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# VANADIO-PARGASITE $NaCa_2Mg_4V(Si_6Al_2)O_{22}(OH)_2$ — NEW MINERAL OF THE AMPHIBOLE GROUPE

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This new mineral was discovered in the Pereval marble quarry in Cr-V-bearing marbles, in the Sludyanka district (South Baikal region, Russia). It was named vanadio-pargasite as vanadium-bearing analogue of pargasite, according to classification of the amphibole supergroup and CNMNC recommendations. Associated minerals are black Cr-V-spinel (magnesiocoulsonite-magnesiochromite) and red Cr-V-bearing spinel, calcite, dolomite, Cr-V-bearing diopside and chlorite, phlogopite and forsterite. Vanadio-pargasite forms subhedral long- and short-prismatic crystals sized 0.10—0.8 × 0.05—0.10 mm, with faces (110), (010), and perfect cleavage by (110). Color is (macroscopic) bright-green to emerald-green with vitreous luster, in thin sections and powder — pale-green, without pleochroism. Biaxial, positive, $2V = 86° \pm 2°$, $Ng = 1.659(2)$, $Nm = 1.651(2)$, $Np = 1.643(2)$. Hardness (Mohs) ~ 6, ($VHN_{50;100}$) = mean 795; range 752—824 kg/mm². Density $d_{meas} = 3.05(5)$ g/cm³, $d_{calc} = 3.112$ g/cm³. On thermogram in the interval 654-1081 °C $H_2O$ is given off with endothermic effect. In the range 900—1183 °C the main endothermic effect is water release, possibly also F and melting of the mineral (1020 °C). IRS absorption bands ($cm^{-1}$) — 3445, 1633, 980, 469. Monoclinic, sp. gr. *2C/m*, unit cell parameters: $a = 9.914(3)$, $b = 18.003(2)$, $c = 5.300(2)$ Å, $\beta = 105.69(3)°$, $V = 910.7(5)$ Å³, $Z = 2$. Strongest lines of diffraction pattern [*d*, Å (*I*) (*hkl*)]: 8.98 (15) (020); 8.43 (40) (110); 3.27 (30) (240); 3.14 (100) (310); 2.82 (35) (330); 2.70 (18) (151), 2.34 (15) (42-1); 1.898 (15) (510); 1.445 (25) (4.10-1). Mean chemical composition (microprobe, 528 an.)

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wt % — $SiO_2$ 42.75, $TiO_2$ 0.14, $A1_2O_3$ 12.75, $Cr_2O_3$ 0.44, $V_2O_3$ 5.92, MgO 19.15, FeO 0.03, MnO 0.01, CaO 12.52, $Na_2O$ 3.45, $K_2O$ 0.41, F (wet chem.) 0.74, $H_2O$ (calc.) 1.75, total 99.91. Simplified formula is: $K_{0.1}Na_{0.9}Ca_{2.0}Mg_{4.0}V_{0.7}Al_{0.3}(Si_{6.1}Al_{1.9})_{8.0}O_{22}(OH_{1.7}F_{0.3})_{2.0}$. Holotype material is deposited in the Fersman Mineralogical Museum of the Russian Academy of Sciences, Moscow, Russia (catalogue numbers 5035/1, 5035/2 and 5035/3).

*Key words*: new mineral, amphibole, vahadio-pargasite, South Baikal region, Russia.