Geochemistry of the Bolkardağı Bauxite Province, Karaman-Turkey

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Abstract

Bolkardağı bauxite province is located in the Tauride Belt, southern Turkey (Fig.1). This province hosts a large number of bauxite deposits (e.g. Karataş, Bolkardede T., Arpaçukuru, Kızıldağ, Öşün Yaylası, Göztaşı, Kavaközü, Baharpınarı, Kemikli T.,) which occurred within the Bolkardağı Unit (BU), Namrun Tectonic Unit (NTU) and Aladağ Unit (AU), and these tectono-stratigraphic units are imbricated [1]. Both the lateritic and karstic-type bauxite deposits developed in the province. While the phyllites-schists are the footwall of the lateritic-type deposits, the recrystallised limestones are the footwall for the karstic-type. The Middle Jurassic recrystallised limestones overlies the bauxite deposits in the province. The deposits consist mainly of diasporite and hematite with minor boehmite, kaolinite and anatas minerals.

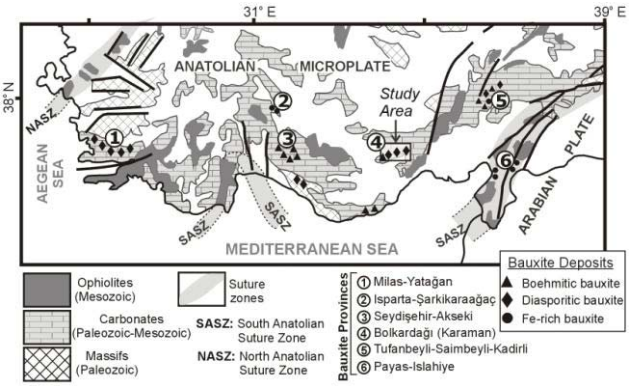

Figure 1: The bauxite provinces of the Turkey

The deposits contains 40.13 to 76.2 wt. % Al_2O_3 (aver. 53.3 %), 0.7 to 29.8 wt. % Fe_2O_3 (aver. 18.8 %), 0.6 to 24.9 wt. % SiO_2 (aver. 12 %), 11 % average LOI, 1.92 to 4.1 wt. %TiO_2 (aver. 2.7 %).

Al, Fe and Ti are mainly enriched elements during the bauxitization processes. The Al_2O_3 content increases from 28.6 % in average parent rock to 53.3% in average bauxite. Similar increases occur from 1.4 % to 2.7 % for TiO_2 content, from 7.6 % to 18.8 % for Fe content. The alkali (Na, K, Rb), alkali earth (Mg, Ca, Sr, Ba) elements, and silica content of the bauxites are lower than the parent rocks and saprolite, indicating extreme leaching during the bauxitization. The Ti, Zr, Hf, Nb, and Ta are the strongly immobile elements during the bauxitization processes, and the Fe, Ti, Sn, V, Pb, Ni and Cr are the gained elements in bauxitic zones in the Bolkardağı province.

From the stratigraphic evidence and geochemical data it is concluded that the Lower and Upper Triassic fillates-schists could have been the precursor rock for the bauxite deposits in Bolkardağı province. The bauxitization processes occurred pre-Middle Jurassic time, and the deposits included boehmite. The boehmitic bauxite was transformed to diasporitic bauxite due to post Cretaceous overtrusting and imbrication.

[1] Hanilci et.al., (2006) *59th Geological Congress of Turkey, Proceedings Book*. 157-159.

Interaction of subsurface pesticides with some metal-organic frameworks

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Introduction

Particular chemicals like pesticides which use, in agriculture, became inescapable are engendering an environmental pollution and more particularly that of the waters as well of surfaces as ground-water sheets.

It is urgent, for preservation of public health, to reduce at most our exposure to these substances and to operate everything to reduce and control these pollutants.

So, the presence of pesticides in drinkable waters is severely regulated and the producing companies of water, to conform to the established standards, are obliged to include in their networks of water treatment, processes to eliminate them.

The adsorption on the synthetized metal organic complexes may be a technique to disinfect waters polluted by pesticides and other chemicals.

In this context, some coordination compouds of manganese, copper, zinc and cobalt were tested in the adsorption of mitrobuzin present in contaminated water. The retained organis molecules are natural products (flavonoids and purines)

Results and Conclusion

The preliminary results seems encouraging and we report them here. They are compared to those obtained with a classic adsorbing agent, namely powdered activated carbon F400