Orcelite $Ni_{5-x}As_2$ (x = 0.23)

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Crystal Data: Hexagonal. *Point Group:* n.d. As inclusions in pentlandite and rimming maucherite, to 0.05 mm; as disseminated grains.

Physical Properties: Hardness = n.d. VHN = n.d. D(meas.) = 6.5 D(calc.) = 8.50

Optical Properties: Opaque. *Color:* Rose-bronze, browner than nickeline; pale orange in polished section. *Luster:* Metallic. *Pleochroism:* Low, weaker than nickeline. *Anisotropism:* Noticeable, without distinct colors. *Bireflectance:* Weak.
R: (400) 42.3, (420) 42.9, (440) 43.6, (460) 44.5, (480) 45.5, (500) 46.7, (520) 47.8, (540) 49.1, (560) 50.5, (580) 51.8, (600) 53.3, (620) 54.7, (640) 56.0, (660) 57.2, (680) 58.2, (700) 59.0

Cell Data: *Space Group:* n.d. $a = 6.815(3)$ $c = 12.498(7)$ $Z = 6$

X-ray Powder Pattern: Tiébaghi massif, New Caledonia.
1.977 (10), 1.918 (10), 2.110 (4), 1.810 (4), 1.737 (4), 1.380 (4), 1.650 (3)

Chemistry:

	(1)	(2)	(3)	(4)
Ni	57.00	64.41	64.3	65.14
Fe			0.2	
As	31.50	35.59	35.1	34.86
S	1.00		0.1	
SiO_2	4.00			
Fe_2O_3	0.85			
MgO	3.80			
H_2O	1.50			
Total	99.65	100.00	99.7	100.00

(1) Tiébaghi massif, New Caledonia; includes 9.15% antigorite as impurity. (2) Do.; analysis (1) with Ni and As recalculated to 100%. (3) Nebral, Spain; by electron microprobe. (4) $Ni_{5-x}As_2$, x = 0.23.

Occurrence: As inclusions in pentlandite in serpentinized harzburgite.

Association: Pentlandite, heazlewoodite, millerite, parkerite, maucherite, breithauptite, magnetite, nickel, copper, chalcopyrite, chalcocite, galena.

Distribution: From the Tiébaghi massif, New Caledonia [TL]. On Table Mountain and Blow-Me-Down Mountain, Newfoundland, and in the Nipissing mine, Cobalt, Ontario, Canada. In the Ronda massif, at Nebral, Málaga Province, Spain. From the Cliff region, Unst, Shetland, Scotland. In the Kauniinvaara ultramafic lens, near Lake Kauniinlampi, eastern Finland. From the Vozhmin massif, Karelia, Russia. At Polling, Salzburg, Austria. From Vourinos, Greece. At Beni Bousera, Morocco.

Name: For Professor Jean Orcel (1896–1978), French mineralogist.

Type Material: Museum of Natural History, Paris; National School of Mines, Paris, France.

References: (1) Caillère, S., J. Avias, and J. Falgueirettes (1959) Découverte en Nouvelle Calédonie d'une minéralisation arsénicale sous forme d'un nouvel arséniure de nickel, Ni_2As. Compt. Rendus Acad. Sci. Paris, 249, 1771–1773 (in French). (2) (1960) Amer. Mineral., 45, 753–754 (abs. ref. 1). (3) Caillère, S., J. Avias, and J. Falgueirettes (1961) Sur un nouvel arséniure de nickel (Ni_2As). L'orcélite. Bull. Soc. fr. Minéral., 84, 9–12. (4) Lorand, J.P. and M. Pinet (1984) L'orcelite des peridotites de Beni Bousera (Maroc), Ronda (Espagne), Table Mountain et Blow-Me-Down Mountain (Terre-Neuve) et du Pinde Septentrional (Grèce). Can. Mineral., 22, 553–560 (in French with English abs.). (5) Oen, I.S., C. Kieft, E.A.J. Burke, and A.B. Westerhof (1980) Orcelite and associated minerals in the Ni – Fe – As – S system in chromitites and orthopyroxenites of Nebral, Málaga, Spain. Bull. Minéral., 103, 198–208.

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