

Sergeevite**Ca₂Mg₁₁(CO₃)₉(HCO₃)₄(OH)₄•6H₂O(?)**

©2001-2005 Mineral Data Publishing, version 1

Crystal Data: Hexagonal (?). *Point Group:* n.d. Rhombohedral crystals, to 0.5 μm, in globular concretions and irregular veinlets.

Physical Properties: *Fracture:* Uneven to conchoidal. Hardness = ~3.5 D(meas.) = 2.55–2.87 D(calc.) = 2.64

Optical Properties: Semitransparent. *Color:* White. *Luster:* Dull.
Optical Class: Uniaxial, birefringence 0.010–0.012. *n* = 1.581 *ω* = n.d. *ε* = n.d.

Cell Data: *Space Group:* n.d. *a* = 19.01 *c* = 7.82 *Z* = 3

X-ray Powder Pattern: Malyi Mukulan deposit, Russia.
2.821 (100), 7.14 (30), 3.58 (30), 2.87 (30), 1.965 (27), 1.755 (20), 3.37 (15)

Chemistry:	(1)	(2)
SiO ₂	0.73	
CO ₂	43.17	43.75
Al ₂ O ₃	0.21	
FeO	1.08	
CuO	0.64	
MgO	33.20	33.90
CaO	7.80	8.58
H ₂ O	12.88	13.77
Total	99.71	100.00

(1) Malyi Mukulan deposit, Russia; (CO₃)²⁻, (HCO₃)¹⁻, (OH)¹⁻ confirmed by IR, chrysocolla impurity estimated about 1.3%. (2) Ca₂Mg₁₁(CO₃)₉(HCO₃)₄(OH)₄•6H₂O.

Occurrence: A weathering product of pyroxene–garnet skarn.

Association: Huntite, chrysocolla, chalcantite, brochantite, malachite, gypsum, epsomite, “limonite”.

Distribution: From the Malyi Mukulan tin deposit, Tyrnyauz district, Baksan River Valley, northern Caucasus Mountains, Russia.

Name: To honor Professor Yevgenii Mikhailovich Sergeev (1924–1997), geological engineer, Moscow University, Moscow, Russia.

Type Material: Mining Institute, St. Petersburg, 1262/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 80181, 82947.

References: (1) Yakhontova, L.K., I.I. Ilyusnina, T.I. Stolyarova, Y.K. Yegorov-Tismenko, and L.V. Kuleshevich (1980) Sergeevit – a new hydrous carbonate of magnesium and calcium. *Zap. Vses. Mineral. Obshch.*, 109, 217–223 (in Russian). (2) (1981) *Amer. Mineral.*, 66, 1100 (abs. ref. 1). (3) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 182.