## Chambersite $Mn_3B_7O_{13}Cl$



**Crystal Data:** Orthorhombic, pseudocubic. *Point Group:* $mm2$; $\bar{4}3m$ (pseudocubic). Crystals are pseudotetrahedral {111}, modified by {001}, {110}, and {$1\bar{1}1$}, to 2 cm, paramorphous and composed of microscopically twinned aggregates of orthorhombic material inverted from the high-temperature form. *Twinning:* Rare as interpenetrant twins on [111] with twin plane {111} (pseudocubic).

**Physical Properties:** *Fracture:* Subconchoidal to uneven. Hardness = 7 D(meas.) = 3.49(2) D(calc.) = 3.48

**Optical Properties:** Transparent to opaque. *Color:* Colorless to deep purple, darkening with exposure to sunlight. *Luster:* [Vitreous.]
*Optical Class:* Biaxial (+). $\alpha = 1.732(1)$ $\beta = 1.737(1)$ $\gamma = 1.744(1)$ 2V(meas.) = 83(3)°

**Cell Data:** *Space Group:* $Pca2_1$. $a = 8.68(1)$ $b = 8.68(1)$ $c = 12.26(1)$ Z = 4

**X-ray Powder Pattern:** Barber's Hill salt dome, Texas, USA.
3.07 (10), 2.74 (6), 2.08 (6), 3.54 (5), 2.17 (5), 1.851 (5), 2.50 (3)

**Chemistry:**

| | (1) | (2) | | (1) | (2) |
|---|---|---|---|---|---|
| $SiO_2$ | 0.32 | | CaO | trace | |
| $TiO_2$ | trace | | $Na_2O$ | 0.05 | |
| $B_2O_3$ | 49.50 | 50.35 | $K_2O$ | 0.03 | |
| $Al_2O_3$ | 0.12 | | Cl | 6.34 | 7.32 |
| FeO | 1.28 | | $H_2O$ | 0.87 | |
| MnO | 41.87 | 43.98 | $-O = Cl_2$ | 1.39 | 1.65 |
| MgO | 0.05 | | Total | 99.04 | 100.00 |

(1) Barber's Hill salt dome, Texas, USA; $(Mn_{2.90}Fe_{0.09}Mg_{0.01})_{\Sigma=3.00}B_{7.00}O_{13}Cl_{0.88}$.
(2) $Mn_3B_7O_{13}Cl$.

**Occurrence:** In brine residues from extraction wells in salt domes.

**Association:** Halite, anhydrite, gypsum.

**Distribution:** In the USA, from the Barber's Hill salt dome, Mont Belvieu, Chambers Co., Texas and the Venice salt dome, Plaquemines Parish, Louisiana. In the Jixian Mn–B deposits, Hebei Province, China. From Pomyarka, near Truskarets, Carpathian Mountains, Ukraine.

**Name:** For the location of the first known occurrence, Chambers Co., Texas, USA.

**Type Material:** Harvard University, Cambridge, Massachusetts, 107884; National Museum of Natural History, Washington, D.C., USA, 115327.

**References:** (1) Honea, R.M. and F.R. Beck (1962) Chambersite, a new mineral. Amer. Mineral., 47, 665–671.