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Surface active agents — Sulfated ethoxylated alcohols and alkylphenols — Estimation of the mean relative molecular mass

*Agents de surface — Sulfates d'alcools et d'alkylphénols éthoxylés — Évaluation de la masse
moléculaire relative moyenne*

Reference number
ISO 6843 : 1988 (E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6843 was prepared by Technical Committee ISO/TC 91, *Surface active agents*.

Annex A forms an integral part of this International Standard.

Surface active agents — Sulfated ethoxylated alcohols and alkylphenols — Estimation of the mean relative molecular mass

1 Scope

This International Standard specifies a method for the estimation of the mean relative molecular mass of the anionic-active matter present in ordinary commercial neutralized products of sulfation of ethoxylated alcohols or alkylphenols [alkyl oxyethylene sulfates (ethoxylated alcohol sulfates) or alkylphenol oxyethylene sulfates (ethoxylated alkylphenol sulfates)] containing an average of not more than 20 oxyethylene groups per molecule.

It also sets out, in annex A, a general scheme of analysis.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 607 : 1980, *Surface active agents and detergents — Methods of sample division.*

ISO 1042 : 1983, *Laboratory glassware — One-mark volumetric flasks.*

ISO 2271 : 1972, *Surface active agents — Detergents — Determination of anionic-active matter (Direct two-phase titration procedure).*

ISO 4800 : 1977, *Laboratory glassware — Separating funnels and dropping funnels.*

ISO 6842 : 1983, *Surface active agents — Polyethoxylated alcohol and alkylphenol sulfates — Determination of total active matter.*

ISO 8799 : 1988, *Sulfated ethoxylated alcohols and alkylphenols — Determination of content of unsulfated matter.*

3 Principle

From a solution of the test portion saturated with sodium chloride, extraction of alkylether sulfate with an ethyl acetate/butan-1-ol mixture, then evaporation of the aqueous phase containing the polyglycol, the polyglycol sulfate and possibly traces of ether sulfates; then removal of salts from the residue by treatment with methanol and filtration.

Evaporation of an aliquot portion of the filtrate and weighing of the residue, then redissolution in water and determination of the sodium chloride and anionic-active matter contents.

Determination of the polyglycol content by passing the remaining fraction of filtrate through an ion-exchange resin.

Determination of the polyglycol sulfate content by difference between the above determinations.

From the content of anionic surface active agent (alkylether sulfate) and the anionic surface active matter content determined by two-phase titration, estimation of the mean relative molecular mass.

NOTE — The content of anionic surface active agent (alkylether sulfate) is obtained by the difference between the total active matter content and the unsulfated matter and polyglycol sulfate contents.

4 Reagents and materials

During the analysis, use only reagents of recognized analytical reagent grade and only distilled water or water of equivalent purity.

4.1 Methanol.

4.2 Sodium chloride.

4.3 Ethyl acetate/butan-1-ol, mixture (9 + 1)-by volume.

4.4 Sodium chloride, 59 g/l solution.

4.5 Hydrochloric acid, 73 g/l solution.