

$\text{Na}_3(\text{Na}_{0.93}\text{Sb}_{0.07})\text{Sb}_7\text{Se}_3\text{O}_9([\text{OH}]_{0.36}[\text{H}_2\text{O}]_{0.64})_{3.15}$	<i>hP66</i>	(176) $P6_3/m - i^2h^6fb$
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$\text{Na}_6[\text{Sb}_{12}\text{O}_{18}](\text{SbSe}_3)_2(\text{Na}_{1.86}\text{Sb}_{0.14})(\text{OH})_{2.28}(\text{H}_2\text{O})_{4.02}$ [1], cetineite family

Structural features: SbO_3 ψ -tetrahedra share vertices to form infinite tubes with Sb_6O_6 rings parallel to [001]; single SbSe_3 ψ -tetrahedra (orientational disorder up-down) between the tubes, Na, (Na,Sb) and $(\text{H}_2\text{O},\text{OH})$ in the tubes.

Wang X. (1995) [1]

$\text{H}_{5.16}\text{Na}_{3.93}\text{O}_{12.15}\text{Sb}_{7.07}\text{Se}_3$

$a = 1.4423$, $c = 0.5565$ nm, $c/a = 0.386$, $V = 1.0026$ nm³, $Z = 2$

site	Wyck.	sym.	<i>x</i>	<i>y</i>	<i>z</i>	occ.	atomic environment
O1	12i	1	0.0568	0.3437	0.002		non-colinear Sb ₂
Se2	12i	1	0.3607	0.5235	0.216	0.5	
M3	6h	<i>m..</i>	0.013	0.125	$\frac{1}{4}$	0.55	non-colinear (OH ₂) ₂
M4	6h	<i>m..</i>	0.129	0.103	$\frac{1}{4}$	0.5	non-colinear (OH ₂) ₂
Na5	6h	<i>m..</i>	0.1843	0.2931	$\frac{1}{4}$		
O6	6h	<i>m..</i>	0.344	0.1265	$\frac{1}{4}$		non-colinear Sb ₂
Sb7	6h	<i>m..</i>	0.39644	0.02208	$\frac{1}{4}$		non-coplanar triangle O ₃
Sb8	6h	<i>m..</i>	0.43562	0.2811	$\frac{1}{4}$		non-coplanar triangle O ₃
Sb9	4f	3..	$\frac{1}{3}$	$\frac{2}{3}$	0.0876	0.5	single atom Sb
M10	2b	-3..	0	0	0		bicapped hexagonal prism (OH ₂) ₁₂ Na ₂

M3 = 0.638OH₂ + 0.362OH; M4 = 0.638OH₂ + 0.362OH; M10 = 0.93Na + 0.07Sb

Transformation from published data: origin shift 0 0 $\frac{1}{2}$

Experimental: single crystal, diffractometer, X-rays, R = 0.055, T = 293 K

Remarks: We assigned an approximate value to the OH/OH₂ ratio of sites M3 and M4 based on the nominal composition. Short interatomic distances for partly occupied site(s). Hydrogen atoms are not taken into consideration for Pearson symbol, Wyckoff sequence and atomic environments. Contrary to reports on similar compounds, no superstructure reflections were observed.

References: [1] Wang X. (1995), Z. Kristallogr. 210, 693-694.