

Basic studies and trials of teaching materials with the salt manufacture by eathernware and the salt crystal growth

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Summary

We have studied the teaching materials for relation and environmental influence between human and nature concerning salt. Some of the teaching materials are the salt manufacture by eathernware and the salt crystal growth.

In japan the many poor eathernwares remains in ancient widely distributed, but it was recently known the remains of the eathernwares fragments for the salt manufacture.

For teaching materials we have tried to reemerge the salt manufacture by eathernware. The used law clays obtained from Osaka Centers subground at the time of thats rebuilding (1991). The vessels shape have prodused to corn type by Tesugune method of the clays operation (hand kneadind method). After natural drying the vessels have burned with woods and fallen leaves in building-bricks on great steel plate.

Then in the accomplished eathernware it was boiling the kansui(previously concentrated sea water) by oki fire (remaining charcoal fire) and acquired the something salt crystal.

On the other hand it was examined the influence of lead ion in the salt solution for crystal growth. Then it was determined the containing lead quantity in the obtained crystal (sodium chloride) by simple chemical analysis.

As the results, the educed crystal quantity was most from pure salt solution and the acquired crystals were relatively large (5-6mm). In the existence of lead ion the educed crystal quantity decreased with increasing lead concentration and its size got smaller, too. The lead ion addition effected about crytal transparency more than molar ratio 10^{-4} (Pb/Na). We exercized the containing lead analysis by two titration methods of potassium chromate and EDTA. As the results, about 1mg of lead contained in 1.00g of salt. The other it was developed the simple method for great crystal growth.

Utilizing the obtained great crystal it was examined the cleavage and maked the flat plate by polishing (transparency for Infra Red spectra).