

FIRST OCCURENCE OF PLATINUM-GROUP MINERALS IN SALZBURG: THE
HAIDBACHGRABEN Cu-Ni-Co DEPOSIT, PINZGAU

Schwabl, S.¹, Melcher, F.¹ & Grill, H.A.²

¹ Montanuniversität Leoben, Peter Tunner-Straße 5, 8700 Leoben, Austria

² Schurfgemeinschaft Zinkwand, Birkenweg 2, 8820 Neumarkt in der Steiermark, Austria
sonja.schwabl@stud.unileoben.ac.at

WEBER et al. (1997) report on concentrations of platinum-group elements (PGE) in Cu-Ni mineralization south of Mittersill. At the location “Gaiswände” in the Haidbach valley (“Haidbachgraben”), exploration has been conducted for Cu and Ni between 1911 and 1939. The stratiform deposit is hosted by greenschists of the pre-Variscan Habach Group which is part of the Subpenninic Venediger nappe system.

Polished sections of mineralized schists reveal pyrrhotite, pyrite and chalcopyrite as the major sulphides, with less abundant pentlandite that is commonly replaced by violarite. As accessory phases, the following minerals have been observed: Ni-Fe-Co sulfarsenides (gersdorffite, arsenopyrite), sphalerite (6-7% Fe, 1% Cd), hessite Ag₂Te, Pd-melonite (Ni,Pd)(Te,Bi)₂, merenskyite Pd(Te,Bi)₂, sperrylite PtAs₂, testibiopalladinite PdSbTe and gold (Fig. 1). Zinc-bearing chromian spinel occurs as inclusions in base metal sulphides. Grain sizes of the precious metal-bearing phases are up to 20 μm. Palladium minerals are invariably hosted by pyrrhotite and chalcopyrite, and are intergrown with sphalerite and Ni-Fe-Co sulfarsenides, whereas sperrylite is commonly present as single euhedral to subhedral grains along sulphide grain boundaries and in the silicate matrix.

Mineralized samples were analysed by XRF and ICPMS methods and yielded the following concentrations: 13-18% Fe, 0.2-4% Cu, 0.5-1.5% Ni, 300-3000 ppm Co, 100-400 ppm Zn, 50-120 ppm Se, up to 80 ppm Mo, 4-30 ppm Ag, up to 1.1 ppm Pd, up to 8.5 ppm Pt, and up to 0.6 ppm Au. Pt shows a strong nugget effect in different aliquots of the same sample.

Despite a number of sulphide occurrences associated with metabasic rocks in the Tauern Window, the Ni-Cu-Co mineralization at Haidbachgraben is unique in the presence of discrete PGM. The goals of an ongoing study are to describe the geological and structural setting of the mineralization, its trace element chemistry and mineralogy, and to model its genesis.



Figure 1. (a) Sperrylite (bright) next to chalcopyrite and amphibole; (b) Pd-melonite between pyrrhotite (light grey) and pyrite (dark grey)

WEBER et al. (1997): Archiv für Lagerstättenforschung Geol. B.-A. 19, 1-607.