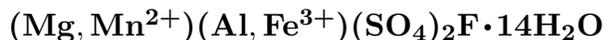


Svyazhinite



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Crystal Data: Triclinic. *Point Group:* $\bar{1}$ or 1. As tabular crystals, elongated along $\{0\bar{1}4\}$, with wedgelike terminations, to 0.5 mm, showing dominant forms $\{0\bar{1}4\}$, $\{4\bar{1}0\}$, $\{110\}$, $\{210\}$, six other forms; forms nodular aggregates, which may be hollow. *Twining:* On $\{0\bar{1}4\}$.

Physical Properties: *Cleavage:* $\{010\}$. Hardness = 2 $D(\text{meas.}) = 1.67$ $D(\text{calc.}) = 1.69$
Soluble in H_2O .

Optical Properties: Semitransparent. *Color:* Yellow; colorless in transmitted light.

Luster: Vitreous.

Optical Class: Biaxial (-). *Orientation:* $Y \wedge c \simeq 40^\circ$; $Z \wedge a \simeq 25^\circ$. $\alpha = 1.423(2)$ $\beta = 1.439(2)$
 $\gamma = 1.444(2)$ $2V(\text{meas.}) = \text{Small}$. $2V(\text{calc.}) = 57^\circ$

Cell Data: *Space Group:* $P\bar{1}$ or $P1$. $a = 6.217$ $b = 13.306$ $c = 6.255$ $\alpha = 90.09^\circ$
 $\beta = 93.50^\circ$ $\gamma = 82.05^\circ$ $Z = 1$

X-ray Powder Pattern: Ilmen Mountains, Russia.

4.91 (10), 5.68 (7), 4.40 (5), 4.15 (5), 2.824 (5), 2.84 (4.5), 3.39 (4)

Chemistry:

	(1)
SO_3	29.37
Al_2O_3	8.65
Fe_2O_3	1.90
MnO	3.07
MgO	4.18
CaO	0.38
F	3.42
Cl	0.17
H_2O	49.40
$-\text{O} = (\text{F, Cl})_2$	1.48
Total	99.06

(1) Ilmen Mountains, Russia; by laser microprobe, corresponds to $(\text{Mg}_{0.57}\text{Mn}_{0.24}\text{Ca}_{0.04})_{\Sigma=0.85}$
 $(\text{Al}_{0.93}\text{Fe}_{0.13})_{\Sigma=1.06}(\text{SO}_4)_{2.00}(\text{F}_{0.98}\text{Cl}_{0.03})_{\Sigma=1.01} \cdot 14.96\text{H}_2\text{O}$.

Occurrence: A weathering product in fractures cutting pyrite–fluorite-bearing pyroxene–amphibole fenites.

Association: Gypsum, pickeringite, melanterite, copiapite, epsomite, jarosite, pyrite, fluorite.

Distribution: From near Miass, Ilmen Mountains, Southern Ural Mountains, Russia.

Name: Honors Nikolai Vasil'evich Svyazhin (1927–1967), Russian mineralogist, Ural Mining Institute, Sverdlovsk, Russia.

Type Material: Sverdlovsk Mining Institute, Sverdlovsk; Il'menskii Preserve Museum, Miass, iz4524; Mining Institute, St. Petersburg, 1509/1; Vernadsky Geological Museum, Moscow, 53493; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 82772.

References: (1) Chesnokov, B.V., L.F. Bazhenova, I.E. Kamentsev, V.O. Polyakov, and A.F. Bushmakina (1984) Svyazhinite, $(\text{Mg, Mn, Ca})(\text{Al, Fe}^{3+})(\text{SO}_4)_2\text{F} \cdot 14\text{H}_2\text{O}$ – a new mineral. *Zap. Vses. Mineral. Obshch.*, 113, 347–351 (in Russian). (2) (1985) *Amer. Mineral.*, 70, 877 (abs. ref. 1). (3) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 199.