Mineral chemistry of volcanic rocks from the West of Arousan-e-Kaboudan (NE of Isfahan)

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Abstract: Arousan -e- Kaboudan area, located about 115 km northeast of Nain (south of Choupanan), is part of Central Iran (Yazad block). The Eocene volcanic rocks of the area are composed of lavas and pyroclastic rocks. The lavas can be divided into acidic (rhyodacite) and relatively basic-basic (trachyandesite, mugearite and hawaiite) rocks. The textures of these rocks are trachytic, hyaloporphyrritic and poikilitic. Plagioclase (albite to andesine), alkali feldspars (sanidine-Or: 65-86%), clinopyroxene (diopside to augite), mica (biotite to phlogopite), amphibole (magnesian hastingsitic hornblende to magnesian hastingsite) and chlorite (brunsvigite) from therochxs were analyzed by electron microprobe. Geochemical evidence and mineralogical characteristics indicate that the acidic rocks are calc-alkaline and basic rocks have shoshonitic nature. The tectonic environment, in which these rocks were formed, is probably a volcanic arc related to subduction (in the continental margin of central Iranian micro – continental).

Keywords: Volcanic rocks, Mineralogy, Mineral chemistry, Arousan-e- Kaboudan