

Touunkite**(Na, Ca, K)₈Si₆Al₆O₂₄(SO₄)₂Cl·H₂O**

©2001 Mineral Data Publishing, version 1.2

Crystal Data: Hexagonal. *Point Group:* 622. As elongated crystals, to 1 cm.**Physical Properties:** *Cleavage:* {10 $\bar{1}0$ }, fair. *Hardness* = 5–5.5 *D*(meas.) = 2.557(4)
D(calc.) = 2.60**Optical Properties:** Transparent. *Color:* Yellowish bottle-green, may be tinted blue by included lazurite; colorless in thin section. *Streak:* White. *Luster:* Vitreous.
Optical Class: Uniaxial (+). *Pleochroism:* *O* = colorless; *E* = yellow-green.
Absorption: *E* > *O*. $\omega = 1.528$ $\epsilon = 1.543$ **Cell Data:** *Space Group:* *P*6₂22. *a* = 12.843(3) *c* = 32.239(8) *Z* = 6**X-ray Powder Pattern:** Malo-Bystrinskoye or Tultuy deposit, Russia.
3.711 (100), 3.314 (80), 4.842 (40), 2.687 (25), 2.139 (25), 3.035 (20), 2.988 (16)**Chemistry:**

	(1)
SiO ₂	30.71
Al ₂ O ₃	25.43
CaO	10.82
Na ₂ O	10.25
K ₂ O	6.46
Cl	2.90
H ₂ O	0.77
SO ₃	13.28
–O = Cl ₂	0.66
Total	99.96

(1) Malo-Bystrinskoye or Tultuy deposit, Russia; by electron microprobe, H₂O by microcoulometry; corresponds to (Na_{3.93}Ca_{2.30}K_{1.64}) $\Sigma=7.87$ (Si_{6.07}Al_{5.93}) $\Sigma=12.00$ O₂₄(SO₄)_{1.97}Cl_{0.96}•1.02H₂O.**Mineral Group:** Cancrinite group.**Occurrence:** Replacing lazurite in diopside-lazurite rocks (Malo-Bystrinskoye deposit, Russia); in lazurite calciphyres (Tultuy deposit, Russia).**Association:** Diopside, lazurite (Malo-Bystrinskoye deposit, Russia); calcite, diopside, pyrite, apatite (Tultuy deposit, Russia).**Distribution:** In the Malo-Bystrinskoye and Tultuy lazurite deposits, near Slyudyanka, south of Lake Baikal, Siberia, Russia.**Name:** For the Tunka (Touunka) Valley, which is nearby the two deposits.**Type Material:** Mineralogical Museum, St. Petersburg University, St. Petersburg; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.**References:** (1) Ivanov, V.G., A.N. Sapozhnikov, L.F. Piskunova, and A.A. Kashaev (1992) Touunkite (Na, Ca, K)₈(Al₆Si₆O₂₄)(SO₄)₂Cl·H₂O – a new cancrinite-like mineral. *Zap. Vses. Mineral. Obshch.*, 121(2), 92–95 (in Russian). (2) (1994) *Amer. Mineral.*, 79, 187 (abs. ref. 1). (3) (1994) *Mineral. Abs.*, 45, 241 (abs. ref. 1).