

## **Gaspéite and Associated Ni-Rich Minerals from Veins in Altered Ultrabasic Rocks from Duboštica, Bosnia and Herzegovina**

<sup>1</sup>BERMANEC, V., <sup>2</sup>SIJARIĆ G., <sup>3</sup>KNIEWALD, G. <sup>1</sup>Mineraloško-petrografski zavod, Geološki odsjek, PMF, Horvatovac bb, HR-10000 Zagreb, Croatia <sup>2</sup>Prirodno-matematički fakultet, 71000 Sarajevo, Bosnia and Herzegovina (BiH) <sup>3</sup>Department of Marine and Environmental Research, Rudjer Bošković Institute, POB 1016, HR-10000 Zagreb, Croatia

The following suite of nickel minerals was found in veins of hydrothermally altered ultramafic rocks: gaspéite, retgersite and nickelhexahydrite. Unit cell dimensions of the minerals are: gaspéite  $a$  4.648(3),  $c$  14.95(2) Å (rhombohedral  $a$  5.660 Å,  $\alpha$  48.49°)  $V$  279.7 Å<sup>3</sup>; retgersite  $a$  6.787(5),  $c$  18.27(2) Å,  $V$  842(1) Å<sup>3</sup>; nickelhexahydrite  $a$  9.925(7),  $b$  7.232(7),  $c$  24.16(2),  $\beta$  98.55(7),  $V$  1715(2) Å<sup>3</sup>. The means of four sets of ICP AES data for gaspéite from Duboštica, BiH are: NiO 49.63, MgO 0.17, CaO 0.45, FeO 6.36, CO<sub>2</sub> 43.25, Total 99.87 wt.%. This gives the empirical formula (based on 3 oxygens) (Ni<sub>0.73</sub>Fe<sub>0.10</sub>Ca<sub>0.01</sub>)<sub>Σ0.84</sub>C<sub>1.08</sub>O<sub>3.00</sub>.

In the described association of nickel minerals from Duboštica, the attainment of a series of kinetically controlled transitory equilibria results in the paragenetic formation of metastable mineral phases.