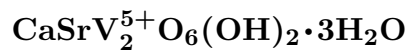


Delrioite



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Crystal Data: Monoclinic. *Point Group:* m or $2/m$. As radial aggregates of tiny acicular crystals, intimately intergrown in parallel orientation with metadelrioite. *Twinning:* On $\{100\}$, not uncommon.

Physical Properties: Hardness = ~ 2 $D(\text{meas.}) = 3.1(1)$ $D(\text{calc.}) = 3.16$ Readily soluble in H_2O ; reversibly dehydrated.

Optical Properties: Translucent. *Color:* Pale yellow-green to darker green on exposed surfaces, probably the result of photoreduction of some of the vanadium. *Luster:* Vitreous to pearly.

Optical Class: Biaxial ($-$); properties composite with metadelrioite. *Pleochroism:* X = colorless; Y = pale yellow; Z = deeper yellow. *Orientation:* Z = elongation; extinction parallel. $\alpha = 1.783(3)$ $\beta = 1.834(3)$ $\gamma = 1.866(3)$ $2V(\text{meas.}) = \text{Medium to large}$.

Cell Data: *Space Group:* Ia or $I2/a$. $a = 17.170(3)$ $b = 7.081(1)$ $c = 14.644(4)$
 $\beta = 102^\circ 29(1)'$ $Z = 8$

X-ray Powder Pattern: Jo Dandy mine, Colorado, USA.

6.52 (vs), 3.54 (s), 4.39 (ms), 3.26 (ms), 2.794 (ms), 2.174 (m), 4.19 (w)

Chemistry:

	(1)	(2)
V_2O_5	46.6	43.97
CaO	13.5	13.56
SrO	24.8	25.05
H_2O^+	5.7	17.42
H_2O^-	9.4	
Total	[100.0]	100.00

(1) Jo Dandy mine, Colorado, USA; an estimated 5:1 mixture with metadelrioite, $\text{CaSrV}_2\text{O}_6(\text{OH})_2$, recalculated to 100% after deduction of quartz 1.30%.

(2) $\text{CaSrV}_2\text{O}_6(\text{OH})_2 \cdot 3\text{H}_2\text{O}$.

Occurrence: An efflorescence on sandstone of the Salt Wash member of the Jurassic Morrison Formation associated with a U–V deposit.

Association: Metadelrioite, rossite, metarossite, quartz.

Distribution: From a dump at the Hummer portal of the Jo Dandy mine, Bull Canyon district, Paradox Valley, Montrose Co., Colorado, USA.

Name: For Mexican mineralogist Andrés Manuel del Río (1764–1849), who first discovered vanadium in North America.

Type Material: National Museum of Natural History, Washington, D.C., USA, 128296.

References: (1) Thompson, M.E. and A.M. Sherwood (1959) Delrioite, a new calcium strontium vanadate from Colorado. *Amer. Mineral.*, 44, 261–264. (2) Smith, M.L. (1970) Delrioite and metadelrioite from Montrose County, Colorado. *Amer. Mineral.*, 55, 185–200.