TECHNICAL REPORT

ISO/TR 18818

First edition
2017-06

Cosmetics — Analytical method — Detection and quantitative determination of Diethanolamine (DEA) by GC/MS

Cosmétique — Méthode analytique — Détection et dosage quantitatif de la diéthanolamine (DEA) par CG/SM

Reference number
ISO/TR 18818:2017(E)

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Foreword

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This document was prepared by Technical Committee ISO/TC 217, *Cosmetics*.

Introduction

Diethanolamine (DEA) has been restricted for use in cosmetics and personal care products in a number of jurisdictions due to its potential health risk since residual levels of DEA might react with other specific ingredients to form the extremely potent carcinogen nitrosodiethanolamine (NDELA). Therefore, a harmonized method for the screening of DEA in cosmetic raw materials is considered important.

Numerous methods for the trace analysis of alkanolamines including DEA in different sample matrices have been developed and published[1] [2] [3]. Among the methods available for the analysis of alkanolamines, techniques using gas chromatography (GC) or liquid chromatography (LC) with a variety of detector systems have received the most attention[4] [5]. More recent procedures, mass spectrometry (MS) detection in combination with chromatography separation is used to determine analyte content in aqueous solutions with minimal requirements for extraction and cleanup.[6] [7] In some cases, derivatization of alkanolamines has also been used to improve the chromatographic separations and detection[8] [9].

This document describes a rapid and simple method suitable for simultaneously qualitative and quantitative screening of cosmetics and cosmetic raw materials containing residue of above 0,1 % diethanolamine (DEA).