

**Plumbomicrolite****(Pb, Ca)<sub>2</sub>(Ta, Nb)<sub>2</sub>O<sub>6</sub>(OH)**

©2001-2005 Mineral Data Publishing, version 1

**Crystal Data:** Cubic. *Point Group:*  $4/m\bar{3}2/m$ . In octahedral or cubo-octahedral crystals, to 20 cm, and massive.

**Physical Properties:** *Fracture:* [Uneven] (by analogy to the pyrochlore group).

*Tenacity:* [Brittle.] *Hardness* = 6 *VHN* = 610–670 (40 g load). *D(meas.)* = 6.5–8.2

*D(calc.)* = 6.70–8.73 (varying with Ta/Nb content).

**Optical Properties:** Opaque, translucent in thin fragments. *Color:* Yellow to orange, green to yellowish green, dark brown to black. *Luster:* Greasy.

*Optical Class:* Isotropic.

*R:* (545) 18.2

**Cell Data:** *Space Group:*  $Fd\bar{3}m$ . *a* = 10.56–10.61 *Z* = 8

**X-ray Powder Pattern:** Kivu Province, Congo.

1.867 (100), 1.593 (99), 2.642 (65), 1.526 (32), 3.01 (31), 0.8928 (29), 1.181 (27)

<b>Chemistry:</b>		(1)	(2)	(1)	(2)	(1)	(2)	
Nb <sub>2</sub> O <sub>5</sub>	11.10	11.20	As <sub>2</sub> O <sub>3</sub>	0.07		CaO	1.00	2.80
Ta <sub>2</sub> O <sub>5</sub>	50.40	33.46	Sb <sub>2</sub> O <sub>3</sub>	0.80		BaO	0.20	
SiO <sub>2</sub>	0.65	0.00	Bi <sub>2</sub> O <sub>3</sub>	0.04		Na <sub>2</sub> O	0.63	0.63
TiO <sub>2</sub>	0.21	0.00	FeO	0.34		K <sub>2</sub> O	< 0.01	
ZrO <sub>2</sub>	0.06		MnO	0.02		Cs <sub>2</sub> O	~1.60	
SnO <sub>2</sub>	3.55	4.45	CuO	0.04		F	< 0.01	
Al <sub>2</sub> O <sub>3</sub>	0.63	0.00	PbO	26.00	44.40	H <sub>2</sub> O <sup>+</sup>	1.20	1.31
Fe <sub>2</sub> O <sub>3</sub>		1.74	MgO	0.02		H <sub>2</sub> O <sup>-</sup>	0.20	0.20
						<b>Total</b>	<b>98.78</b>	<b>100.19</b>

(1) Kivu Province, Congo; after deduction of estimated cassiterite 3% and mica 0.5%, corresponds to (Pb<sub>0.74</sub>Na<sub>0.13</sub>Ca<sub>0.11</sub>Cs<sub>0.07</sub>Sb<sub>0.03</sub>Fe<sub>0.03</sub>Ba<sub>0.01</sub>)<sub>Σ=1.12</sub>(Ta<sub>1.45</sub>Nb<sub>0.53</sub>Ti<sub>0.02</sub>)<sub>Σ=2.00</sub>O<sub>6.04</sub>•0.42H<sub>2</sub>O.

(2) Mt. Ploskaya, Kola Peninsula, Russia; corresponds to (Pb<sub>1.39</sub>Ca<sub>0.35</sub>Na<sub>0.14</sub>)<sub>Σ=1.88</sub>(Ta<sub>1.05</sub>Nb<sub>0.59</sub>Sn<sub>0.21</sub>Fe<sub>0.15</sub><sup>3+</sup>)<sub>Σ=2.00</sub>O<sub>6.11</sub>(OH)<sub>0.89</sub>.

**Mineral Group:** Pyrochlore group, microlite subgroup; Pb<sub>A</sub> > 20%; (Nb + Ta)<sub>B</sub> > 2Ti<sub>B</sub>; Ta<sub>B</sub> ≥ Nb<sub>B</sub>.

**Occurrence:** In alluvium near lithium-rich pegmatites (Kivu Province, Congo); in microcline pegmatites in an alkalic massif (Mt. Ploskaya, Kola Peninsula, Russia).

**Association:** Cassiterite, manganotantalite, microlite, simpsonite, mica (Kivu Province, Congo); albite, cassiterite, galena, uranium minerals, hingganite-(Yb) (Mt. Ploskaya, Kola Peninsula, Russia).

**Distribution:** At an unspecified locality [Mumba district, Masisi] in Kivu Province, Congo (Zaire). From about 15 km north-northwest of Lutsiro, near the Sebeya River, western Rwanda. As large crystals on Mt. Ploskaya, Keivy massif, Kola Peninsula, Russia.

**Name:** For lead, PLUMBum, in its composition, and its relation to *microlite*.

**Type Material:** van Wambeke collection, Brussels, Belgium.

**References:** (1) Safiannikoff, A. and L. van Wambeke (1961) Sur un terme plombifère du groupe pyrochlore-microlite. Bull. Soc. fr. Minéral., 84, 382–384 (in French with English abs.). (2) (1962) Amer. Mineral., 47, 1220–1221 (abs. ref. 1). (3) Hogarth, D.D. (1977) Classification and nomenclature of the pyrochlore group. Amer. Mineral., 62, 403–410. (4) Voloshin, A.V., V.V. Bukanov, and L.I. Polezhaeva (1981) Plumbomicrolite and plumbopyrochlore from the amazonite pegmatites of the Kola Peninsula. Mineral. Zhurnal, 3, 20–34 (in Russian). (5) Stepanov, V.I., V.V. Bukanov, and A.V. Bykova (1982) Plumbomicrolite from amazonite pegmatite of Mount Ploskaya, its first find in the USSR. Doklady Acad. Nauk SSSR, 263, 183–185 (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.