

GEOCHEMISTRY OF FAMATINIAN HIGHLY PERALUMINOUS GRANITES FROM NORTHWESTERN ARGENTINA.

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During the Famatinian Cycle, Lower Cambrian - Lower Devonian, the magmatic intrusivity in northwestern Argentina was very important. But not all granites have the same textural and mineralogical features. It is possible to characterize the different granitoids as constituted of quartz, microperthitic microcline, plagioclase, apatite, zircon, tourmaline, and rare magnetite and pyrite. The two-mica granites contain cordierite, andalusite and sillimanite, although cordierite and andalusite are more abundant in the leucogranitic equigranular facies. They have coarsely porphyritic to subhedral granular texture. Modal classification indicates that all these granitoids belong to the monzogranite -granodiorite-tonalite family and that metasedimentary enclaves are typical of all of them. Likewise, all these groups have A/CNK 1 ratios, and their distinctive mineral associations indicate different chemical compositions and conditions of crystalization. The batholiths are emplaced at low pressure (P2-4 kbar), under high H₂O activity, and exhibit sharp, discordant contacts with low-pressure biotite-muscovite-andalusite-sillimanite-cordierite schists. The major-element data indicate a peraluminous calc-alkalic trend. The chondrite-normalized REE patterns and multi-element spidergrams point to a probable origin through crustal (metasediment?) anatexis. Both major and trace elements point to a collisional tectonic environment of inner Continental Magmatic Arc or Colisional through the interaction of crust material with deep melts, or by crustal anatexis.