
INTERNATIONAL STANDARD



4318

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Surface active agents and soaps — Determination of water content — Azeotropic distillation method

Agents de surface et savons — Détermination de la teneur en eau — Méthode par entraînement azéotropique

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Descriptors : surfactants, soaps, chemical analysis, determination of content, water, azeotropic method.

Surface active agents and soaps – Determination of water content – Azeotropic distillation method

1 SCOPE

This International Standard specifies an azeotropic distillation method for the determination of the water content of surface active agents and soaps. Volatile matter soluble in water but insoluble in xylene will be included in the result.

2 FIELD OF APPLICATION

This method is applicable to products in the form of powders having water contents greater than 5 % (*m/m*), and in the form of pastes and solutions. It is not applicable to samples containing water-soluble volatile compounds, for example ethanol.

With regard to soaps, as the results cannot be obtained with an accuracy greater than 0,3 %, this method should be used only for soaps containing appreciable amounts of volatile matter insoluble in water. The use of this method is also recommended for soaps made with linseed oil or other drying oils and for certain soaps containing, for example, sodium silicate.

The azeotropic distillation method is applicable only if so indicated in the specific standard for each product.

3 REFERENCES

ISO 607, *Surface active agents and detergents – Methods of sample division.*¹⁾

ISO . . . , *Soaps – Sampling.*²⁾

4 PRINCIPLE

Azeotropic distillation of the water in a test portion with boiling xylene.

5 REAGENT

5.1 Xylene (any of the isomers or a mixture of these isomers in any proportion), boiling range 130 to 140 °C.

NOTE – Xylene being a toxic solvent, the safety instructions for the handling of poisonous solvents should be observed.

6 APPARATUS

Ordinary laboratory apparatus and

6.1 Distillation apparatus, comprising the following items :

6.1.1 Flask, of minimum capacity 500 ml, fitted with a ground glass joint, complying with ISO 383.

6.1.2 Graduated collecting cylinders, of capacity 2 or 10 ml (Dean-Stark receiver).

The graduation interval and its tolerance for the 2 ml graduated collecting cylinders shall be

- graduation in 0,1 ml;
- maximum error : 0,05 ml.

The graduation interval and its tolerance for the 10 ml graduated collecting cylinders shall be, after 1 ml :

- graduation in 0,2 ml;
- maximum error : 0,1 ml.

6.2 Reflux condenser, connected to the collecting cylinder (6.1.2).

NOTE – Before use, remove all traces of fatty matter from the graduated tube and the interior tube of the reflux condenser by washing them successively with, for example, chromic-sulphuric acid mixture, then with distilled water and finally with acetone. Then dry them. Perfect cleanliness of the apparatus is essential to the success of the test.

7 SAMPLING

The laboratory sample of the surface active agent or of the soap shall be prepared and stored according to the instructions given in ISO 607 or in ISO . . .

1) At present at the stage of draft. (Revision of ISO/R 607.)

2) In preparation.