Leogangite $Cu_{10}(AsO_4)_4(SO_4)(OH)_6 \cdot 8H_2O$

Crystal Data: Monoclinic. *Point Group:* 2/*m*. As aggregates of platelets, flattened on (100) and elongated on [010], to 0.1 mm.

Physical Properties: *Cleavage:* Perfect (100). *Fracture:* Partings parallel to (010) and (001). *Tenacity:* Brittle. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.55

Optical Properties: Transparent. *Color:* Green with a bluish tint. *Streak:* Light green. *Luster:* Vitreous.
Optical Class: Biaxial (-). $\alpha = 1.590(2)$ $\beta = 1.740(2)$ $\gamma = 1.744(2)$ 2V(meas) = 18(2)° 2V(calc) = 17.3° *Dispersion:* Weak, $r > v$. *Pleochroism*: X = blue-green, Y=Z = pale green. Orientation: $X = a^*$; $Y = b$; $Z = c$.

Cell Data: *Space Group: C*2/*c*. $a = 21.770(7)$ $b = 12.327(4)$ $c = 10.720(3)$ $\beta = 92.85(1)°$ Z = 4

X-ray Powder Pattern: Danielstollen mining area, near Leogang, Salzburg Province, Austria. 10.85 (100), 2.630 (60), 5.44 (50), 3.625 (50), 3.090 (40), 2.672 (40), 4.9 (30)

Chemistry:

	(1)
CuO	51.1
As_2O_5	29.7
SO_3	5.1
SiO_2	0.2
H_2O	13.9
Total	100.0

(1) Danielstollen mining area, near Leogang, Salzburg Province, Austria.; average of 5 electron microprobe analyses, H_2O by difference, corresponding to $Cu_{9.94}(As_{0.99}Si_{0.01}O_4)_{\Sigma=4}(S_{0.99}O_4)(OH)_6 \cdot 8.89H_2O$.

Occurrence: A secondary mineral coating limonitic dolostone breccia and filling voids in the oxidized zone of a pyrite, galena, tennantite deposit.

Association: Olivenite, malachite, tyrolite, parnauite, strashimirite, euchroite, brochantite, langite, posnjakite, devilline.

Distribution: Found on one dump in both the Danielstollen and Inschlagalm mining areas, Schwarzleo Valley, about 10 km from Leogang, Salzburg Province, Austria.

Name: For the city (Leogang) in Austria near the first found specimens.

Type Material: Natural History Museum, Vienna, Austria; M8873.

References: (1) Lengauer, C.L., G. Giester, and E. Kirchner (2004) Leogangite, $Cu_{10}(AsO_4)_4(SO_4)(OH)_6 \cdot 8H_2O$, a new mineral from the Leogang mining district, Salzburg province, Austria. Mineral. Petrology, 81, 187–201. (2) (2005) Amer. Mineral., 90, 272 (abs. ref. 1).