Sweetite $Zn(OH)_2$

Crystal Data: Tetragonal. *Point Group:* 422. Dipyramidal crystals, to 1 mm, showing possible {112}; rare {001}, may be tabular.

Physical Properties: Hardness = n.d. D(meas.) = ∼3.33 D(calc.) = 3.41

Optical Properties: Translucent to transparent. *Color:* Colorless to whitish.
Optical Class: Uniaxial (–). $\omega = 1.635$ $\epsilon = 1.628$

Cell Data: *Space Group:* $P4_12_12$ or $P4_32_12$ (probable). $a = 8.222(5)$ $c = 14.34(1)$
Z = 20

X-ray Powder Pattern: Near Ashover, England.
2.922 (100), 3.572 (60), 4.53 (37), 1.764 (24), 2.708 (18), 2.257 (17), 1.560 (14)

Chemistry:

	(1)	(2)	(3)
ZnO	84.3	87.33	81.88
PbO		0.35	
CdO		0.11	
CaO		0.29	
H_2O	17.0	[17.0]	18.12
Total	101.3	[105.08]	100.00

(1) Near Ashover, England; by AA, H_2O by CHN analyzer; high total thought due to ZnO in the core of the analyzed crystal. (2) Do.; by electron microprobe, H_2O from (1), high total thought due to dehydration in the electron beam; corresponds to $Zn_{1.26}Ca_{0.01}[O_{0.55}(OH)_{1.45}]_{\Sigma=2.00}$. (3) $Zn(OH)_2$.

Polymorphism & Series: Trimorphous with ashoverite and wülfingite.

Occurrence: In an oxidized vein in limestone.

Association: Galena, ashoverite, wülfingite, anglesite, cerussite, hydrocerussite, litharge, fluorite, palygorskite, calcite.

Distribution: From a limestone quarry 200–300 m northwest of Milltown, near Ashover, Derbyshire, England.

Name: To honor Jessie May Sweet (1901–1979), Curator of the mineral collections of the British Museum (Natural History), London, England.

Type Material: The Natural History Museum, London, England, 1982,4.

References: (1) Clark, A.M., E.E. Fejer, A.G. Couper, and G.C. Jones (1984) Sweetite, a new mineral from Derbyshire. Mineral. Mag., 48, 267–269. (2) (1985) Amer. Mineral., 70, 438 (abs. ref. 1). (3) Clark, A.M., E.E. Fejer, G. Cressey, and P.C. Tandy (1988) Ashoverite, a new mineral, and other polymorphs of $Zn(OH)_2$ from Milltown, Ashover, Derbyshire. Mineral. Mag., 52, 699–702.