

Charoite**K(Ca, Na)₂Si₄O₁₀(OH, F)•H₂O**

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Crystal Data: Monoclinic. *Point Group:* n.d. Fibrous, massive.**Physical Properties:** *Cleavage:* Good in three directions. Hardness = n.d. VHN = 412 (50 g load). D(meas.) = 2.54 D(calc.) = [2.77] Yellow-orange cathodoluminescence.**Optical Properties:** Semitransparent. *Color:* Shades of deep lilac to violet; colorless in thin section.*Optical Class:* Biaxial (+). *Pleochroism:* X = rose; Z = colorless, in thick fragments.*Orientation:* X = b; Z ∧ c = 5°. α = 1.550(2) β = 1.553(2) γ = 1.559(2)

2V(meas.) = 28°–30°

Cell Data: *Space Group:* n.d. a = 10.7 b = 32.0 c = 7.25 β = 113° Z = 18**X-ray Powder Pattern:** Murun massif, Russia.

3.348 (100), 3.134 (85), 12.5 (70), 2.79 (50), 2.71 (35), 3.90 (30), 2.97 (30)

Chemistry:

	(1)	(2)
SiO ₂	56.88	58.5
Al ₂ O ₃		0.07
Fe ₂ O ₃	0.12	
FeO		0.01
MnO		0.07
CaO	20.95	20.5
SrO	0.90	0.5
BaO	2.52	2.9
Na ₂ O	3.77	1.8
K ₂ O	10.36	8.9
F	0.92	0.7
H ₂ O ⁺	4.40	4.7
–O = F ₂	0.39	[0.15]
Total	100.43	98.5

(1) Murun massif, Russia; corresponds to (K_{0.93}Ba_{0.07}Sr_{0.03})_{Σ=1.03}(Ca_{1.57}Na_{0.51})_{Σ=2.08}Si₄O₁₀[(OH)_{0.58}F_{0.28}]_{Σ=0.86}•0.72H₂O. (2) Do.; by electron microprobe, H₂O by TGA; corresponds to (K_{0.88}Ba_{0.09}Sr_{0.02})_{Σ=0.99}(Ca_{1.71}Na_{0.28})_{Σ=1.99}Si_{4.55}O₁₀[(OH)_{0.78}F_{0.18}]_{Σ=0.96}•0.82H₂O.

Occurrence: In potassic feldspar metasomatites at the contact of nepheline and aegirine syenites with limestones.**Association:** Canasite, tinaksite.**Distribution:** In the Murun massif, between the Chara and Olekma Rivers, southwest of Olekminsk, Yakutia, Russia.**Name:** For the Chara River, Russia, near which it was discovered.**Type Material:** University of Rome, Rome, Italy, 24352; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.

References: (1) Rogova, V.P., Y.G. Rogov, V.A. Drits, and N.N. Kutnetsova (1978) Charoite, a new mineral and a new jewelry stone. Zap. Vses. Mineral. Obshch., 107, 94–100 (in Russian). (2) (1978) Amer. Mineral., 63, 1282 (abs. ref. 1). (3) Kraeff, A., R.P.E. Poorter, and R.D. Schuiling (1980) Additional information on charoite. Neues Jahrb. Mineral., Monatsh., 498–500. (4) Nikishova, L.V., K.A. Lazebnik, and Y.D. Lazebnik (1985) Crystal chemical formula of charoite. Kristallkhim. Strukt. Tipomorfizm Mineral., 100–104. (5) (1988) Amer. Mineral., 73, 198 (abs. ref. 4).

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