Rhabdophane-(Y) $YPO_4 \cdot H_2O$

Crystal Data: Hexagonal. *Point Group*: 622. Rod-like crystals to 3μm form divergent radial aggregates.

Physical Properties: *Cleavage*: n.d. *Fracture*: n.d. *Tenacity*: n.d. Hardness = n.d.
D(meas.) = n.d. D(calc.) = 4.54

Optical Properties: Translucent. *Color*: Yellowish white to yellowish brown. *Streak*: Yellowish white. *Luster*: Silky to dull.
Optical Class: n.d.

Cell Data: *Space Group*: $P6_222$. a = 6.959(2) c = 6.384(2) Z = 3

X-ray Powder Pattern: Higashimatsuura basalt, Hinodematsu, Genkai-cho, Saga Prefecture, Japan. 2.821 (100), 3.013 (77), 6.026 (76), 4.385 (47), 3.480 (44), 2.127 (28), 1.854 (26)

Chemistry:

	(1)	(2)
CaO	2.03	
∑ REE	[61.47]	
Y_2O_3	15.25	55.92
La_2O_3	20.76	
Ce_2O_3	1.10	
Pr_2O_3	5.28	
Nd_2O_3	14.73	
Sm_2O_3	0.33	
Gd_2O_3	4.02	
P_2O_5	27.98	35.16
H_2O	[8.52]	8.92
Total	100.00	100.00

(1) Higashimatsuura basalt, Japan; average of 9 electron microprobe analyses, H_2O calculated by difference; corresponding to $(Y_{0.33}La_{0.31}Nd_{0.21}Pr_{0.08}Gd_{0.05}Ce_{0.02}Sm_{0.00})_{\Sigma=1.01}Ca_{0.09}P_{0.96}O_4 \cdot 1.15\ H_2O$.
(2) $YPO_4 \cdot H_2O$.

Mineral Group: Rhabdophane group.

Occurrence: Forms druses on alkaline olivine basalt.

Association: Plagioclase, forsterite, augite, enstatite, magnetite, ilmenite.

Distribution: From the Higashimatsuura alkaline olivine basalt, Hinodematsu, Genkai-cho, Saga Prefecture, Japan.

Name: As the *Y*-dominant analog of *rhabdophane*-(Ce).

Type Material: Kitakyushu Museum of Natural History and Human History, Kitakyushuu, Japan (KMNHM000002).

References: (1) Takai, Y. and S. Uehara (2012) Rhabdophane-(Y), $YPO_4 \cdot H_2O$, a new mineral in alkali olivine basalt from Hinodematsu, Genkai-cho, Saga Prefecture. Journal of Mineralogical and Petrological Sciences, 107(2), 110-113. (2) (2014) Amer. Mineral., 99, 2442 (abs. ref. 1).