

## Oxidické minerály manganu: vymezení, krystalové struktury, identifikace a výskyt na území České republiky

### Oxide manganese minerals: definition, crystal structures, identification, and occurrence in the territory of the Czech Republic

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#### Abstract

Oxide manganese minerals present the most important source of manganese from both inland and ocean floor deposits. They also play an important role in some biogenic and environmental activities. Our contribution tries to define this heterogeneous mineral group as 1. minerals from the oxides and hydroxides class composed solely of Mn, O, and H, or 2. minerals from the oxides and hydroxides class composed of Mn, O, H, and other cations with manganese content greater than 20 wt. %. At present time, 11 minerals meet the first and ca 36 meet the second criteria. Brief overview of their crystal structures is given. Group of problematic minerals is also listed. We also focused on the advances in analytical methods, which mostly did not allow to distinguish correctly between manganese oxide minerals before 1960 in the territory of the Czech Republic. Critical review of both published and unpublished sources shows that manganese oxide minerals are abundant at the Czech territory, but vast majority was described under obsolete group names like *manganomelan*, *psilomelan*, and *wad*. Numbers of reliably described occurrences with published analytical data are following: asbolane - 2, birnessite - 2, cesàrolite - 1, hollandite - 11, cryptomelane - 13, lithiophorite - 5, manganite - 3, pyrophanite - 2, pyrolusite - 4, ramsdellite - 3, and todorokite - 7.

**Key words:** manganese, oxides, mineralogy, Czech Republic

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