

Effects of Regional Metamorphism on Karst Bauxite Deposits in Northwestern Iran

Ali Abedini^{1*} and Maryam Khosravi²

¹Department of Geology, Faculty of Sciences, Urmia University, Iran

²Department of Mining Engineering, Isfahan University of Technology, Iran

ISSN: 2637-8035



***Corresponding author:** Ali Abedini, Department of Geology, Faculty of Sciences, Urmia University, Urmia, Iran

Submission:  August 05, 2022

Published:  August 09, 2022

Volume 4 - Issue 4

How to cite this article: Ali Abedini and Maryam Khosravi. Effects of Regional Metamorphism on Karst Bauxite Deposits in Northwestern Iran. *Progress Petrochem Sci.* 4(4). PPS. 000591. 2022. DOI: [10.31031/PPS.2022.04.000591](https://doi.org/10.31031/PPS.2022.04.000591)

Copyright@ Ali Abedini, This article is distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use and redistribution provided that the original author and source are credited.

Opinion

Karst bauxite deposits in northwestern Iran are part of the Irano-Himalayan bauxite belt [1,2]. These deposits are similar to the Mediterranean-type karst bauxite deposits [3-5]. The Saqqez region in northwestern Iran is one of the typical and interesting regions in the world where bauxite deposits have undergone regional metamorphism. The Permian bauxite deposits developed on limestone and dolomitic limestone bedrocks of the Ruteh Formation have been affected by metamorphism processes. The bauxite ores show various colors, including green, dark green, cream, greenish cream, grey, red, brownish red, white, and yellow. Based on microscopic studies and XPRD analyses, the residual ores consist of a mineral assemblage of diaspore, corundum, hematite, magnetite, goethite, rutile, paragonite, margarite, amesite, berthierine, nacrite, chlorite, illite, montmorillonite, pyrophyllite, chloritoid, muscovite, quartz, pyrite, anhydrite, ankerite, ilmenite, calcite, and dolomite. In the Saqqez bauxite ores, paragonite, margarite, chloritoid, and corundum are the products of regional metamorphism processes. The second latter minerals occur at conditions close to the upper limit of the greenschist facies. It can be deduced that a mineral assemblage of chloritoid-diaspore-kaolinite-magnetite-hematite in the northwestern Iran bauxite ores was formed by the following reactions:



References

1. Abedini A, Calagari AA (2012) The mineralogy and geochemistry of Permian lateritic ores in east of Shahindezh, West-Azarbaidjan province. *Iranian Journal of Crystallography and Mineralogy* 20(3): 59-72.
2. Abedini A, Mongelli G, Khosravi M (2021) Geochemical constraints on the middle Triassic Kani Zarrineh karst bauxite deposit, Irano-Himalayan belt, NW Iran: implications for elemental fractionation and parental affinity. *Ore Geology Reviews* 133: 104099.
3. Abedini A, Khosravi M, Dill HG (2020) Rare earth element geochemical characteristics of the late Permian Badamlu karst bauxite deposit, NW Iran. *Journal of African Earth Sciences* 172: 103974.
4. Abedini A, Habibi Mehr M, Khosravi M, Calagari AA (2019) Geochemical characteristics of the karst-type bauxites: an example from the Kanirash deposit, NW Iran. *Arabian Journal of Geosciences* 12(15): 1-16.
5. Abedini A, Rezaei Azizi M, Calagari AA (2019) REE tetrad effect as a powerful indicator of formation conditions of karst bauxites: A case study of the Shahindezh deposit, NW Iran. *Acta Geologica Sinica(English Edition)* 93(4): 912-927.

For possible submissions Click below:

[Submit Article](#)