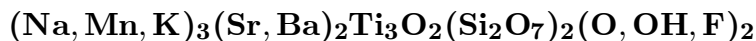


Lamprophyllite



©2001 Mineral Data Publishing, version 1.2

Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals flattened on $\{100\}$, elongated along $[001]$, rarely terminated, to 20 cm; as stellate clusters and sheaflike aggregates.

Twinning: Common on $\{100\}$, rarely polysynthetic.

Physical Properties: *Cleavage:* Perfect micaceous on $\{100\}$; poor on $\{010\}$.

Fracture: Uneven. *Tenacity:* Brittle. *Hardness* = 2–3 $D(\text{meas.}) = 3.44\text{--}3.53$

$D(\text{calc.}) = [3.48]$

Optical Properties: Opaque, transparent to translucent in thin section. *Color:* Dark brown, brownish yellow, straw-yellow, reddish brown with a golden tint. *Streak:* Pale yellow, may have an orange tint. *Luster:* Submetallic on cleavages.

Optical Class: Biaxial (+). *Pleochroism:* $X = \text{yellow}$; $Y = \text{straw-yellow}$; $Z = \text{orange or straw-yellow}$. *Orientation:* $X \perp b$; $Z \wedge c \simeq 4^\circ\text{--}8^\circ$. *Dispersion:* $r > v$, strong. $\alpha = 1.735\text{--}1.749$
 $\beta = 1.747\text{--}1.754$ $\gamma = 1.770\text{--}1.781$ $2V(\text{meas.}) = 21^\circ\text{--}41^\circ$

Cell Data: *Space Group:* $C2/m$. $a = 19.431(3)$ $b = 7.086(1)$ $c = 5.392(1)$

$\beta = 96.75(5)^\circ$ $Z = 2$

X-ray Powder Pattern: Kola Peninsula, Russia. (ICDD 17-751).

2.773 (100), 3.43 (55), 2.130 (45), 1.477 (45), 3.73 (40), 3.27 (40), 2.874 (40)

Chemistry:	(1)	(2)		(1)	(2)
SiO ₂	30.40	30.93	SrO	14.58	14.12
TiO ₂	27.48	27.14	BaO	1.25	3.49
Al ₂ O ₃		0.56	Na ₂ O	12.35	10.64
Fe ₂ O ₃	3.87	1.36	K ₂ O	2.31	1.26
(Nb, Ta) ₂ O ₅		0.16	F	1.82	1.10
FeO	1.97	2.31	H ₂ O ⁺		0.56
MnO	2.33	3.46	H ₂ O ⁻		0.16
MgO	0.25	0.40	LOI	0.60	
CaO	1.41	2.48	-O = F ₂	0.77	0.46
			Total	99.85	99.67

(1) Kukisvumchorr apatite deposit, Khibiny massif, Russia. (2) Mt. Karnasurt, Lovozero massif, Russia.

Occurrence: In all rock types and most pegmatites of a differentiated alkalic massif (Lovozero massif, Russia).

Association: Microcline, nepheline, aegirine, lorenzenite, eudialyte, lomonosovite, murmanite, villiaumite (Lovozero massif, Russia); microcline, nepheline, catapleite, aegirine, calcite, fluorite, analcime, pectolite (Pilansberg, South Africa).

Distribution: In Russia, in the Lovozero and Khibiny massifs, Kola Peninsula; in the Konder, Inagli, and Ylymakh massifs, Yakutia. In the Gardiner complex, beyond the head of Kangerdlugssuaq Fjord, Greenland. From the Langesundsfjord, Norway. At Pilansberg, Transvaal, South Africa. In the Rocky Boy stock, Bear Paw Mountains, Hill Co., Montana, USA. At Mont Saint-Hilaire, Quebec, Canada. From Pedro Balao, Poços de Caldas, Minas Gerais, and Serrote, Cascata, São Paulo, Brazil.

Name: From the Greek for *shining* and *leaf*, for its lustrous cleavage.

References: (1) Dana, E.S. (1899) Dana's system of mineralogy, (6th edition), app. I, 40.

(2) Vlasov, K.A., Ed. (1966) Mineralogy of rare elements, v. II, 207–209. (3) Vlasov, K.A., M.V. Kuz'menko, and E.M. Es'kova (1966) The Lovozero alkali massif. Akad. Nauk SSSR, 361–370 (in English). (4) Saf'yanov, Y.N., N.O. Vasil'eva, V.P. Golovachev, E.A. Kuz'min, and N.V. Belov (1983) Crystal structure of lamprophyllite. Doklady Acad. Nauk SSSR, 269, 117–120 (in Russian).

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.