

Crystal Data: Hexagonal. *Point Group:* 3m, 32, or $\bar{3}2/m$. As isolated lenticular nests, to 1 mm; as near-parallel, radiating or chaotic aggregates of mica-like, corrugated flakes, to 0.1 mm; or as flakes epitaxially growing on Ti-bearing pyrrhotite, to 0.7 mm.

Physical Properties: *Cleavage:* Perfect on {001}. *Fracture:* Laminated. *Tenacity:* Flexible, inelastic. VHN = 64 (5 g load). Hardness = ~1 D(meas.) = n.d. D(calc.) = 3.63

Optical Properties: Opaque. *Color:* Iron black; light to dark gray in reflected light. *Streak:* Black. *Luster:* Metallic. *Anisotropism:* Strong. *Pleochroism:* Strong, light to dark gray. *Optical Class:* n.d.
R₁-R₂: (470) 8.7-18.9, (546) 8.7-19.4, (589) 8.8-19.0, (650) 8.6-18.2

Cell Data: *Space Group:* $P\bar{3}m1$, $P3m1$, or $P321$. [*a* = 3.262(2) *c* = 11.44(2) sulfide sub-lattice] [*a* = 3.066(2) *c* = 11.52(2) hydroxide sub-lattice] One-layer polytypes. Z = 1

X-ray Powder Pattern: Mt. Kaskasnyunchorr, Khibiny alkaline complex, Kola Peninsula, Russia. 11.40 (100), 5.65 (56), 2.812 (21), 1.622 (11), 2.647 (9), 2.248 (4), 1.573 (4)

Chemistry:	(1)	(1)		
	Mg	6.25	Nb	18.17
	Al	4.31	Mo	15.89
	Ca	0.00	W	8.13
	V	0.86	S	27.68
	Mn	0.00	O	16.33
	Fe	0.44	H	[1.03]
			Total	99.09

(1) Mt. Kaskasnyunchorr, Russia; average of 5 electron microprobe analyses, H calculated so that all O are OH⁻, OH⁻ confirmed by Raman spectroscopy; corresponding to (Nb_{0.45}Mo_{0.38}W_{0.10}V_{0.04})_{Σ=0.97}S₂·(Mg_{0.60}Al_{0.37}Fe_{0.02})_{Σ=0.99}(OH)_{2.36}.

Mineral Group: Valleriite group.

Occurrence: Of hydrothermal origin in fenites formed by a peralkaline fluid, as a source of Nb, reacting with a large xenolith of alumina-rich metamorphic rocks (metapelites) in agpaitic nepheline syenite.

Association: Orthoclase, anorthoclase, nepheline, fluorophlogopite, corundum, pyrrhotite, pyrite, rutile, monazite-(Ce), graphite, edgarite, molybdenite, tungstenite, alabandite.

Distribution: From Mt. Kaskasnyunchorr, Khibiny alkaline complex, Kola Peninsula, Russia.

Name: After the Greek word εκπληξη meaning “surprise”, for its exotic combination of major chemical constituents.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (# 93628).

References: (1) Pekov, I.V., V.O. Yapaskurt, Y.S. Polekhovsky, M.F. Vigasina, and O.I. Siidra (2014) Ekplexite (Nb,Mo)S₂·(Mg_{1-x}Al_x)(OH)_{2+x}, kaskasite (Mo,Nb)S₂·(Mg_{1-x}Al_x)(OH)_{2+x} and manganokaskasite (Mo,Nb)S₂·(Mn_{1-x}Al_x)(OH)_{2+x}, three new valleriite-group mineral species from the Khibiny alkaline complex, Kola peninsula, Russia. Mineral. Mag., 78(3), 663-679. (2) (2015) Amer. Mineral., 100, 658-659 (abs. ref. 1).