

Effect of Temperature Profile on Crystallization of Syrup

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The crystallization process is used to purify the syrup and utilizes the difference in solubility with temperature. by controlling the supersaturation, crystals of high purity can be obtained. In general, the supersaturation is affected by impurities, temperature, concentration, stirring speed and seed. It is possible to control the crystal growth and crystal nucleation by varying the supersaturation in accordance with the temperature control in the process.

In this study, cooling crystallization proceeded and the supersaturation was controlled by varying the cooling rate according to temperature. In addition, seeds were injected to induce crystal growth and nucleation, and the effect of the seed surface area was confirmed. In the experiment, the slower the initial cooling rate, the lower supersaturation was maintained, and crystals were grown up to 220 μm . The shape of the crystal was needle-like, and the recovery rate was 75wt% or more.