

**Crystal Data:** Hexagonal. *Point Group:* 6/m. As hexagonal prisms with pyramidal terminations displaying {100} and {101} to 0.5 mm, commonly doubly terminated. Often in sub-parallel intergrowths and irregular clusters.

**Physical Properties:** *Cleavage:* None. *Fracture:* Subconchoidal. *Tenacity:* Brittle. Hardness = ~4 D(meas.) = n.d. D(calc.) = 5.445 Decomposes quickly in dilute HCl.

**Optical Properties:** Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Subadamantine. *Optical Class:* Uniaxial(-).  $\omega = 1.836(5)$   $\varepsilon = 1.824(5)$  Nonpleochroic.

**Cell Data:** *Space Group:* P6<sub>3</sub>/m.  $a = 9.6402(12)$   $c = 7.0121(8)$   $Z = 2$

**X-ray Powder Pattern:** Blue Bell claims, San Bernardino County, California, USA. 2.880 (100), 3.978 (26), 1.879 (26), 3.509 (23), 8.384 (20), 2.0891 (20), 2.3485 (17)

Chemistry:	(1)	(2)
CaO	13.43	11.15
PbO	61.69	66.58
P <sub>2</sub> O <sub>5</sub>	22.88	21.17
F	2.19	1.89
- O = F	0.92	0.80
Total	99.27	100.00

(1) Blue Bell claims, San Bernardino County, California, USA; electron microprobe analyses supplemented by IR spectroscopy; corresponding to Ca<sub>2</sub>(Pb<sub>2.57</sub>Ca<sub>0.23</sub>)<sub>Σ=2.80</sub>(P<sub>3</sub>O<sub>11.76</sub>)F<sub>1.07</sub>. SEM-EDS analyses and IR spectroscopy yielded O = 21.28, F = 1.59, P = 10.33, Ca = 9.66, Pb = 60.08, Total = 102.95; corresponding to Ca<sub>2.00</sub>(Pb<sub>2.61</sub>Ca<sub>0.17</sub>)<sub>Σ=2.78</sub>(P<sub>3</sub>O<sub>11.91</sub>)F<sub>0.75</sub>.  
 (2) Ca<sub>2</sub>Pb<sub>3</sub>(PO<sub>4</sub>)<sub>3</sub>F.

**Mineral Group:** Apatite supergroup.

**Occurrence:** In the oxidation zone of a Pb-Cu-Zn-Ag deposit.

**Association:** Cerussite, chrysocolla, fluorite, fluorapatite, goethite, gypsum, mimetite, opal, phosphohedyphane, plumbogummite, plumbophyllite, plumbotsumite, pyromorphite, quartz, wulfenite.

**Distribution:** From the C adit, Blue Bell claims, Joe Dandy Hill, Soda Mountains, ~11 km west of Baker, San Bernardino County, California, USA.

**Name:** The prefix, *fluor*, designates the F-analog of *phosphohedyphane*.

**Type Material:** Natural History Museum of Los Angeles County, Los Angeles, California, USA (60550, 60551, 60552, 60553, 60554, and 60555).

**References:** (1) Kampf, A.R. and R.M. Housley (2011) Fluorophosphohedyphane, Ca<sub>2</sub>Pb<sub>3</sub>(PO<sub>4</sub>)<sub>3</sub>F, the first apatite supergroup mineral with essential Pb and F. *Amer. Mineral.*, 96, 423-429.