Albite  \( \text{Na}_{1.0-0.9}\text{Ca}_{0.0-0.1}\text{Al}_{1.0-1.1}\text{Si}_{3.0-2.9}\text{O}_{8} \)

(C)2001 Mineral Data Publishing, version 1.2

Crystal Data:  Triclinic.  Point Group:  \( T \).  Crystals commonly tabular \( || \{010\} \), may be curved, to 3 cm; divergent aggregates, granular, cleavable massive.  Twinning:  Common around \( \{010\} \) or \( \perp \{010\} \), giving polysynthetic striae on \( \{001\} \) or \( \{010\} \); many other laws, contact, simple and multiple.

Physical Properties:  Cleavage:  Perfect on \( \{001\} \), very good on \( \{010\} \), imperfect on \( \{110\} \).  Fracture:  Uneven to conchoidal.  Tenacity:  Brittle.  Hardness = 6–6.5  \( D(\text{meas.}) = 2.60–2.65 \)  \( D(\text{calc.}) = 2.60–2.65 \)

Optical Properties:  Transparent to translucent.  Color:  White to gray, bluish, greenish, reddish; may be chatoyant.  Streak:  \( \text{White} \).  Luster:  Vitreous, typically pearly on cleavages.  Optical Class:  Biaxial (+) (low); (−) (high).  Dispersion:  \( \gamma < \beta \)  weak (low).  \( \alpha = 1.526–1.530 \)  \( \beta = 1.531–1.533 \)  \( \gamma = 1.534–1.541 \)  \( 2V(\text{meas.}) = 85°–90° \)  (low);  \( 52°–54° \)  (high).

Cell Data:  Space Group:  \( \text{C\text{T}} \) (low).  \( a = 8.137(1) \)  \( b = 12.785(1) \)  \( c = 7.1583(4) \)
\( \alpha = 94.26(1)° \)  \( \beta = 116.60(1)° \)  \( \gamma = 87.71(1)° \)  \( Z = 4 \), or  Space Group:  \( \text{C\text{T}} \) (high).  \( a = 8.149 \)  \( b = 12.880 \)  \( c = 7.160 \)  \( \alpha = 93.37° \)  \( \beta = 116.30° \)  \( \gamma = 90.28° \)  \( Z = 4 \)

X-ray Powder Pattern:  Amelia, Virginia, USA (low).

Chemistry:
\[
\begin{array}{ccc}
\text{SiO}_2 & 68.71 & 68.74 & 66.04 \\
\text{Al}_2\text{O}_3 & 19.63 & 19.44 & 21.26 \\
\text{CaO} & 0.22 & 2.13 & \\
\text{Na}_2\text{O} & 11.72 & 11.82 & 10.57 \\
\text{K}_2\text{O} & 0.03 & & \\
\text{Total} & 100.31 & 100.00 & 100.00 \\
\end{array}
\]

(1) Alp Rischuna, Switzerland.  (2) \( \text{NaAlSi}_3\text{O}_8 \).  (3) \( \text{Na}_{0.90}\text{Ca}_{0.10}\text{Al}_{1.10}\text{Si}_{2.90}\text{O}_8 \)

Polymorphism & Series:  Low- and high-temperature structural modifications are recognized.

Mineral Group:  Feldspar group, plagioclase series.

Occurrence:  A major constituent of granites and granite pegmatites, alkalic diorites, basalts, and in hydrothermal and alpine veins.  A product of potassium metasomatism and in low-temperature and low-pressure metamorphic facies and in some schists.  Detrital and authigenic in sedimentary rocks.

Association:  Quartz, orthoclase, muscovite, biotite, “hornblende.”


Name:  From the Latin, \textit{albus}, for white, its characteristic color.


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.