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Squalane Titer an Analytical Method for Detergency Testing

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In order to evaluate the detergency of given surfactants a test methodology was developed. It was assumed that since squalene is a component of both internal and external oiliness, it would be a good starting material to evaluate. The method developed called Squalene Titer (SQ), measures the minimal quantity of detergent to emulsify a standard quantity of squalene. The SQ test is carried out in a testtube with increasing amounts of surfactant, until upon shaking the oil globules are no longer present at the surface.

A. Preparation of Test Solution

1.5 grams of squalene is added to a test tube.

1.5 grams of water is then added.

The result is squalene is the top phase, water the bottom phase. There is no interfacial emulsification and a clearly discernable separation between the phases.

B. Preparation of Detergent Solution

The detergent is prepared at 10% active and standardized by Epton titration.

C. Titer Evaluation

The 10% solution of detergent is added drop wise and the test tube is shaken. The oil will be observed on the test tube surface as globular and irregular. As the detergent is added the oil globules will disappear and a uniform white liquid results. At this point foam, which was previously lacking, is also noted in the test tube. The Titer Point is described as the point in the titration in which the globular oil droplets disappear on the glass test tube, and that foam is noted.

Calculation:

Squalene Titer Point =

1.5 grams of squalene/ grams of detergent solution added * (activity of detergent solution)



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