

Influence of Quenching Medium, Specimen Size, and Geometry: The cooling rate depends on the cooling medium. b) rapid cooling across the solvus line to exceed the solubility limit. Fast cooling brings the danger of warping and formation of cracks, since it is usually accompanied by large thermal gradients. Precipitation Hardening: Hardening can be enhanced by extremely small precipitates that hinder dislocation motion. Precipitation hardening is achieved by: a) solution heat treatment where all the solute atoms are dissolved to form a single-phase solution. c) precipitation heat treatment where the supersaturated solution is heated to an intermediate temperature to induce precipitation and kept there for some time (aging). The precipitates form when the solubility limit is exceeded. This is called overaging.