

Study on Mineralogy of the Stibnite-Antimonselite Series

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Minerals of the stibnite-antimonselite series, in close association with tiemannite, clausthalite, kullerudite, Se-bearing stibioluzonite, native gold, quartz and barite, are discovered in stratabound gold deposits at La'erma and Qiongmo in the Cambrian System, western Qinling, China. Based on S/(S+Se) ratios of microprobe analyses this binary system of stibnite-antimonselite is quarterly divided into four series: stibnite, Se-stibnite, S-antimonselite and antimonselite. Micro-hardness of the stibnite series (Sb: 58.47~72.99, S: 11.86~28.76, Se: 0.00~29.12 in wt%) and the antimonselite series (Sb: 48.94~59.13, Se: 29.20~46.86, S: 1.99~11.43 in wt%) is 101.26 and 103 kg/mm², respectively. Representative reflectivities of the four series are (470nm) $R_g'=42.62\sim47.62\%$, $R_p'=30.83\sim40.55\%$; (550nm) $R_g'=41.84\sim46.75\%$, $R_p'=31.48\sim38.85\%$; (590nm) $R_g'=42.25\sim46.63\%$, $R_p'=30.73\sim39.46\%$; (650nm) $R_g'=43.30\sim46.48\%$, $R_p'=30.01\sim41.56\%$. Cell parameters obtained from two st