

Gasparite-(Ce)**(Ce, La, Nd)AsO₄**

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Crystal Data: Monoclinic. *Point Group:* $2/m$. As pseudorhombhedral crystals, to 0.5 mm, showing {100}, {001}, {110}, {101}, in aggregates rimming and replacing synchysite.

Physical Properties: *Fracture:* Conchoidal to uneven. Hardness = 4.5–5 VHN = 327(5) (50 g load). D(meas.) = n.d. D(calc.) = 5.63 Bright green fluorescence under a quartz lamp.

Optical Properties: Semitransparent. *Color:* Light red-brown, flesh-pink. *Streak:* White. *Optical Class:* Biaxial (+). *Orientation:* $X = b$; $Z \wedge c = 4^\circ$. $\alpha = 1.810(8)$ $\beta = 1.825(8)$ $\gamma = 1.92(1)$ $2V(\text{meas.}) = 40^\circ\text{--}45^\circ$

Cell Data: *Space Group:* $P2_1/n$. $a = 6.937(3)$ $b = 7.137(4)$ $c = 6.738(6)$ $\beta = 104.69(5)^\circ$ $Z = 4$

X-ray Powder Pattern: Pizzo Cervandone, Italy. 3.156 (100), 3.355 (77), 2.966 (70), 2.003 (45), 2.709 (44), 3.035 (34), 1.7787 (34)

Chemistry:

	(1)	(2)
SO ₃	0.99	
As ₂ O ₅	39.21	41.18
SiO ₂	0.64	
ThO ₂	1.95	
Al ₂ O ₃	0.06	
La ₂ O ₃	12.07	
Ce ₂ O ₃	28.33	58.82
Pr ₂ O ₃	3.89	
Nd ₂ O ₃	11.02	
CaO	1.36	
Total	99.52	100.00

(1) Pizzo Cervandone, Italy; by electron microprobe, average of nine analyses; corresponding to $(\text{Ce}_{0.47}\text{La}_{0.20}\text{Nd}_{0.18}\text{Ca}_{0.07}\text{Pr}_{0.06}\text{Th}_{0.02})_{\Sigma=1.00}(\text{As}_{0.94}\text{Si}_{0.03}\text{S}_{0.03})_{\Sigma=1.00}\text{O}_4$. (2) CeAsO₄.

Mineral Group: Monazite group.

Occurrence: In fissures, replacing synchysite, formed by amphibolite-grade metamorphism of metasedimentary rocks (Pizzo Cervandone, Italy).

Association: Synchysite-(Ce), chernovite, cafarsite, rutile, anatase, magnetite, hematite (Pizzo Cervandone, Italy).

Distribution: On the southeastern slope of Pizzo Cervandone, Alpe Devero, Val d'Aosta, Piedmont, Italy. At the Squaw Creek tin prospect, Catron Co., and on the Beryllium Virgin claim, Paramount Canyon, Sierra Co., New Mexico, USA.

Name: To honor Giovanni Gaspari, mineral collector of Crodo, Italy, who first found the mineral, and for its dominant *cerium* content.

Type Material: Natural History Museum, Basel, 30653; Mineralogical Institute, Basel University, Basel, Switzerland.

References: (1) Graeser, S. and H. Schwander (1987) Gasparite-(Ce) and monazite-(Nd): two new minerals to the monazite group from the Alps. Schweiz. Mineral. Petrog. Mitt., 67, 103-113. (2) (1988) Amer. Mineral., 73, 1494-1495 (abs. ref. 1).