

**Rhabdophane-(La)****(La, Ce)PO<sub>4</sub>·H<sub>2</sub>O**

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**Crystal Data:** Hexagonal. *Point Group:* 6/m 2/m 2/m. Radiating and fanlike aggregates of fine fibrous crystals, to 0.05 mm; may be in druses.

**Physical Properties:** *Fracture:* Subconchoidal. Hardness = 3–3.5 D(meas.) = 4.4  
D(calc.) = 4.3

**Optical Properties:** Semitransparent. *Color:* Pale pink, yellowish to dark brown.  
*Luster:* Greasy to silky.  
*Optical Class:* Uniaxial (+).  $\omega = 1.692$   $\epsilon = 1.732$

**Cell Data:** *Space Group:* [P6<sub>2</sub>22] [by analogy to rhabdophane-(Ce)].  $a = 7.03(1)$   
 $c = 6.41(1)$  Z = 3

**X-ray Powder Pattern:** Kazakhstan (?).  
1.86 (7), 3.03(6), 2.85 (4), 2.157 (4b), 2.133 (4b), 1.76 (2), 1.68 (2)

<b>Chemistry:</b>	(1)
	SO <sub>3</sub> 0.34
	P <sub>2</sub> O <sub>5</sub> 25.17
	SiO <sub>2</sub> 5.3
	ThO <sub>2</sub> 0.67
	Al <sub>2</sub> O <sub>3</sub> 2.06
	RE <sub>2</sub> O <sub>3</sub> 58.11
	Fe <sub>2</sub> O <sub>3</sub> 0.43
	PbO 0.15
	MgO 0.04
	CaO 0.56
	BaO 0.16
	H <sub>2</sub> O 6.88
	<hr/> Total 99.87

(1) Kazakhstan (?); RE by XRF; Y = 0.5%, La = 49%, Ce = 8.4%, Pr = 14.6%, Nd = 3.3%, Sm = 12.5%, Eu = 1.3%, Gd = 4.2%, Tb = 0.4%, Dy = 2.2%, Ho = 0.2%, Er = 1.3%, Tm = 0.2, Yb = 1.7

**Occurrence:** A secondary mineral in faults cutting weathered sediments, probably derived from a porphyritic granite.

**Association:** Clay minerals, “opal”.

**Distribution:** From an undisclosed locality, probably in Kazakhstan. On Mt. Karnasurt, Lovozero massif, Kola Peninsula, Russia. At the Silberbrünnle mine, near Gengenbach, Black Forest, Germany. From Gakara, Burundi.

**Name:** For its dominant rare earth, *lanthanum*, and relation to *rhabdophane*-(Ce).

**Type Material:** n.d.

**References:** (1) Dumler, F.L., K.P. Skornyakova, and G.G. Shul'ga (1969) Lanthanum rhabdophane in the weathered mantle on limestones – a new type of rare earth mineralization. Zap. Vses. Mineral. Obshch., 98, 593–600 (in Russian).