IRANIAN SOCIETY of CRYSTALLOGRAPHY and MINERALOGY

Vol. 19, No. 4, Winter 1390/2012

IRANIAN JOURNAL of CRYSTALLOGRAPHY and MINERALOGY

Mineralogy, geochemistry and application of clays of Razak and Mishan Formations

B. Etemadi*, Z. Zakerabbasi

Department of Earth Sciences, Faculty of Sciences, ShirazUniversity, Shiraz, Iran

(Received: 22/8/2010, in revised form: 14/1/2011)

Abstract: Razak and Mishan Formations (Early to Middle Mioceneage) in Polkavar and Zanjiran areas located in south and southwest of Fars Province in the Zagros foldbelt. Major minerals are illite/muscovite, chlorite, calcite, quartz and minor minerals are albite, and palygorskite. Analyses of whole rock chemistry show high amounts of CaO, MgO and low SiO_2, Al_2O_3, Fe_2O_3, K_2O, Na_2O contents compared to NASC (North American Shale Composits), PAAS (Post Arcean Austeralian Shale), and UC (Upper Crust). The pattern of chondrite/NASC-normalized rare earth elements of samples indicates enrichments of LREE related to HREE with no anomaly of Eu. Samples have high La/Sc, Ba/Sc, Ba/Co ratios and low Th/Sc, Th/Cr, La/Cr ratios, which gives indications of felsic origin with some contribution of basic rocks. The TiO_2/Al_2O_3 plot could be further evidences of granite/rhyolite + basalt original rocks. The low intense of weathering of source rocks was evaluated by low CIA, low CIW and high contents of Sr and Ca. Low CEC of these samples show illite, chlorite, and palygorskite and very low amount or absences of vermiculite and montmorilonite. Atterberg limitations are low to intermediate between 10-16. Final conclusion of these investigation indicate the potential usage of these sediments for brick, tile ceramic and earthenwares.

Keywords: *clay minerals; Razak & Mishan Formations; Atterberg limitations.*

متن فارسی اصل مقاله از صفحه ۶۸۷ تا ۶۹۸ در این شماره به چاپ رسیده است.

*Corresponding author, Tel: 09173162772, Fax: (0711) 2284572, Email: etemadi_bi@yahoo.com

[Downloaded from ijcm.ir on 2024-10-12]