

**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . As aggregates of tablets to 1 mm, flattened and stacked on {100}. As powdery masses in the interstices of gypsum crystals.

**Physical Properties:** *Cleavage:* Perfect on {100}. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = ~ 2 D(meas.) = n.d. D(calc.) = 3.256 Soluble in dilute HCl.

**Optical Properties:** Translucent. *Color:* Orange-yellow. *Streak:* Light yellow. *Luster:* Vitreous. *Optical Class:* Biaxial (-).  $\alpha = 1.745(2)$   $\beta = 1.761(2)$   $\gamma = 1.765(2)$   $2V(\text{meas.}) = 50(2)^\circ$   $2V(\text{calc.}) = 52.7^\circ$  *Pleochroism:*  $X = \sim$  colorless,  $Y = Z =$  orange-yellow. *Absorption:*  $X < Y \approx Z$ . *Orientation:*  $X = a$ ,  $Y = c$ ,  $Z = b$ . *Dispersion:* Strong,  $r > v$ .

**Cell Data:** *Space Group:*  $Pbca$ .  $a = 14.866(7)$   $b = 14.126(7)$   $c = 16.772(8)$   $Z = 8$

**X-ray Powder Pattern:** Jomac mine, Brown's Rim, San Juan County, Utah, USA. 3.219 (100), 7.45 (92), 3.566 (65), 2.0431 (36), 2.578 (28), 1.9817 (25), 3.713 (24)

<b>Chemistry:</b>	(1)	(2)
K <sub>2</sub> O	2.4	3.55
UO <sub>3</sub>	87.09	86.27
H <sub>2</sub> O	[10.51]	10.18
Total	100.00	100.00

(1) Jomac mine, Brown's Rim, White Canyon mining district, San Juan County, Utah, USA; average of 6 analyses by laser ablation-inductively coupled plasma-mass spectrometry, H<sub>2</sub>O calculated from structure for charge balance, Ca and K detected in levels < 0.01 wt. %; corresponds to  $\text{K}_{0.67}\text{Na}_{0.004}\text{Ca}_{0.012}\text{U}_4\text{O}_{20}\text{H}_{15.31}$ . (2)  $\text{K}(\text{H}_2\text{O})_2[(\text{UO}_2)_4\text{O}_2(\text{OH})_5]\cdot 3\text{H}_2\text{O}$ .

**Occurrence:** Collected in an abandoned mine tunnel in a roll-front uranium deposit.

**Association:** Gypsum, compreignacite, sklodowskite, blatonite, owsaldpeetersite, alunite, chalcoalumite, probable mbobomkulite or nickelalumite, boltwoodite.

**Distribution:** From the Jomac mine, Brown's Rim, White Canyon mining district, San Juan County, Utah, USA.

**Name:** Honors American mineral dealer and collector Bryan K. Lees (b. 1957), recipient of the Friends of Mineralogy Author of the Year Award (1998), Carnegie Mineralogical Award (1998), the Colorado School of Mines Medal (2003), and the American Mineral Heritage Award (2014).

**Type Material:** Natural History Museum of Los Angeles County, Los Angeles, California, USA (66285 and 66286).

**References:** (1) Olds, T.A., J. Plášil, A.R. Kampf, T. Spano, P. Haynes, S.M. Carlson, P.C. Burns, A. Simonetti, and O.P. Mills (2018) Leesite,  $\text{K}(\text{H}_2\text{O})_2[(\text{UO}_2)_4\text{O}_2(\text{OH})_5]\cdot 3\text{H}_2\text{O}$ , a new K-bearing schoepite-family mineral from the Jomac mine, San Juan County, Utah, U.S.A. (2) (2013) Amer. Mineral., 103, 143-150 (abs. ref. 1).