Omongwaite $Na_2Ca_5(SO_4)_6 \cdot 3H_2O$

Crystal Data: Monoclinic. *Point Group*: 2. Crystals, elongated on [001], with pseudohexagonal cross-sections and sphenoidal terminations, to 0.2 mm.

Physical Properties: *Cleavage*: None. *Fracture*: n.d. *Tenacity*: n.d.
Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.720

Optical Properties: Transparent. *Color*: Colorless. *Streak*: n.d. *Luster*: n.d.
Optical Class: Biaxial. n(calc) = 1.540 2V(meas.) = n.d. 2V(calc.) = n.d. *Orientation*: $Z \sim c$.

Cell Data: *Space Group*: *C2*. $a = 12.08(3)$ $b = 6.96(1)$ $c = 6.39(2)$ $\beta = 90.2(3)°$ $Z = 1$

X-ray Powder Pattern: Omongwa pan, southwestern Kalahari, Namibia.
3.015 (100), 2.819 (100), 6.005 (75), 3.481 (50), 2.139 (<25), 1.8534 (<25), 1.7437 (<25)

Chemistry:

	(1)	(2)
SO_3	56.16	54.78
CaO	30.82	31.98
Na_2O	5.25	7.07
K_2O	3.21	
H_2O	6.25	6.17
Total	101.69	100.00

(1) Omongwa pan, southwestern Kalahari, Namibia; average of 175 electron microprobe analyses, H_2O calculated from structure analysis, H_2O and SO_4 confirmed by Raman spectroscopy, corresponding to $(Na_{1.47}K_{0.59})_{\Sigma=2.06}Ca_{4.76}S_{6.07}O_{24} \cdot 3H_2O$. (2) $Na_2Ca_5(SO_4)_6 \cdot 3H_2O$.

Occurrence: As inclusions in gypsum in a dry lake, closed-basin evaporite deposit.

Association: Gypsum.

Distribution: From the Omongwa pan, near Aminuis, 140 km SSE of Gobabis, southwestern Kalahari, Namibia.

Name: For the locality from which the first specimens were obtained, the Omongwa pan, Namibia; "omongwa" meaning "salt" in the Otjiherero language.

Type Material: Royal Museum for Central Africa, Tervuren, Belgium (catalog no. RGM 15.908).

References: (1) Mees, F., F. Hatert, and R. Rowe (2008) Omongwaite, $Na_2Ca_5(SO_4)_6 \cdot 3H_2O$, a new mineral from recent salt lake deposits, Namibia. Mineral. Mag., 72, 1307–1318. (2) (2009) Amer. Mineral., 94, 1499-1500 (abs. ref. 1).