

Production of hybrid crystal of salt / the amino acid from amino acid
containing salt aqueous solution

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A method to obtain hybrid crystal of salt / amino acid from amino acid containing salt aqueous solution was proposed. Further, the mechanism was discussed. We think that it is possible to create a hybrid crystal of salt / amino acid because the many organic and inorganic compound type matrices which were organized by the economical objection from the molecule area exist in the nature. In this research, it establishes the creation theory of hybrid crystal of amino acid / salt. By this, the development of new salt materials becomes possible, i.e. the new product becomes possible and its result becomes a very useful. An experiment policy for the creation of hybrid crystal of salt / amino acid was proposed. The role as the matrix of the sodium chloride could be described. The growth-starting supercooling ΔT_G , defined as a supercooling at which a crystal starts to grow on cooling, depends on how much impurity species is adsorbed on the crystal surface. The value of ΔT_G can be used conveniently to estimate the amount of adsorbed impurity species. When adsorption was made onto the non-growing face at a low supercooling, the measured values of ΔT_G were successfully explained with a mathematical model considering the Langmuir equilibrium adsorption. On the contrary, smaller values of ΔT_G were obtained when adsorption was made on the growing face at a high supercooling. These smaller values obtained for the adsorption were concluded to be due to an insufficient amount of the adsorbed impurity and the adsorption was shown to proceed more slowly onto the growing face compared to the non-growing face. This finding of slow adsorption on growing surface will make a step in the progress of the science of the impurity effect on crystal growth.