Cervandonite-(Ce)  
\((\text{Ce, Nd, La})(\text{Fe}^{3+}, \text{Ti}, \text{Fe}^{2+}, \text{Al})_3(\text{Si, As})_3\text{O}_{13}\)

©2001 Mineral Data Publishing, version 1.2

Crystal Data: Monoclinic. Point Group: m, 2, or 2/m. As porous, saddle- or rosettelike, rounded, radial crystal aggregates, to 4 mm.


2V(meas.) = n.d.

Cell Data: Space Group: \(\text{Cm, C2, or C2/m.}\) \(a = 11.235(4)\) \(b = 19.50(2)\) \(c = 7.201(3)\) \(\beta = 121.22(3)°\) \(Z = 6\)

X-ray Powder Pattern: Pizzo Cervandone, Italy.

2.8785 (100), 3.2530 (90), 5.390 (80), 3.0847 (80), 2.7867 (60), 2.6964 (50), 2.6964 (50), 3.5750 (40)

Chemistry:

| SiO\(_2\) | 17.65 | 15.17 | Ce\(_2\)O\(_3\) | 10.00 | 11.63 |
| TiO\(_2\) | 11.67 | 11.42 | Nd\(_2\)O\(_3\) | 5.16 | 6.01 |
| SnO\(_2\) | 1.24 | 0.00 | Fe\(_3\)O\(_3\) | 15.03 | 15.53 |
| UO\(_2\) | 1.35 | 0.33 | As\(_2\)O\(_5\) | 20.41 | 24.18 |
| ThO\(_2\) | 2.34 | 1.92 | FeO | 4.51 | 4.67 |
| Al\(_2\)O\(_3\) | 3.60 | 2.95 | PbO | 0.17 | 0.16 |
| Y\(_2\)O\(_3\) | 0.94 | 0.86 | CaO | 0.25 | 0.25 |
| La\(_2\)O\(_3\) | 5.14 | 5.65 | Total | [99.46] | [100.73] |

(1) Pizzo Cervandone, Italy; by electron microprobe, Fe\(^{2+}\):Fe\(^{3+}\) determined by Mössbauer spectroscopy, original total given as 99.47%; corresponds to \((\text{Ce}_{0.39}\text{Nd}_{0.20}\text{La}_{0.20}\text{Y}_{0.05}\text{Th}_{0.06}\text{U}_{0.03}\text{Ca}_{0.03}\text{Pb}_{0.01})\Sigma_{-0.97}(\text{Fe}^{3+}_{1.21}\text{Ti}_{0.94}\text{Al}_{0.46}\text{Fe}^{2+}_{3.40}\text{Sn}_{0.05})\Sigma_{3.06}(\text{Si}_{1.89}\text{As}_{1.14})\Sigma_{3.03}\text{O}_{13}\).  
(2) Pizzo Cervandone, Switzerland; by electron microprobe, original total given as 100.72%; corresponds to \((\text{Ce}_{0.46}\text{Nd}_{0.23}\text{La}_{0.23}\text{Y}_{0.05}\text{Th}_{0.05}\text{Ca}_{0.03}\text{U}_{0.01}\text{Pb}_{0.01})\Sigma_{1.07}(\text{Fe}^{1.26}\text{Ti}_{0.93}\text{Fe}^{2+}_{3.42}\text{Al}_{0.38})\Sigma_{2.99}(\text{Si}_{1.64}\text{As}_{1.35})\Sigma_{3.00}\text{O}_{13}\)

Occurrence: In narrow fissure-veins cutting two-mica gneiss.

Association: Senaite, chernovite, rutile, anatase, muscovite, albite, chlorite, tourmaline, magnetite, hematite, quartz, synchysite.

Distribution: On the east flank of Pizzo Cervandone, Alpe Devero, Val d’Aosta, Italy. On the west flank of Cherbadung [Pizzo Cervandone], Binntal, Valais, Switzerland.

Name: After the locality on the border between Italy and Switzerland where the mineral was discovered, Pizzo Cervandone.

Type Material: Natural History Museum, Bern, B3953, B4695, B4880; Natural History Museum, Basel, Switzerland, M30802.