

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. As equant grains to 200 μm in gillespite.

Physical Properties: *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* Conchoidal. Hardness = 5.5
D(meas.) = n.d. D(calc.) = 3.50

Optical Properties: Transparent. *Color:* White. *Streak:* White. *Luster:* Vitreous.
Optical Class: Isotropic. $n = 1.598$

Cell Data: *Space Group:* $Im\bar{3}m$. $a = 18.5502(4)$ $Z = 1$

X-ray Powder Pattern: Gun Claim, 5 km southeast of the Itsi Lakes, Yukon, Canada.
3.189 (100), 3.016 (72), 4.39 (70), 2.287 (59), 2.323 (46), 2.803 (42), 3.288 (34)

Chemistry:	(1)
Na ₂ O	0.15
K ₂ O	0.21
CaO	0.21
BaO	47.61
FeO	0.27
Al ₂ O ₃	11.75
TiO ₂	0.05
SiO ₂	28.30
P ₂ O ₅	1.61
Cl	6.64
– O = Cl	1.50
sub-total	95.29
<u>OH⁻</u>	<u>4.29</u>
Total	99.58

(1) Gun Claim, Yukon, Canada; average of 11 electron microprobe analyses supplemented by Raman spectroscopy, OH⁻ calculated for charge balance from crystal structure; corresponds to Ba_{41.1}Na_{0.7}K_{0.6}Fe_{0.5}Ca_{0.5}Ti_{0.1}[Si_{62.5}Al_{30.5}P_{3.0}]_{Σ=96}O₁₉₂Cl_{24.82}(OH)_{33.4}.

Occurrence: In a hydrothermal Pb-Zn deposit in lenses of pyroxene-quartz skarn.

Association: Gillespite, pellyite, edingtonite; alters to a mixture of cerchiarite-(Fe) and hedenbergite.

Distribution: Found at the Gun Claim, 5 km southeast of the Itsi Lakes, Yukon, Canada.

Name: Honors Walter M. Meier (1926-2009) who among numerous other contributions to zeolite science determined the atomic structure of zeolite ZK-5, which has the same structure as meierite.

Type Material: Royal Ontario Museum, Toronto, Canada (M56744).

References: (1) Peterson, R.C., G. Farber, R.J. Evans, L. Groat, L. MacNeil, B. Joy, B. Lafuente, and T. Witzke (2016) Meierite, a new barium mineral with KFI-type zeolite framework from the Gun Claim, Yukon, Canada. *Can. Mineral.*, 54(5), 1249-1259. (2) (2018) *Amer. Mineral.*, 103, 2529 (abs. ref. 1).