〈原著〉

けん化価測定法の問題点 [1]

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Problem in Measuring Method of Saponification Value

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Abstract

The saponification value is one of the important standards for cosmetic ingredients. Nevertheless, measurements of saponification cannot be taken accurately − measurements are different from each other depending on the persons who measured them.

Examining the causes of such low reproducibility the followings have been cleared: the glass of flask is eroded by hot alkali, which settles and is adsorbed in the small cracks on glass. These residual alkalis make it difficult to judge the end-points of titration. As the result of replacing glass flasks into those of polypropylene which have alkali resistance, the reliability of saponification values has been obviously higher than before.

1. Using polypropylene flasks, the reproducibility of saponification values can be expected much higher than before. Coefficient of variation does not become higher than 1%, even when saponification values are measured by inexperienced persons.

2. According to the Japanese Standards of Cosmetic Ingredients, the time for saponification has been required to be 60 minutes. But around 10 minutes should be enough time − the required time will be different depending upon testing samples, though.

3. At the titration, long chain and saturated fatty acid compounds such as stearates are required to be kept warm not to make solidify.

4. Procedures of cooling and sample weight need not to be considered, because they do not have any considerable influences on saponification values.

Key words: Saponification value; polypropylene flask; saponification time.