Cassidyite $Ca_2(Ni,Mg)(PO_4)_2 \cdot 2H_2O$

Crystal Data: Triclinic. *Point Group:* $\overline{1}$ or 1. Fibrous, as spherules and thin crusts.

Physical Properties: Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.1–3.2

Optical Properties: Semitransparent. *Color:* Pale green to bright green; colorless in transmitted light.
Optical Class: Biaxial. *Orientation:* Length-slow. α = 1.64–1.65 β = n.d. γ = 1.67–1.68
2V(meas.) = n.d.

Cell Data: *Space Group:* $P\overline{1}$ or $P1$. $a = 5.71$ $b = 6.73$ $c = 5.41$ $\alpha = 96°49.5'$ $\beta = 107°21.5'$ $\gamma = 104°34.9'$ Z = [1]

X-ray Powder Pattern: Wolf Creek meteorite.
2.70 (100), 3.03 (95), 2.67 (79), 3.23 (65), 3.13 (48), 1.660 (46), 3.49 (38)

Chemistry:

	(1)	(2)
P_2O_5	39.2	40.83
FeO	0.0	
CoO	0.4	
NiO	6.4 – 16.2	10.74
MgO	2.2 – 5.7	5.80
CaO	32.3	32.26
H_2O		10.37
Total		100.00

(1) Wolf Creek meteorite; partial analyses by electron microprobe. (2) $Ca_2(Ni,Mg)(PO_4)_2 \cdot 2H_2O$ with Ni:Mg = 1:1.

Mineral Group: Fairfieldite group.

Occurrence: An alteration product of a highly weathered iron-nickel meteorite, formed by alteration of schreibersite.

Association: Reevesite, goethite, nickelian maghemite, jarosite, nickel-rich serpentine, apatite, lipscombite.

Distribution: In the Wolf Creek meteorite.

Name: In honor of Dr. William A. Cassidy, who mapped the Wolf Creek, Australia, crater in 1953.

Type Material: National Museum of Natural History, Washington, D.C., USA, 119553, 119554A.

References: (1) White, J.S., Jr., E.P. Henderson, and B. Mason (1967) Secondary minerals produced by weathering of the Wolf Creek meteorite. Amer. Mineral., 52, 1190–1197.