## International Standard



INTERNATIONAL ORGANIZATION FOR STANDARDIZATION® MEX DYNAPODHAR OPFAH M3ALMR NO CTAHDAPTM3ALMM®ORGANISATION INTERNATIONALE DE NORMALISATION

# Soaps — Determination of chloride content — Titrimetric method

Savons – Dosage des chlorures – Méthode titrimétrique

## Second edition – 1983-08-15h STANDARD PREVIEW (standards.iteh.ai)

ISO 457:1983 https://standards.iteh.ai/catalog/standards/sist/4b487d00-9771-438c-af04dccdada3ddc7/iso-457-1983

UDC 661.187 : 543.24 : 546.131

Ref. No. ISO 457-1983 (E)

Descriptors : surfactants, soaps, chemical analysis, determination of content, chlorides, volumetric analysis.

### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

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.

International Standard ISO 457 was developed by Technical Committee ISO/TC 91, EVIEW Surface active agents, and was circulated to the member bodies in June 1982.

It has been approved by the member bodies of the following countries :

	<u>130 437.1985</u>	
Australia	kttps://standards.iteh.ai/catalog/standards/sist/4b487d00-9771-438c-af04-	
Austria	Hungary	dccdadsouth Africa Rep? of
Belgium	Iran	Spain
Chile	Japan	Switzerland
China	Mexico	USA
Czechoslovakia	Netherlands	USSR
Egypt, Arab Rep. of	Poland	
France	Portugal	

No member body expressed disapproval of the document.

This second edition cancels and replaces the first edition (i.e ISO 457-1976).

## Soaps – Determination of chloride content – Titrimetric method

#### 1 Scope and field of application

This International Standard specifies a method for determining the chloride content of commercial soaps, excluding compounded products; this method is applicable to soaps having a chloride content, expressed as sodium chloride, equal to or greater than 0,1 % (m/m).<sup>1)</sup> (Standards. International Standards Stand

> **4.2 One-mark volumetric flask**, capacity 200 ml, comply-<u>ISO 457:1983</u>ing with the requirements of ISO 1042.

#### 2 Principle

ISO 457:1983 ing with the requirements of ISO 1042. https://standards.iteh.ai/catalog/standards/sist/4b487d00-9771-438c-af04-

Determination of the chloride content by argentimetric ditration/iso-45**4.3**98**Boiling water bath.** after decomposition of a test portion and separation of fatty acids by filtration.

### 3 Reagents

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

**3.1** Nitric acid,  $\rho$  approximately 1,42 g/ml, about 70 to 80 % (m/m) solution, which has been boiled until colourless.

**3.2** Ammonium iron(III) sulfate, about 10 % (m/m) solution.

**3.3** Ammonium thiocyanate, standard volumetric solution,  $c(NH_4SCN) \approx 0.1 \text{ mol/l}.$ 

**3.4** Silver nitrate, standard volumetric solution,  $c(AgNO_3) \approx 0.1 \text{ mol/I}.$ 

### 5 Sampling

4 Apparatus

Sampling of soaps will form the object of a future International Standard.

#### 6 Procedure

#### 6.1 Test portion

Weigh, to the nearest 0,01 g, approximately 5 g of the laboratory sample into the beaker (4.1).

#### 6.2 Determination

Dissolve the test portion (6.1) in 50 ml of hot water. Transfer the solution quantitatively to the one-mark volumetric flask (4.2), effecting this by washing with small portions of water. Add 5 ml of the nitric acid solution (3.1), and immediately add 25,0 ml of the silver nitrate solution (3.4). Place the flask on the

<sup>1)</sup> The potentiometric method specified in ISO 4323 can be used for products having a chloride content, expressed as sodium chloride, higher or lower than 0,1 % (m/m).

boiling water bath (4.3) until the fatty acids are completely separated and the silver chloride formed has collected in a mass. Cool the one-mark volumetric flask and contents to room temperature and dilute to the mark with water. Mix by shaking and filter through a dry, fluted filter paper. Discard the first 10 ml, and then collect at least 110 ml, of the filtrate. Transfer, using a pipette, 100,0 ml to a conical flask, add 2 to 3 ml of the ammonium iron(III) sulfate solution (3.2) and titrate with the standard volumetric ammonium thiocyanate solution (3.3), shaking the conical flask vigorously, until the appearance of a permanent reddish-brown coloration.

#### 7 **Expression** of results

#### Method of calculation 7.1

The chloride content of the soap, expressed as a percentage by mass of sodium chloride (NaCl), is given by the formula

$$0,058\ 5\ \times\ (25\ c_1\ -\ 2\ Vc_2)\ \times\ \frac{100}{m}$$

and, as a percentage by mass of potassium chloride (KCl), by the formula iTeh STANDARaD all information necessary for the complete identification

$$c_2$$
 is the actual concentration, expressed in moles of NH<sub>4</sub>SCN per litre, of the ammonium thiocyanate solution (3.3);

0,058 5 is the mass, in grams, of sodium chloride corresponding to 1,00 ml of the silver nitrate solution,  $c(AgNO_3) = 1,000 \text{ mol/l};$ 

0,074 6 is the mass, in grams, of potassium chloride corresponding to 1,00 ml of the silver nitrate solution,  $c(AgNO_3) = 1,000 \text{ mol/l}.$ 

#### 7.2 Reproducibility

The difference between results obtained on the same sample in two different laboratories should not differ by more than 0.05 % from the value of the percentage by mass of chlorides found, expressed either as sodium chloride or as potassium chloride.

#### 8 Test report

of the sample;

The test report shall include the following information :

$$0,074.6 \times (25 c_1 - 2 V c_2) \times \frac{100}{m}$$

(standards.iteh.ai) b) the reference of the method used (reference to this International Standard); **ISO 457** 

where

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is the mass, in grams, of the test portion (6.1); dccdada3ddc7/iso-45/-1985 and the method of expression used; т

Vis the volume, in millilitres, of the standard volumetric ammonium thiocyanate solution (3.3) used;

 $c_1$  is the actual concentration, expressed in moles of AgNO<sub>3</sub> per litre, of the silver nitrate solution (3.4);

d) the test conditions;

any details not specified in this International Standard, e) or regarded as optional, as well as any incidents likely to have affected the results.