

Dussertite

Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$. As crystals, flattened on {0001}, to 0.01 mm; in rosettes and crusts.

Physical Properties: Hardness = 3.5 D(meas.) = 3.75 D(calc.) = 4.09-4.293

Optical Properties: Semitransparent. *Color:* Green to pistachio-green, bluish green; yellowish green in transmitted light.

Optical Class: Uniaxial (-), rarely anomalously biaxial. *Pleochroism:* In shades of greenish yellow. $\omega = 1.870$ $\varepsilon = 1.845-1.85$ $2V(\text{meas.}) = 15^\circ-20^\circ$

Cell Data: *Space Group:* $R\bar{3} m$. $a = 7.410(3)$ $c = 17.484(4)$ $Z = 3$

X-ray Powder Pattern: Djebel Debar, Algeria. (ICDD 35-621). 3.13 (100), 2.329 (40), 3.713 (30), 2.915 (30), 2.012 (30), 6.04 (25), 1.857 (25)

Chemistry:	(1)	(2)
As ₂ O ₅	31.23	34.42
Fe ₂ O ₃	34.57	35.87
CaO	0.08	
BaO	20.93	22.96
H ₂ O	9.30	6.75
<u>insol.</u>	<u>4.10</u>	<u> </u>
Total	100.21	100.00

(1) Djebel Debar, Algeria. (2) BaFe₃(AsO₄)₂(OH)₅. (3) Clara mine, Germany; no analysis given; said to correspond to Ba_{0.9}(Fe³⁺_{0.84}Sb⁵⁺_{0.16})_{2.6}(AsO₄)₂(OH,H₂O)₆.

Mineral Group: Alunite supergroup, **dussertite** group.

Occurrence: In the oxidized zone of some base-metal deposits, typically an alteration product of arsenopyrite.

Association: Beudantite, carminite, scorodite, arseniosiderite, stibiconite, goethite, quartz.

Distribution: From Djebel Debar, northeast of Hammam Meskhoutine, Qacentina (Constantine), Algeria. At the Senator mine, 20 km south-southwest of Kutahya, Turkey. In the Ojuela mine, Mapimí, Durango, Mexico. From Tecoma, Elko Co., Nevada, USA. In Germany, on Mt. Borstein, near Reichenbach, Hesse; in the Black Forest, at the Clara mine, near Oberwolfach, the Anton mine, Heubachtal, near Schiltach, and Freudenstadt, near Wittichen; at Schneeberg, Saxony.

Name: Honors Desiré *Dussert* (1872-?), French mining engineer who worked in Algeria.

Type Material: n.d.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 839-840. (2) Walenta, K. (1966) Beiträge zur Kenntnis seltener Arsenatmineralien unter besonderer Berücksichtigung von Vorkommen des Schwarzwaldes. 3. Folge. Tschermaks Mineral. Petrog. Mitt., 11, 121-164, esp. 129-132 (in German). (3) Kolitsch, U., P.G. Slade, E.R.T. Tiekink, and A. Pring (1999) The structure of antimonian dussertite and the role of antimony in oxysalt minerals. Mineral. Mag., 63, 17-26.