Mazzite-Na $Na_8(Si_{28}Al_8)O_{72}\cdot 30H_2O$

Crystal Data: Hexagonal. *Point Group*: 6/*m* 2/*m* 2/*m*. As very thin, fibers to 2 mm long, and commonly fills small cavities as satiny mats.

Physical Properties: *Cleavage*: n.d. *Fracture*: n.d. *Tenacity*: Fragile, flexible. Hardness = n.d. D(meas.) = 2.16 D(calc.) = 2.18

Optical Properties: Transparent. *Color*: White. *Streak*: White. *Luster*: Vitreous. *Optical Class*: Uniaxial (+); nearly isotropic. ε = 1.472(3) ω = 1.471(3)

Cell Data: *Space Group*: $P6_3/mmc$. a = 18.2343(7) c = 7.6371(2) Z = 1

X-ray Powder Pattern: U.S. Borax mine, Boron, California, USA.
9.08 (100), 3.787 (80), 6.86 (70), 5.95 (70), 3.150 (70), 4.681 (40), 3.511 (40)

Chemistry:

	(1)
SiO_2	57.65
Al_2O_3	14.35
Fe_2O_3	0.65
MgO	0.22
CaO	0.18
BaO	0.14
Na_2O	8.07
K_2O	0.03
H_2O	18.70
Total	99.99

(1) U.S. Borax mine, Boron, California, USA; electron microprobe analysis, H_2O by TGA, corresponding to $(Na_{7.52}K_{0.02}Mg_{0.16}Ca_{0.09}Ba_{0.03})[Fe_{0.24}Al_{8.13}Si_{27.71}O_{72}]\cdot 29.98H_2O$.

Mineral Group: Zeolite group.

Occurrence: Filling cavities in basalt overlain by layers of silt and clay that are overlain by lacustrine deposits of silt and sodium borate with a few interbeds of rhyolite tuff. Likely affected by extensive sodium cation exchange.

Association: Ferroan saponite, phillipsite-Na, gmelinite-Na, mordenite, clinoptilolite-Na, chabazite-Na, heulandite-Na, analcime.

Distribution: At the U.S. Borax mine, Boron, California, USA.

Name: Suffix, *Na*, signifies the sodium-dominant analog of *mazzite*-Mg.

Type Material: n.d.

References: (1) Arletti, R., E. Galli, G. Vezzalini, and W.S. Wise (2005) Mazzite-Na, a new zeolite from Boron, California: Its description and crystal structure. Amer. Mineral., 90, 1186-1191.