

Stavelotite-(La)

Crystal Data: Hexagonal. *Point Group:* 3. As rounded to rectangular masses to 160 μm .

Physical Properties: *Cleavage:* None. *Fracture:* n.d. *Hardness:* = n.d.
D(meas.) = n.d. D(calc.) = 4.489

Optical Properties: Opaque. *Color:* Black, reddish brown in transmitted light, gray in reflected light. *Streak:* n.d. *Luster:* Metallic.

Optical Class: n.d. *Pleochroism:* Weak.

R_1 - R_2 : (470) 13.6-14.4 (3.0-3.7)_{oil}, (546) 13.2-13.9 (2.9-3.5)_{oil}, (589) 13.0-13.7 (2.8-3.4)_{oil}, (650) 12.8-13.4 (2.7-3.2)_{oil}

Cell Data: *Space Group:* $P3_1$. $a = 11.525(2)$ $c = 33.347(9)$ $Z = 3$

X-ray Powder Pattern: Le Coreux, Belgium.

2.7232 (100), 2.7789 (40), 1.6635 (40), 5.446 (31), 2.3702 (29), 1.6887 (28), 3.1873 (19)

Chemistry:

	(1)
SiO ₂	20.17
TiO ₂	0.44
MnO ₂	[4.83]
Mn ₂ O ₃	[31.67]
MnO	[5.99]
Al ₂ O ₃	3.30
Fe ₂ O ₃	13.08
Sc ₂ O ₃	1.47
La ₂ O ₃	8.39
Nd ₂ O ₃	3.39
Ce ₂ O ₃	0.44
CaO	0.33
MgO	1.06
CuO	2.11
CoO	0.18
Total	96.86

(1) Le Coreux, Belgium; average of 65 electron microprobe analyses, Mn allocations calculated; corresponds to $(\text{La}_{1.828}\text{Nd}_{0.715}\text{Ce}_{0.095}\text{Ca}_{0.209}\text{Sc}_{0.153})_{\Sigma=3.00}\text{Mn}^{2+}_{2.998}(\text{Cu}_{0.941}\text{Mn}^{3+}_{0.058})_{\Sigma=0.999}(\text{Mn}^{3+}_{14.183}\text{Fe}^{3+}_{5.814}\text{Al}_{2.298}\text{Mn}^{4+}_{1.973}\text{Mg}_{0.933}\text{Sc}_{0.604}\text{Ti}_{0.195}\text{Co}_{0.085})_{\Sigma=26.085}\text{Si}_{11.915}\text{O}_{72}$.

Occurrence: A minor late-stage, accessory phase in a quartz vein cross-cutting highly oxidized manganeseiferous phyllites.

Association: Albite, braunite, hematite, hollandite-strontiomelane, kanonaite, Mn-oxides, muscovite.

Distribution: At Le Coreux, 1 km north of Salmchâteau, Belgium.

Name: For the *Stavelot* Massif in the Belgian Ardennes Mountains, and *Stavelot*, a historical town in eastern Belgium. The suffix indicates the dominant rare earth element, *Lanthanum*.

Type Material: Mineralogical Collection, Institut für Geologie, Mineralogie und Geophysik, Ruhr-Universität Bochum, Germany (#25169).

References: (1) Bernhardt, H.-J., T. Armbruster, A.-M. Fransolet, and W. Schreyer (2005) Stavelotite-(La), a new lanthanum-manganese-sorosilicate mineral from the Stavelot Massif, Belgium. *Eur. J. Mineral.*, 17, 703-714. (2) (2006) *Amer. Mineral.*, 91, 1206-1207 (abs. ref. 1).