

Hyalotekite

(Ba, Pb, Ca)₆(B, Si, Al)₂(Si, Be)₁₀O₂₈(F, Cl)

©2001 Mineral Data Publishing, version 1.2

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Coarsely crystalline, massive.

Physical Properties: *Cleavage:* Easy in two directions at $\sim 90^\circ$; indistinct in a third direction in the same zone as the other two. *Tenacity:* Brittle. *Hardness* = 5–5.5 $D(\text{meas.}) = 3.81\text{--}3.82$ $D(\text{calc.}) = 3.83$ Fluoresces blue, light brownish orange, or yellow in SW UV; bright yellow or blue cathodoluminescence.

Optical Properties: Transparent in very thin plates. *Color:* White to pearly gray.

Luster: Vitreous to greasy.

Optical Class: Biaxial (+). *Dispersion:* $r < v$, weak to strong. $\alpha = 1.646\text{--}1.656$
 $\beta = 1.649\text{--}1.660$ $\gamma = 1.659\text{--}1.671$ $2V(\text{meas.}) = 57^\circ\text{--}60.5^\circ$ $2V(\text{calc.}) = 55.4^\circ\text{--}62.5^\circ$

Cell Data: *Space Group:* $I\bar{1}$. $a = 11.310(2)$ $b = 10.955(2)$ $c = 10.317(3)$ $\alpha = 90.43(2)^\circ$
 $\beta = 90.02(2)^\circ$ $\gamma = 90.16(2)^\circ$ $Z = 2$

X-ray Powder Pattern: Långban, Sweden. (ICDD 19-572).

3.45 (100), 3.53 (80), 2.94 (80), 3.81 (70), 2.297 (65), 2.143 (65), 7.7 (60)

Chemistry:	(1)	(2)		(1)	(2)
SiO ₂	39.47	40.74	SrO		0.07
B ₂ O ₃	3.73	4.46	BaO	20.08	27.30
Al ₂ O ₃	0.18	0.03	Na ₂ O	0.17	0.77
Fe ₂ O ₃	0.06	0.05	K ₂ O	0.89	0.74
MnO	0.29	0.00	Rb ₂ O		0.01
CuO	0.09		F	0.99	0.77
PbO	25.11	17.46	Cl	0.06	
BeO	0.75	0.57	LOI	0.59	
MgO	0.09	< 0.01	–O = F ₂	[0.43]	0.32
CaO	7.82	6.81	Total	[99.94]	99.43

(1) Långban, Sweden; original total given as 100.37%, corresponds to (Ca_{2.07}Ba_{1.94}Pb_{1.67}K_{0.28}Na_{0.08})_{Σ=6.04}(B_{1.60}Si_{0.19}Al_{0.05}Mn_{0.06}Mg_{0.03}Cu_{0.02}Fe_{0.01})_{Σ=1.96}(Si_{9.56}Be_{0.44})_{Σ=10.00}O₂₈(F_{0.78}Cl_{0.02})_{Σ=0.80}. (2) Dara-i-Pioz massif, Tajikistan; by electron and ion microprobe, corresponds to (Ba_{2.58}Ca_{1.76}Pb_{1.13}Na_{0.36}K_{0.23}Sr_{0.01})_{Σ=6.07}(B_{1.85}Si_{0.14}Mg_{0.03}Fe_{0.01})_{Σ=2.03}(Si_{9.67}Be_{0.33})_{Σ=10.00}O_{28.5}F_{0.58}.

Occurrence: Sparingly in feldspar in a metamorphosed Fe–Mn deposit (Långban, Sweden); in reedmergnerite pegmatite in an alkaline massif (Dara-i-Pioz massif, Tajikistan).

Association: Quartz, calcite, hematite, barylite, barite, manganoan pectolite, ferrian potassic feldspar, calderitic andradite, melanotekite, barian hedyphane, plumboan taramellite, rhodonite, manganoan aegirine (Långban, Sweden); feldspars, reedmergnerite, aegirine, pyrochlore, eudialyte, polythionite (Dara-i-Pioz massif, Tajikistan).

Distribution: At Långban, Värmland, Sweden. From the Dara-i-Pioz massif, Alai Range, Tien Shan, Tajikistan.

Name: From the Greek for *glass* and *to melt*, in allusion to its easy fusibility.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 422. (2) Moore, P.B., T. Araki, and S. Ghose (1982) Hyalotekite, a complex lead borosilicate: its crystal structure and the lone-pair effect of Pb(II). *Amer. Mineral.*, 67, 1012–1020. (3) Grew, E.S., M.G. Yates, D.I. Belakovskiy [Belakovskii], R.C. Rouse, S.-C. Su, and N. Marquez (1994) Hyalotekite from reedmergnerite-bearing peralkaline pegmatite, Dara-i-Pioz, Tajikistan, and from Mn skarn, Långban, Sweden: a new look at an old mineral. *Mineral. Mag.*, 58, 285–297.

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.