

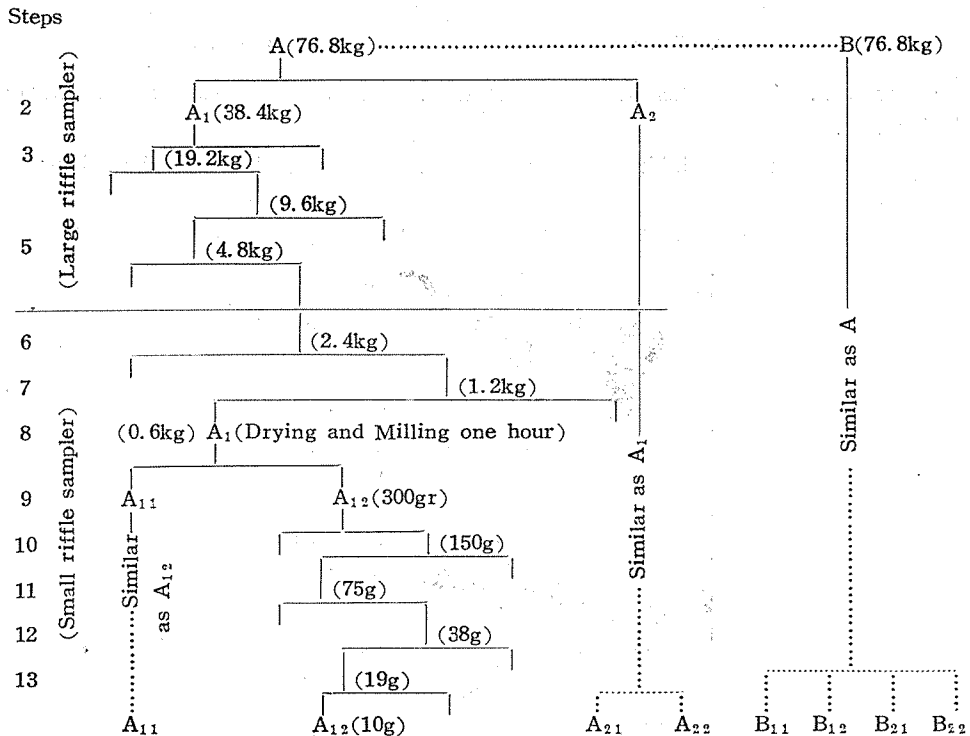
was observed and photographed by electron microscope. Various shapes and sizes of CaCO_3 were formed by changing the precipitating conditions, but the shape of BaCO_3 were almost unchanged by the reaction conditions. The shape of BaCO_3 was rod and the width was constant, 0.1μ , and the length were $0.1 \sim 2.0 \mu$. One of them is shown in Photo 1. The size was scarcely changed by the reaction condition, but it was somewhat larger, when the temperature and the concentration of CO_2 were higher and the concentration of $\text{Ba}(\text{OH})_2$ was lower as shown in Table 1. No aging effect was observed for 3 months. The precipitate turned to coagulated form by filtering and drying.

8. A Method of Sampling for Obtaining the Daily Average of Batch Composition

Ikutaro SAWAI and Megumi TASHIRO

(Sawai Laboratory)

Introducing the statistical treatment recently developed for the analysis of coal etc. to that of glass batch the method of sampling and dividing for finding out the statistically acceptable daily average of the batch composition as well as the method of routine analysis suitable for getting the results within the practical time restriction



were worked out and put to the long term test in a bottle factory.

Procedure. In every fifteen minutes 2 kg of batch was shoveled out at the dog house and discharged alternatively into two boxes A and B. After separating the cullet by passing through 10 mesh sieve the dividing was carried out according to the following schedule.

In each step dividing was carried out by halving the sample size using the riffle sampler, larger or smaller according to the amount, and when the sample size was reduced to 600 g the sample was dried and milled for an hour in order to reduce the error caused by the dividing procedure.

Analysis. A simple volumetric method to separate the batch into three component, namely, soluble in water, soluble in hydrochloric acid and the residue was adopted. The test with the mixture of pure chemicals has proved the high accuracy of the analytical method itself.

Precision. The variance, respectively, in sampling $\hat{\sigma}_S^2$, in dividing $\hat{\sigma}_R^2$, in analysis $\hat{\sigma}_M^2$ and the total variance for all procedures $\hat{\sigma}^2$ are given in the following table.

	Precision (%)			
	$\hat{\sigma}^2$	$\hat{\sigma}_S^2$	$\hat{\sigma}_R^2$	$\hat{\sigma}_M^2$
Soluble in water	0.0121	0.0037	0.0174	0.0001
Soluble in HCl	0.0163	0.0030	0.0310	0.0004
Residue	0.0370	0.0192	0.0405	0.0003

Time necessary for analysis. The total time necessary for carrying out the batch analysis by two operators was found to be about 13 hours. If only two final samples, each from A and B, were analysed the time necessary would be reduced to about 8 hours, although, at the same time, the precision would be lowered, for example, to $\hat{\sigma}^2 = 0.0225$ for water soluble component.

9. Effect of Vanadium Oxide on the Strength of Adherence of Heat-Resisting Enamel Applied on Nickel-Chrome Stainless Steel

Megumi TASHIRO, Sumio SAKKA and Hironori TERANISHI

(Sawai Laboratory)

Good adherence between the enamel coating and the base metal is particularly important for heat-resisting enamels, because the service conditions usually tend to accentuate stresses between the coating and the metal. Cobalt and nickel oxides,