Ellingsenite $Na_5Ca_6Si_{18}O_{38}(OH)_{13}.6H_2O$

Crystal Data: Triclinic. *Point Group*: $\bar{1}$. Rhomb-like crystals, flattened on [001] and elongated along [100] in radiating sheaves, to 3 mm.

Physical Properties: *Cleavage*: Perfect on {001}. *Fracture*: Smooth. *Tenacity*: Sectile. Hardness = 4 D(meas.) = 2.32(5) D(calc.) = 2.363

Optical Properties: Transparent. *Color*: Colorless, white in aggregates. *Streak*: White. *Luster*: Vitreous individuals, silky aggregates.
Optical Class: Biaxial (-). α = 1.520(2) β = 1.534(2) γ = 1.536 2V(meas.) = 5°
2V(calc.) = n.d. *Orientation*: $X = c$.

Cell Data: *Space Group*: $P\bar{1}$. a = 9.576(11) b = 5.577(11) c = 16.438(19) α = 85.85(2)° β = 75.23(2)° γ = 60.142(14)° Z = 1

X-ray Powder Pattern: Ariskop quarry, Aris alkaline complex, Namibia.
15.50 (100), 3.023 (33), 3.159 (30), 1.827 (27), 2.791 (24), 4.22 (16), 4.98 (14)

Chemistry:

	(1)
Na_2O	9.26
SiO_2	60.35
K_2O	0.23
CaO	17.35
H_2O	12.5
Total	99.69

(1) Ariskop quarry, Aris alkaline complex, Namibia; average of 4 electron microprobe analyses, H_2O by Penfield method; corresponding to $(Na_{4.95}K_{0.09})_{\Sigma=5.04}(Ca_{5.57}Na_{0.43})_{\Sigma=6.00}Si_{18.10}O_{38}(OH)_{13}\cdot 6H_2O$.

Occurrence: A low-temperature mineral in vesicles in hydrothermally altered phonolite.

Association: Aegirine, albite, manganoneptunite, microcline, natrolite, polylithionite.

Distribution: From the Ariskop quarry, Aris alkaline complex, 25 km south of Windhoek, Namibia.

Name: Honors Dr. Hans Vidar Ellingsen (b. 1930), who has been chairman of the Norwegian Amateur Geological Society and who collected the first specimens.

Type Material: Mineralogical Museum, St. Petersburg State University, Russia (1/19443), and at the Natural History Museum, Oslo University, Norway (42188).

References: (1) Yakovenchuk, V.N., G.Yu. Ivanyuk, Y.A. Pakhomovsky, E.A. Selivanova, and J.A. Mikhailova (2011) Ellingsenite, $Na_5Ca_6Si_{18}O_{38}(OH)_{13}.6H_2O$, a new martinite-related mineral species from phonolite of the Aris alkaline complex, Namibia. Can. Mineral., 49, 1165-1173.
(2) (2012) Amer. Mineral., 97, 1261 (abs. ref. 1).