

Crystal Data: Hexagonal. *Point Group:* 3*m*. Very rarely as single rhombohedral crystals; commonly as parallel intergrowths with mcconnellite in tabular rhombohedral crystals, to 1 mm; in radially bladed to platy or granular aggregates.

Physical Properties: *Cleavage:* {0001}. Hardness = n.d. D(meas.) = 4.11–4.12 (synthetic). D(calc.) = [4.13]

Optical Properties: Transparent, translucent in intergrowths with mcconnellite. *Color:* Deep red to pinkish brown.

Optical Class: Uniaxial. *n* = ~2.05, varies in mixtures. *ω* = 2.155 (synthetic). *ε* = 1.975

Cell Data: *Space Group:* *R3m*. *a* = 2.973(2) *c* = 13.392(1) *Z* = 3

X-ray Powder Pattern: Merume River, Guyana.

4.47 (vvs), 2.401 (vs), 1.857 (vs), 1.486 (ms), 1.537 (mw), 2.528 (w), 1.409 (w)

Chemistry:	(1)	(2)
SiO ₂	0.42	
Al ₂ O ₃	4.3	
Fe ₂ O ₃	0.85	
Cr ₂ O ₃	77.3	89.40
CuO	5.5	
H ₂ O		10.60
LOI	11.5	
Total	99.87	100.00

(1) Merume River, Guyana; intergrowth of 80%–86% estimated grimaldiite, the balance mcconnellite and H₂O. (2) CrO(OH).

Polymorphism & Series: Trimorphous with bracewellite and guyanaite.

Occurrence: In fine-grained intergrowth with other chromium oxide-hydroxide minerals in alluvial gravels (Merume River, Guyana); in cracks and crevices in penroseite from a hydrothermal mineral deposit (Hiaco, Bolivia).

Association: Bracewellite, eskolaite, guyanaite, mcconnellite (Merume River, Guyana); penroseite, barite (Hiaco, Bolivia).

Distribution: In the basin of the Merume River, Guyana. From the Hiaca mine, 30 km north-northeast of Colquechaca, Potosí, Bolivia.

Name: For Dr. Frank Saverio Grimaldi (1915–), formerly Chief Chemist, U.S. Geological Survey.

Type Material: Harvard University, Cambridge, Massachusetts, USA; The Natural History Museum, London, England, 1979,136.

References: (1) Milton, C., D.E. Appleman, M.H. Appleman, E.C.T. Chao, F. Cuttitta, J.I. Dinnin, E.J. Dwornik, B.L. Ingram, and H.J. Rose, Jr. (1976) Merumite, a complex assemblage of chromium minerals from Guyana. U.S. Geol. Surv. Prof. Paper 887, 1–29. (2) (1977) Amer. Mineral., 62, 593 (abs. ref. 1). (3) Livingstone, A., B. Jackson, and P.J. Davidson (1984) Grimaldiite, CrOOH, a second occurrence from the Hiaca mine, Colquechaca, Bolivia. Mineral. Mag., 48, 560–562. (4) Douglass, R.M. (1957) The crystal structure of HCrO₂. Acta Cryst., 10, 423–427.