

Juanite**Ca₁₀Mg₄Al₂Si₁₁O₃₉•4H₂O(?)**

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Crystal Data: Orthorhombic (?). *Point Group:* n.d. As slender fibers in sheaflike aggregates, to about 1 mm; massive.

Physical Properties: Hardness = 5.5 D(meas.) = 3.01–3.3 D(calc.) = n.d.

Optical Properties: Semitransparent. *Color:* Nearly white to pistachio-green. *Luster:* Dull. *Optical Class:* Biaxial (+). $\alpha = 1.640(3)$ $\beta = \text{n.d.}$ $\gamma = 1.647(3)$ $2V(\text{meas.}) = 50^\circ$ (?)

Cell Data: *Space Group:* n.d. $Z = \text{n.d.}$

X-ray Powder Pattern: Kuznetsk, Kazakhstan.

3.27 (100), 2.98 (100), 1.93 (100), 2.90 (90), 1.97 (80), 3.58 (50), 3.41 (50)

Chemistry:

	(1)	(2)	(3)
SiO ₂	42.05	37.72	42.45
TiO ₂	0.00	0.00	
Al ₂ O ₃	5.19	10.79	6.55
Fe ₂ O ₃	3.26	5.18	
FeO		1.08	
MnO	0.09	0.16	
MgO	9.52	4.99	10.35
CaO	34.68	34.0	36.02
Na ₂ O	1.06	1.01	
K ₂ O	0.14		
H ₂ O	4.45	0.00	4.63
P ₂ O ₅		0.03	
LOI		5.87	
Total	100.44	100.83	100.00

(1) Iron Hill, Colorado, USA. (2) Kuznetsk, Kazakhstan. (3) Ca₁₀Mg₄Al₂Si₁₁O₃₉•4H₂O.

Occurrence: Formed by hydrothermal alteration of a coarse-grained melilite rock (uncompahgrite) previously subjected to deuteric alteration (Iron Hill, Colorado, USA); in skarns at a contact zone with carbonates in a gabbro-urtite massif (Kuznetsk, Kazakhstan).

Association: Perovskite, phlogopite, magnetite, titaniferous garnet, melilite, diopside, vesuvianite, brugnatellite, hastingsite, tremolite, aegirine, cebollite (Iron Hill, Colorado, USA); melilite, pyroxene, wollastonite, vesuvianite, cebollite, calcite (Kuznetsk, Kazakhstan).

Distribution: In the Iron Hill carbonatite, Powderhorn-Cebolla district, Gunnison Co., Colorado, USA. From the Kiya-Shaltyrsk massif, Kuznetsk, Ala-Tau Range, Tien Shan, Kazakhstan. In the Kovdor massif, Kola Peninsula, Russia.

Name: For the San Juan Mountains, Colorado, USA, where the mineral was discovered.

Type Material: Harvard University, Cambridge, Massachusetts; National Museum of Natural History, Washington, D.C., USA, 105990.

References: (1) Larsen, E.S. and E.A. Goranson (1932) The deuteric and later alterations of the uncompahgrite of Iron Hill, Colorado. *Amer. Mineral.*, 17, 343–356. (2) Rodygina, V. (1971) First find of juanite and cebollite in the Kuznetsk Ala-Tau. *Geol. Geofiz.*, 12, 62–70. (3) (1972) *Chem. Abs.*, 76, 156622 (abs. ref. 2).