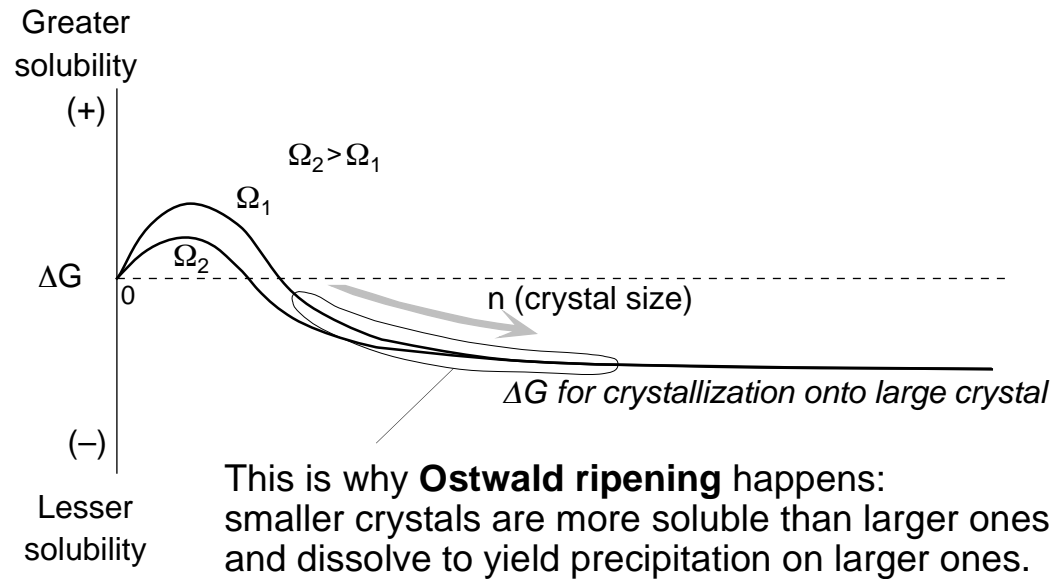


A thermodynamic perspective on Ostwald ripening

This document attempts to explain Ostwald ripening, a coarsening of crystals from very fine to coarser through time.

At right is a diagram for one mineral in solutions with differing saturation states:



One experimental example of Ostwald ripening is that by Barronet (*Estudios Geologicos*, v. 38, 1982), wherein phlogopite coarsened during thirty days at 600°C.

Possible natural examples include:

- Aggrading neomorphism of micrite (micron-size calcite) to microspar (coarser calcite).
- Recrystallization of silica from finer to coarser, as in chert.
- Recrystallization/coarsening of kaolinite and other soil minerals.

Through time, the number of crystals decreases as small ones are eliminated, and the critical radius (the size of a crystal that neither grows nor shrinks) increases.

