Faujasite $(Na_2, Ca)Al_2Si_4O_{12}\cdot 8H_2O$

Crystal Data: Cubic. *Point Group:* $4/m\ \overline{3}\ 2/m$. Crystals octahedra or rarely trisoctahedra, to 4 mm. *Twinning:* On {111}, contact and penetration twins.

Physical Properties: *Cleavage:* {111}, perfect. *Fracture:* Uneven to conchoidal. *Tenacity:* Brittle. Hardness = 4.5–5 D(meas.) = 1.92–1.93 D(calc.) = 2.09

Optical Properties: Transparent to translucent. *Color:* White, colorless, brown; colorless in thin section. *Streak:* White. *Luster:* Vitreous to adamantine.
Optical Class: Isotropic. $n = 1.466$–1.480

Cell Data: *Space Group: Fd3m.* a = 24.638–24.65 Z = 32

X-ray Powder Pattern: San Bernardino Co., California, USA.
3.757 (100), 14.2 (95), 5.64 (83), 3.292 (64), 4.355 (52), 2.904 (36), 2.373 (36)

Chemistry:

	(1)	(2)
SiO_2	46.12	48.59
Al_2O_3	16.81	15.97
MgO		0.79
CaO	4.79	4.93
Na_2O	5.09	3.02
K_2O		0.16
H_2O	27.02	[26.54]
Total	99.83	[100.00]

(1) Kaiserstuhl, Germany. (2) San Bernardino Co., California, USA; by electron microprobe, average of 15 analyses, H_2O by difference, corresponding to $(Na_{0.52}Ca_{0.47}Mg_{0.10}K_{0.02})_{\Sigma=1.11}$ $Al_{1.78}Si_{4.24}O_{12}\cdot 16H_2O$.

Mineral Group: Zeolite group.

Occurrence: Rare, in vesicles of basalts, phonolites, and tuffs; formed by palagonization or authigenically.

Association: Zeolites, olivine, augite, nepheline.

Distribution: In Germany, from Sasbach, Kaiserstuhl, and elsewhere in Baden-Württemberg; from the Pflasterkaute, near Eisenach, Thuringia; at Annerod, near Giessen, and at a number of localities around the Vogelsberg volcano, Hesse. From Aci Reale and Aci Castello, Sicily, Italy. On the Cima Dome, near Valley Wells, San Bernardino Co., California, and at several localities on Oahu, Hawaii, USA. From Davis Hill and Khartoum, Ontario; at Laurel, Hincks Bridge, and Notre-Dame-de-la-Salette, and at the Daisy Mica mine, Ottawa Co., Quebec, Canada. A few other localities are known.

Name: Honoring Barthélemy Faujas de Saint Fond (1741–1819), French mineralogist and vulcanologist.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 598–599. (2) Deer, W.A., R.A. Howie, and J. Zussman (1963) Rock-forming minerals, v. 4, framework silicates, 392–393. (3) Bergerhoff, G., W.H. Baur, and W. Nowacki (1958) Über die Kristallstruktur des Faujasites. Neues Jahrb. Mineral., Monatsh., 193–200 (in German). (4) Baur, W.H. (1964) On the cation and water positions in faujasite. Amer. Mineral., 49, 697–704. (5) Wise, W.S. (1982) New occurrence of faujasite in southeastern California. Amer. Mineral., 67, 794–798.