Halurgite $Mg_2[B_4O_5(OH)_4]_2 \cdot H_2O$

Crystal Data: Monoclinic, pseudo-orthorhombic. *Point Group:* $2/m$ or m. As lamellar crystals with rhombic outline, to 3 mm, subparallel or in radial aggregates; most commonly granular, fine-grained massive.

Physical Properties: Hardness = 2.5–3 D(meas.) = 2.19 D(calc.) = 2.238 Slowly soluble in H_2O.

Optical Properties: Transparent. *Color:* Colorless, white. *Luster:* [Subvitreous.] *Optical Class:* Biaxial (+). *Orientation:* $Z \parallel$ long rhombus diagonal; $X \parallel$ short rhombus diagonal. $\alpha = 1.532(2)$ $\beta = 1.545(2)$ $\gamma = 1.572(2)$ 2V(meas.) = n.d. 2V(calc.) = 70°

Cell Data: *Space Group:* $P2/c$ or Pc. $a = 13.25(4)$ $b = 7.60(3)$ $c = 13.20(4)$ $\beta = 92°9(10)'$ Z = 4

X-ray Powder Pattern: Chelkar salt dome, Kazakhstan.
3.87 (10), 3.29 (10), 4.81 (9), 2.163 (9), 1.269 (8), 2.643 (7), 3.57 (6)

Chemistry:

	(1)	(2)
B_2O_3	61.90	62.00
MgO	17.80	17.95
H_2O	19.80	20.05
Total	99.50	100.00

(1) Chelkar salt dome, Kazakhstan. (2) $Mg_2[B_4O_5(OH)_4]_2 \cdot H_2O$.

Occurrence: Of rare occurrence in interstices and vugs in a rock salt diapir.

Association: Boracite, kaliborite, pinnoite, hilgardite, ginorite, bischofite, kieserite, preobrazhenskite, aksaite, strontioborite, metaborite, anhydrite, halite.

Distribution: From the Chelkar salt dome, Ak-saĭ Valley, Uralsk district, Kazakhstan.

Name: Honors the Institute of Halurgy, St. Petersburg, Russia, for its studies of saline deposits.

Type Material: Institute of Halurgy; Mining Institute, St. Petersburg, 1488/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 69833.

References: (1) Lovanova, V.V. (1962) A new borate, halurgite. Doklady Acad. Nauk SSSR, 143, 693–696 (in Russian). (2) (1962) Amer. Mineral., 47, 1217–1218 (abs. ref. 1). (3) Kondrat'eva, V.V. (1964) New X-ray data regarding halurgite and inderborite. Kristallografiya (Sov. Phys. Crystal.), 9(5), 735–736 (in Russian). (4) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 95.