



Crystal size distribution in metamorphic rocks: an example for the relationship between nucleation and growth rates with overstepping

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Abstract: Crystal size distribution (CSD) in metamorphic rocks provide fundamental information about crystal nucleation and growth rate, growth time and the degree of overstepping. CSD data for garnet, staurolite, kyanite and andalusite crystals from the aureole demonstrate that the earliest formed of these minerals, garnet, has the highest population density and the shortest growth time. The last formed mineral, andalusite, has the lowest population density and longest growth time. Kyanite and staurolite have the similar population density and growth times intermediate between those of garnet and andalusite. These data demonstrate the effect of the degree of overstepping on the nucleation and growth rates of minerals during metamorphism.

Keywords: *Crystal size distribution, Overstepping, Nucleation.*