



DEAS 847- 11: 2015

ICS 71.100.70

DRAFT EAST AFRICAN STANDARD

Oils for cosmetic industry — Methods of test

Part 11: Determination of allyl isothiocyanate

EAST AFRICAN COMMUNITY

Copyright notice

This EAC document is copyright-protected by EAC. While the reproduction of this document by participants in the EAC standards development process is permitted without prior permission from EAC, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from EAC.

Requests for permission to reproduce this document for the purpose of selling it should be addressed as shown below or to EAC's member body in the country of the requester:

© East African Community 2015 — All rights reserved
East African Community
P.O.Box 1096
Arusha
Tanzania
Tel: 255 27 2504253/8
Fax: 255 27 2504481/2504255
E-mail: eac@eachq.org
Web: www.eac-quality.net

Reproduction for sales purposes may be subject to royalty payments or a licensing agreement. Violators may be persecuted

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

DEAS 847-11 was prepared by Technical Committee EAS/TC 071, Cosmetics and cosmetic products.

DRAFT STANDARD

Oils for cosmetic industry — Methods of test

Part 11: Determination of allyl isothiocyanate

1. Scope

This Standard describes the method of test for the determination of allyl isothiocyanate in Oils for cosmetic industry .

2. Principle

The oil obtained from black mustard seeds contains sinigrin and myrosin which, after maceration with water, yields a volatile oil, the major constituent of which is allyl isothiocyanate. The oil obtained from white mustard seeds contains acrylyl isothiocyanate which is much less volatile than allyl isothiocyanate.

3. The allyl isothiocyanate in the oil is steam distilled into a known excess of silver nitrate solution, and the excess of silver nitrate solution is determined by titration with standard ammonium thiocyanate solution.

4. Apparatus

4.1 Distillation Flask — 500ml round bottomed flask

4.2 Reflux Condenser —

4.3 Round bottomed flask cylinder— 200 ml capacity

4.4 Water Bath.

5. Reagents

5.1 Ethyl Alcohol — 95 percent (by volume) or rectified spirit neutral to phenolphthalein

5.2 Silver Nitrate Solution — approximately 0.1N

5.3 Ammonium Hydroxide Solution — 10 percent (m/v)

5.4 Nitric Acid Analytical grade

5.5 Ferric Ammonium Sulphate Indicator — 0.1 percent solution in water

5.6 Standard Ammonium Thiocyanate Solution — Approximately 0.1N.

6 Procedure

Weigh about 5g of the sample into a 500 ml distillation flask and add 25ml of ethyl alcohol, 250 ml of water and a few pieces of pumice stone. Distil the mixture in steam and collect the distillate in a 200 ml round bottomed flask containing exactly 25ml of silver nitrate solution and 10 ml of ammonium hydroxide solution. Collect as rapidly as possible about 150 ml of the distillate. Attach the reflux condenser to the Round bottomed flask and heat the mixture for about one hour on a boiling water-bath. Cool to room temperature, add water to make up to 200 ml and filter the contents after shaking. Take 100 ml of the filtrate, add 6 ml of nitric acid and a few drops of ferric ammonium indicator, and titrate with standard ammonium thiocyanate solution until a persistent red colour is obtained. Carry out a blank test at the same time. sulphate

7 Calculation

Allyl isothiocyanate, percent by weight

$$= \frac{9.915 (B - S) N}{m}$$

Where,

B = Volume in ml standard ammonium thiocyanate solution required for the blank determination,

S = volume in ml of standard ammonium thiocyanate solution required for the sample

N = normality of standard ammonium thiocyanate solution, and

m = mass in g of the sample taken for test.

DRAFT STANDARD