Metaborite HBO_2

Crystal Data: Cubic. *Point Group:* $\overline{4}3m$. Crystals show combinations of {111}, {101}, {211}, to 1 cm, occurring typically in aggregates.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 5 D(meas.) = 2.47 D(calc.) = 2.489 Soluble in H_2O.

Optical Properties: Semitransparent. *Color:* Colorless to pale brown. *Luster:* Vitreous. *Optical Class:* Isotropic. $n = 1.618(2)$

Cell Data: *Space Group:* $P\overline{4}3n$. $a = 8.89(1)$ $Z = 24$

X-ray Powder Pattern: Ak-saĭ, Kazakhstan.
1.938 (10), 4.53 (5), 2.835 (4), 6.60 (3), 3.71 (3), 2.388 (3), 2.102 (3)

Chemistry:

	(1)	(2)
B_2O_3	77.60	79.44
MgO	2.15	
H_2O	20.00	20.56
Total	99.75	100.00

(1) Ak-saĭ, Kazakhstan. (2) HBO_2.

Occurrence: In fine-grained halite in a salt dome (Chalkar salt dome, Kazakhstan).

Association: Halite, anhydrite, kieserite, preobrazhenskite, boracite, aksaite, ginorite, hilgardite, strontioborite, halurgite (Chalkar salt dome, Kazakhstan).

Distribution: From the Chelkar salt dome, Ak-saĭ Valley, Uralsk district, and at the Inder borate deposit, Kazakhstan.

Name: From the Greek *meta*, as a lesser hydrate than orthoboric acid.

Type Material: Mining Institute, St. Petersburg, 1015/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 69825.

References: (1) Lobanova, V.V. and N.P. Avrova (1964) The new mineral metaborite – natural metaboric acid. Zap. Vses. Mineral. Obshch., 93, 329–334 (in Russian). (2) (1965) Amer. Mineral., 50, 261–262 (abs. ref. 1). (3) Zachariason, W.H. (1960) The crystal structure of cubic metaboric acid. Acta Cryst., 16, 380–384. (4) (1966) NBS Mono. 25, 4, 27.