

Investigation of the plagioclases texture variation and mineral chemistry of the Eocene andesites of W- Torbat-e Heydarieh (NE Iran)

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Magma texture analysis provides valuable information about the relationship and effect of magmatic processes from the magmatic chamber to the magma eruption. The compositional range of the plagioclases of the Eocene andesitic rocks of the west of the Torbat-e-Heydarieyh is from labradorite and bytownite type. Textures and characteristic of these plagioclases reflect the events that took place during crystallizing of these rocks and are as follows: large/small sieve texture, compositional zoning, degraded surfaces and broken crystals. Some of these characteristics are due to changes in crystal-liquid interface and changes in temperature, pressure, water and melt composition. Mixing - magmatic contamination and pressure decompression are two factors in the magmatic reservoir that are responsible for the formation of sieve texture in these plagioclase. Compositional zoning in these minerals is caused by changes in the composition of magma during ascent and crystal growth in open conditions or pressure decompression, magmatic mixing and changes in water vapor pressure.