

**Stercorite****(NH<sub>4</sub>)Na(PO<sub>3</sub>OH)•4H<sub>2</sub>O**

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**Crystal Data:** Triclinic, pseudomonoclinic. *Point Group:*  $\bar{1}$ . Crystalline, nodular and massive. *Twinning:* Common on {010}.

**Physical Properties:** Hardness = 2 D(meas.) = 1.574 (synthetic). D(calc.) = 1.570 Soluble in H<sub>2</sub>O.

**Optical Properties:** Transparent. *Color:* White to yellowish and brownish; colorless in transmitted light. *Luster:* Vitreous.

*Optical Class:* Biaxial (+). *Orientation:* Z  $\simeq$   $\perp$  {001}; OAP  $\simeq$   $\perp$  {010}. *Dispersion:*  $r > v$ , rather strong.  $\alpha = 1.439$   $\beta = 1.442$   $\gamma = 1.469$   $2V(\text{meas.}) = 35^\circ 34'$

**Cell Data:** *Space Group:*  $P\bar{1}$ .  $a = 10.636(2)$   $b = 6.9187(14)$   $c = 6.4359(13)$   
 $\alpha = 90.46(3)^\circ$   $\beta = 97.87(3)^\circ$   $\gamma = 109.20(3)^\circ$   $Z = 2$

**X-ray Powder Pattern:** Synthetic. (ICDD 24-1048).  
 6.53 (100), 9.93 (95), 4.24 (55), 2.911 (50), 2.884 (50), 4.77 (40), 3.658 (40)

<b>Chemistry:</b>	(1)	(2)	(3)
P <sub>2</sub> O <sub>5</sub>	34.33	34.54	33.95
Na <sub>2</sub> O	15.75	14.50	14.82
(NH <sub>4</sub> ) <sub>2</sub> O	7.68	8.48	12.45
H <sub>2</sub> O	42.24	42.48	38.78
Total	100.00	100.00	100.00

(1) Ichaboe Island, Namibia. (2) Guañape Island, Peru. (3) (NH<sub>4</sub>)Na(PO<sub>3</sub>OH)•4H<sub>2</sub>O.

**Occurrence:** In bird and bat guano deposits.

**Association:** Struvite (Ichaboe Island, Namibia); archerite, biphosphammite (Petrogale Cave, Western Australia).

**Distribution:** On Ichaboe Island, northwest of Lüderitz, Namibia. From Guañape Island, south of Trujillo, Peru. In Petrogale Cave, near Madura, Western Australia.

**Name:** From the Latin for *dung*.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 698–699. (2) Ferraris, G. and M. Franchini-Angela (1974) Hydrogen bonding in the crystalline state: crystal structure and twinning of NaNH<sub>4</sub>HPO<sub>4</sub>•4H<sub>2</sub>O (stercorite). Acta Cryst., 30, 504–510.