

Crystal Data: Orthorhombic. *Point Group:* $mm2$. In aggregates of fine needles, as inclusions, to 40 μm , in troilite.

Physical Properties: *Cleavage:* One, platy, or a parting. Hardness = < 3 D(meas.) = n.d. D(calc.) = 3.21

Optical Properties: Semitransparent. *Color:* Colorless to white.
Optical Class: Biaxial (-) [sic]. *Orientation:* Parallel extinction. $\alpha = 1.607$ $\beta = 1.610$
 $\gamma = 1.616$ $2V(\text{meas.}) = \sim 65^\circ$ $2V(\text{calc.}) = 70^\circ 45'$

Cell Data: *Space Group:* $Pmn2_1$. $a = 5.167(25)$ $b = 9.259(45)$ $c = 6.737(32)$ $Z = 4$

X-ray Powder Pattern: Cape York meteorite.
 2.72 (100), 3.79 (90), 1.91 (80), 2.63 (60), 2.58 (50), 2.51 (40), 2.19 (40)

| Chemistry: | (1) | (2) |
|-------------------------------|--------|--------|
| P ₂ O ₅ | 44.9 | 44.91 |
| MnO | 0.06 | |
| CaO | 35.6 | 35.48 |
| Na ₂ O | 19.5 | 19.61 |
| Total | 100.06 | 100.00 |

(1) Cape York meteorite; by electron microprobe. (2) NaCaPO₄.

Occurrence: As inclusions in troilite nodules in an iron meteorite.

Association: Troilite, chromite, other unidentified phosphates.

Distribution: In the Agpalilik and other fragments of the Cape York iron meteorite.

Name: To honor Dr. Vagn Fabius Buchwald (1929–), Technical University of Denmark, Lyngby, Denmark, for his contributions to the study of iron meteorites.

Type Material: University of Copenhagen, Copenhagen, Denmark.

References: (1) Olsen, E., J. Erlichman, T.E. Bunch, and P.B. Moore (1977) Buchwaldite, a new meteoritic phosphate mineral. *Amer. Mineral.*, 62, 362–364.