

**Crystal Data:** Hexagonal. *Point Group:*  $\bar{3} 2/m$ . As crystals, to 5 mm; massive.

**Physical Properties:** *Cleavage:* Good on {001}. *Hardness* = n.d. *VHN* = 110  
*D*(meas.) = 7.19 *D*(calc.) = 7.22

**Optical Properties:** Opaque. *Color:* Pale yellow. *Luster:* Metallic. *Anisotropism:* Distinct, from pale gray to pink or purple.

*R*<sub>1</sub>–*R*<sub>2</sub>: (400) 49.4–53.0, (420) 50.3–52.0, (440) 51.5–51.6, (460) 52.9–51.6, (480) 54.4–52.2, (500) 55.9–52.9, (520) 57.4–54.0, (540) 58.9–55.2, (560) 60.2–56.5, (580) 61.4–57.8, (600) 62.5–59.1, (620) 63.3–60.2, (640) 64.1–61.1, (660) 64.6–61.8, (680) 65.2–62.4, (700) 65.7–62.9

**Cell Data:** *Space Group:*  $P\bar{3}m1$ . *a* = 3.716(5) *c* = 5.126(5) *Z* = 1

**X-ray Powder Pattern:** Kuusamo, Finland.

2.729 (100), 2.007 (45), 1.510 (35), 2.567 (25), 1.860 (25), 1.535 (20), 5.13 (15)

<b>Chemistry:</b>	(1)	(2)	(3)
Ni	22.42	23.6	22.13
Co	0.40	0.1	
Fe		0.2	
Cu	0.07	0.1	
Te	47.46	44.0	48.10
Se	30.22	31.3	29.77
S		0.4	
<b>Total</b>	<b>100.57</b>	<b>99.7</b>	<b>100.00</b>

(1) Kuusamo, Finland; corresponding to  $(\text{Ni}_{1.01}\text{Co}_{0.02})_{\Sigma=1.03}\text{Te}_{0.99}\text{Se}_{1.01}$ . (2) Do.; by electron microprobe, corresponding to  $(\text{Ni}_{1.07}\text{Fe}_{0.01}\text{Co}_{0.01})_{\Sigma=1.09}\text{Te}_{0.92}\text{Se}_{1.05}\text{S}_{0.03}$ . (3) NiTeSe.

**Mineral Group:** Melonite group.

**Occurrence:** In narrow carbonate-bearing fissure veinlets in albite.

**Association:** Clausthalite, hematite, selenian polydymite, selenian linnæite, pyrite.

**Distribution:** From Kuusamo, northeastern Finland [TL].

**Name:** For the Kitka River, Finland, in the valley of which the mineral was found.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 120267.

**References:** (1) Häkli, T.A., Y. Vuorelainen, and T.G. Sahama (1965) Kitkaite (NiTeSe), a new mineral from Kuusamo, northeast Finland. *Amer. Mineral.*, 50, 581–586. (2) Criddle, A.J. and C.J. Stanley, Eds. (1993) *Quantitative data file for ore minerals*, 3rd ed. Chapman & Hall, London, 289.