THE CHEMISTRY AND PETROGENETIC SIGNIFICANCE OF THE AMPHIBOLES FROM A-TYPE GRANITOIDS, DOBROGEA, ROMANIA

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A-type granitoidic rocks crop out in the eastern part of Romania, into Alpine Macin Unit. Petrotypes forming the A-type granitoidic association are: 1) Plutonites in the following succession (from E to W): - sodic amphibole and/or pyroxene bearing subsolvus granites (SAPSG);- hypersolvus quartz syenites (HQS);- calcic amphibole bearing subsolvus granites (CASG);- sodic pyroxene and/or amphibole bearing hypersolvus granites (SPAHG)2) Hypabisic or subvolcanic rhyolites.Chemical composition of amphiboles is directly correlated with the chemistry of the A-type granitoidic rocks containing them. The microprobe investigation reveals that the amphibole crystals are chemical homogeneous, excepting the frequent magnetite and ilmenite inclusions. Sodic amphiboles from the North Dobrogea peralkaline rocks belong to riebeckite - arfverdsonite series and the calcic ones belong to the actinolite series. In the hypothesis that the two chemical different granitoides (hypersolvus and subsolvus) were cogenetic, in a reducing environment, the following ion exchange led to the A site occupation by the alkalis: - CaAl - NaSi and- Fe3+ - NaA Fe2+The initial water content of the granitic magma determines its mobility and the crystallization processes. The sodic amphibole crystallizes in the late stages, when the magma water content increases due to the crystallization of anhydrous minerals. The characteristic temperature of the solidus line in F-rich magmas is below 600 °C, while in magmas with a low F content it is 700 °C. The rare fluorine crystals identified do not justify a low temperature for the beginning of the crystallization processes. Therefore, the low content of F suggests a temperature over 700 °C for the solidus line.