

Recent investigation on Ag-bearing minerals at the River Reef Zone, the Poboya Prospect, Central Sulawesi, Indonesia

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Epithermal deposits are generally known to have Au-Ag [1] thus in this study the importance of Ag-bearing minerals are focused to understand the mineralization condition in addition to electrum. Ag-bearing minerals were analyzed through ore microscopy and scanning electron microscopy with energy dispersive X-ray.

As the results, several principal Ag-bearing minerals have been recognized, such as electrum, naumannite-aguilarite, selenopolybasite and freibergite. Ag, either as a main or supplementary element, is also contained in other minerals: aguilarite-acanthite, argyrodite, pyrargyrite, chalcopyrite, sphalerite and pyrite in various proportion (Table 1). Besides being identified as free grains, these minerals are often coexisted with other minerals in forms of simple-spotty mutual grains and inclusion-host minerals. Further study on characteristics of the ore-forming fluid will give us an insight of physicochemical environment of the mineralization.

Mineral	Ag Content (at.%)
Electrum	52.75 - 85.56
Naumannite-aguilarite	64.91-70.54
Aguilarite-acanthite	64.02
Argyrodite	55.68
Selenopolybasite	48.69 - 55.23
Pyrargyrite	40.96 - 46.09
Freibergite	14.40 - 20.82
Chalcopyrite	4.03 - 5.40
Sphalerite	1.02
Pyrite	1.85

Table 1: Ag content in each Ag-bearing mineral.

[1] Hedenquist *et al.* (1996), *Resource Geol. Spec. Publ.* **1**.