

# Surface active agents — Determination of dialkyl-tetralins content in linear alkylbenzene by high performance liquid chromatography (HPLC)

The European Standard EN 13405:2002 has the status of a  
British Standard

ICS 71.100.40

# National foreword

This British Standard is the official English language version of EN 13405:2002.

The UK participation in its preparation was entrusted to Technical Committee CII/34, Methods of test for surface active agents, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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This British Standard, having been prepared under the direction of the Materials and Chemicals Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 20 December 2002

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English version

Surface active agents - Determination of dialkyl-tetralins content  
in linear alkylbenzene by high performance liquid  
chromatography (HPLC)

Agents de surface - Détermination de la teneur en  
dialkyltétralines dans les alkylbenzènes linéaires par  
chromatographie liquide à haute performance (CLHP)

Grenzflächenaktive Stoffe - Bestimmung des Gehaltes von  
Dialkyltetralin in linearem Alkylbenzol mittels  
Hochleistungs-Flüssigchromatographie (HPLC)

This European Standard was approved by CEN on 23 October 2002.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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## Foreword

This document (EN 13405:2002) has been prepared by Technical Committee CEN /TC 276, "Surface active agents" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2003, and conflicting national standards shall be withdrawn at the latest by June 2003.

Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies a method for the determination of dialkyl-tetralins (DAT), being 1,4-dialkyl-2,3-dihydro-naphthalene in linear alkylbenzene (LAB) in the range of the mass fraction of 0,5 % to 10 %.

## 2 Normative reference

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 3696:1995, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)*.

## 3 Principle

The sample is analysed by isocratic high performance liquid chromatography (HPLC) using a micro-particulate silica stationary phase, 2,2,4-methylpentane mobile phase and ultra-violet absorbance detection at 254 nm. Quantification is made by using a "modified" external standard technique. Pure standard dialkyl-tetralins (DAT) are not available, therefore the molar response of DAT is assumed to be the same as the commercially available tetrahydronaphthalene (THN) used as external standard.

## 4 Reagents

During the analysis, unless otherwise specified, use only reagents of recognized analytical grade and have been checked in advance as to not interfere with the analytical results.

**4.1 Water**, complying with grade 3 as defined in EN ISO 3696:1995.

**4.2 2,2,4-trimethylpentane** (iso-octane),  $C_8H_{18}$ , HPLC grade, with a water content less than 100 mg/kg.

NOTE Care should be taken when using iso-octane, which is highly flammable.

**4.3 Tetrahydronaphthalene** (THN),  $C_{10}H_{12}$ , minimum purity 96 % (determination by gas chromatography area standard technique).

NOTE Care should be taken when using tetrahydronaphthalene which can be irritating to eyes and skin.

**4.4 Hexane**,  $C_6H_{14}$ .

**4.5 Toluene**,  $C_7H_8$ .

## 5 Apparatus

Ordinary laboratory apparatus and glassware together with the following.

**5.1 High performance liquid chromatograph**, suitable for analysis according to the operating instructions given in Table 1.