

Crystal Data: Orthorhombic. *Point Group:* n.d. As platy crystals, to 50 μm , in radial spherical aggregates to 1 cm.

Physical Properties: *Cleavage:* Perfect on {001}. *Fracture:* n.d. *Tenacity:* n.d.
Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.98

Optical Properties: Transparent to translucent. *Color:* White. *Streak:* White.
Luster: Vitreous to silky.
Optical Class: n.d.

Cell Data: *Space Group:* n.d. $a = 6.295(1)$ $b = 9.089(2)$ $c = 63.49(1)$ $Z = 4$

X-ray Powder Pattern: Mitsukoshi, Karatsu, Saga Prefecture, Japan.
10.63 (100), 6.384 (77), 3.962 (51), 3.821 (27), 2.060 (23), 15.57 (20), 2.445 (16)

Chemistry:	(1)
Y_2O_3	27.61
La_2O_3	1.11
Pr_2O_3	0.65
Nd_2O_3	5.80
Sm_2O_3	1.68
Eu_2O_3	0.73
Gd_2O_3	3.82
Tb_2O_3	0.24
Dy_2O_3	3.10
Ho_2O_3	0.47
Er_2O_3	1.58
Tm_2O_3	0.04
Yb_2O_3	0.10
CaO	5.93
CO_2	29.55
H_2O	15.03
Total	97.44

(1) Mitsukoshi, Karatsu, Saga Prefecture, Japan; average of 5 electron microprobe analyses, CO_2 and H_2O by CHN analyzer; corresponding to $\text{Ca}_{1.76}(\text{Y}_{4.08}\text{Nd}_{0.58}\text{Gd}_{0.35}\text{Dy}_{0.28}\text{Sm}_{0.16}\text{Er}_{0.14}\text{La}_{0.11}\text{Pr}_{0.07}\text{Eu}_{0.07}\text{Ho}_{0.04}\text{Tb}_{0.02}\text{Yb}_{0.01})_{\Sigma=5.91}(\text{CO}_3)_{11.2} \cdot 13.9\text{H}_2\text{O}$.

Occurrence: As a druse in alkali olivine basalt.

Association: Lokkaite-(Y), tenerite-(Y), kimuraite-(Y).

Distribution: At Mitsukoshi, Karatsu, Saga Prefecture, Japan.

Name: For “Hizen”, the historic name (between the 7th and 16th centuries) for the locality that produced the first specimens and a suffix for the dominant rare earth element.

Type Material: Kitakyushu Museum of Natural History and Human History, Kitakyushu, Japan (KMNHM000001).

References: (1) Takai Y. and S. Uehara (2013) Hizenite-(Y), $\text{Ca}_2\text{Y}_6(\text{CO}_3)_{11} \cdot 14\text{H}_2\text{O}$, a new mineral in alkali olivine basalt from Mitsukoshi, Karatsu, Saga Prefecture, Japan. *J. of Mineral. and Petro. Sci.*, 108(3), 161-165. (2) (2016) *Amer. Mineral.*, 101, 488 (abs. ref. 1).