ?? Province, Spain.

Name: To honor Giovan Battista Amici (1786–1863), physicist, optician, and inventor of microscope optical elements.

Type Material: University of Modena, Modena, Italy; The Natural History Museum, London, England; National Museum of Natural History, Washington, D.C., USA, 145843.

References: (1) Alberti, A., G. Hentschel, and G. Vezzalini (1979) Amicite, a new zeolite. Neues Jahrb. Mineral., Monatsh., 481–488. (2) Alberti, A. and G. Vezzalini (1979) The crystal structure of amicite, a zeolite. Acta Cryst., 35, 2866–2869. (3) (1980) Amer. Mineral., 65, 808 (abs. refs. 1 and 2). (4) Khomyakov, A.P., G.E. Cherepivskaya, T.A. Kurova, and V.V. Kaptsov (1982) First occurrence of amicite ($\text{K}_2\text{Na}_2\text{Al}_4\text{Si}_4\text{O}_{16} \cdot 5\text{H}_2\text{O}$) in the USSR. Doklady Acad. Nauk SSSR, 263, 978–980 (in Russian). (5) (1982) Chem. Abs., 97, 9281 (abs. ref. 4).

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.