

Comancheite

Hg₁₃(Cl, Br)₈O₉

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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$ or $mm2$. Rarely as sprays of acicular crystals, elongated || [001], up to 80 μm , and as anhedral masses.

Physical Properties: *Cleavage:* Fair on {001} and {110}. *Tenacity:* Brittle. *Hardness* = 2
D(meas.) = 7.7(4) D(calc.) = 8.0

Optical Properties: Transparent to translucent. *Color:* Red-orange to yellow in crystals; red when massive. *Streak:* Yellow-orange. *Luster:* Vitreous in crystals; resinous when massive. *Optical Class:* Biaxial. *Orientation:* Extinction parallel; length-fast. *Absorption:* Strong. $n = 1.78\text{--}1.79$ $2V(\text{meas.}) = \text{n.d.}$

Cell Data: *Space Group:* $Pn\bar{m}$ or $Pnn2$. $a = 18.41(1)$ $b = 21.64(1)$ $c = 6.677(2)$
 $Z = 4$

X-ray Powder Pattern: Terlingua, Texas, USA.
2.669 (10), 2.878 (8), 5.68 (7), 5.42 (6), 2.710 (5), 2.457 (5), 1.415 (5)

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|---------------------------------|-------|
| Chemistry: | (1) |
| HgO | 89.7 |
| Cl | 5.1 |
| Br | 8.9 |
| $-\text{O} = (\text{Cl, Br})_2$ | 2.0 |
| <hr/> | |
| Total | 101.7 |

(1) Terlingua, Texas, USA; by electron microprobe, corresponding to $\text{Hg}_{13}(\text{Cl}_{4.51}\text{Br}_{3.50})_{\Sigma=8.01}\text{O}_{9.07}$.

Occurrence: A secondary mineral in an oxidized mercury deposit.

Association: Calcite, goethite, hematite, quartz.

Distribution: From the Mariposa mine, Terlingua, Brewster Co., Texas, USA.

Name: For the Comanche Indians, the first miners of the mercury deposits in which this mineral occurs.

Type Material: Canadian Geological Survey, Ottawa, Canada, 14608; National Museum of Natural History, Washington, D.C., USA, 150760.

References: (1) Roberts, A.C., H.G. Ansell, and P.J. Dunn (1981) Comancheite, a new mercury oxychloride-bromide from Terlingua, Texas. *Can. Mineral.*, 19, 393–396. (2) (1982) *Amer. Mineral.*, 67, 622 (abs. ref. 1).