SLOVENSKI STANDARD
SIST EN ISO 1158:2000

01-maj-2000

Polimerni materiali - Homo- in kopolimeri vinilklorida - Določevanje klora (ISO 1158:1998)

Plastics - Vinyl chloride homopolymers and copolymers - Determination of chlorine content (ISO 1158:1998)

Kunststoffe - Vinylchloridhomopolymere und Copolymere - Bestimmung des Chlorgehalts (ISO 1158:1998)

Plastiques - Homopolymeres et copolymeres de chlorure de vinyle - Dosage du chlore (ISO 1158:1998)

Ta slovenski standard je istoveten z: **EN ISO 1158:1998**

ICS:

83.080.20	Plastomeri	Thermoplastic materials

SIST EN ISO 1158:2000 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 1158

April 1998

ICS 83.080

Descriptors: see ISO document

English version

Plastics - Vinyl chloride homopolymers and copolymers - Determination of chlorine content (ISO 1158:1998)

Plastiques - Homopolymères et copolymères de chlorure de vinyle - Dosage du chlore (ISO 1158:1998)

This European Standard was approved by CEN on 23 March 1998.

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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 Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of the International Standard ISO 1158:1998 has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

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of an identical text or by endorsement, at the latest by October 1998, and conflicting national standards shall be withdrawn at the latest by October 1998.

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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 1158:1998 was approved by CEN as a European Standard without any modification.

INTERNATIONAL STANDARD

ISO 1158

Third edition
1998-04-01

Plastics — Vinyl chloride homopolymers and copolymers — Determination of chlorine content

Plastiques — Homopolymères et copolymères de chlorure de vinyle — Dosage du chlore

Reference number
ISO 1158:1998(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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 1158 was prepared by Technical Committee ISO/TC 61, *Plastics,* Subcommittee SC 9, *Thermoplastic materials.*

This third edition cancels and replaces the second edition (ISO 1158:1984), which has been technically revised.

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Plastics — Vinyl chloride homopolymers and copolymers — Determination of chlorine content

WARNING — All precautions shall be taken, particularly those mentioned in the text of the present International Standard, to protect operators from risks presented by both methods.

1 Scope

This International Standard specifies two methods for the determination of the chlorine content of homopolymers and copolymers of vinyl chloride, free from plasticizers or additives, namely:

— method A (combustion in a bomb);

— method B (combustion in a flask).

2 Principle

A test portion is oxidised with sodium peroxide (method A) or gaseous oxygen (method B) followed by potentiometric or volumetric titration of the resulting chlorides.

3 Reagents

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

3.1 Silver nitrate, standard volumetric solution, $c(AgNO_3)$ = 0,1 mol/l or 0,05 mol/l.

3.2 Nitric acid solution, $c(HNO_3)$ = 2 mol/l.

For method A only:

3.3 Nitric acid, concentrated.

3.4 Sodium peroxide, granulated.

3.5 Starch, sucrose or **ethylene glycol,** as combustion aids.

For method B only:

3.6 Oxygen, gaseous.

3.7 Sodium nitrate.

3.8 Potassium hydroxide solution, 100 g/l.

3.9 Hydrogen peroxide solution, 300 g/l.

4 Apparatus

4.1 Drying oven, capable of being maintained at 50 °C ± 2 °C or 75 °C ± 2 °C.

4.2 Balance, to weigh to an accuracy of 0,1 mg (method A) or 0,01 g (method B).

4.3 Equipment for Volhard titration or for potentiometric titration, with a burette having a capacity and accuracy appropriate to the chosen method (A or B).

For method A only:

4.4 Combustion bomb, (for example Parr bomb or another bomb which gives the same results), gas or electrically fired. An example of a suitable gas-fired bomb is shown in figure 1.

4.5 Nickel crucible with lid, to fit into the bomb (gas-fired). Suitable dimensions are: diameter 25 mm, height 40 mm. A smaller crucible could be used if the amount of test sample is reduced.

4.6 Safety oven.

4.7 Beaker, capacity 600 ml.

For method B only:

4.8 Round- or flat-bottomed flask, capacity 500 ml to 1 000 ml, with head designed for oxygen combustion (see figure 2). A platinum wire 1,0 mm in diameter and 120 mm long in the shape of a tapered spiral is attached to the stopper, a suitable spiral being 15 mm in diameter and 15 mm long. **It is recommended that metal gauze be wrapped around the flask for safety.**

4.9 Filter paper, about 3 cm × 3,5 cm, free from halogens and ash.

4.10 Beaker, capacity 250 ml.

5 Test sample

The sample shall be in powdered or granular form, and if necessary shall be cut into pieces 1 mm to 3 mm in size.

The sample shall be oven-dried for 2 h at 75 °C or 16 h at 50 °C.

Approximate dimensions in millimetres

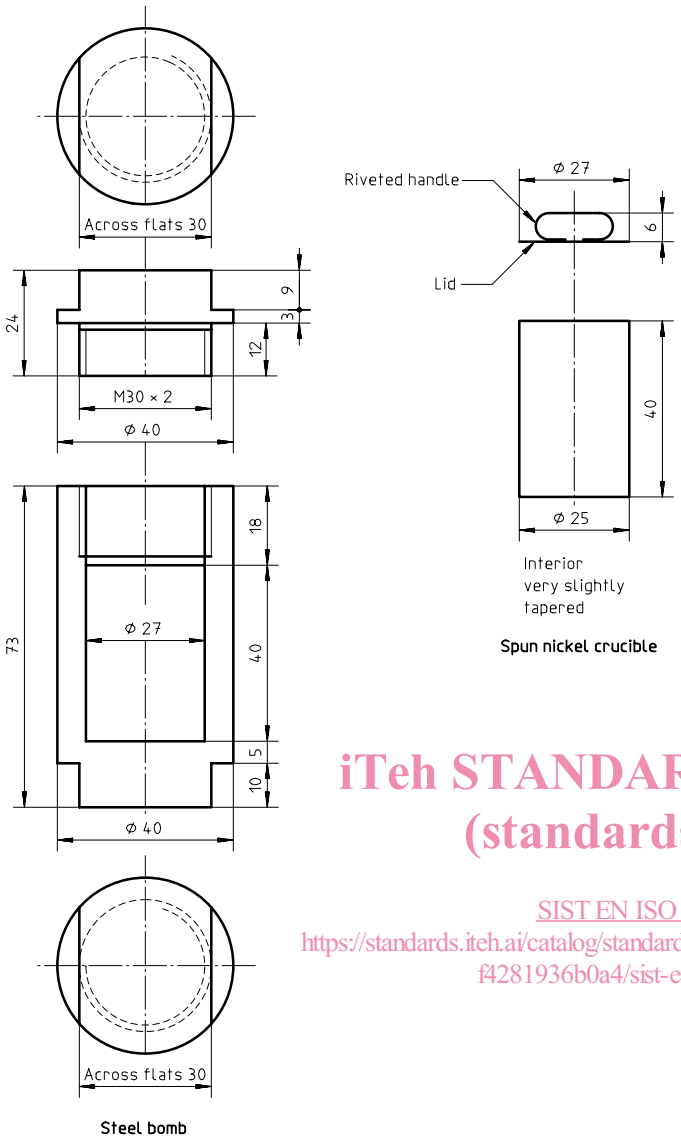

Figure 1 — Example of a combustion bomb, gas-fired type
(for method A)

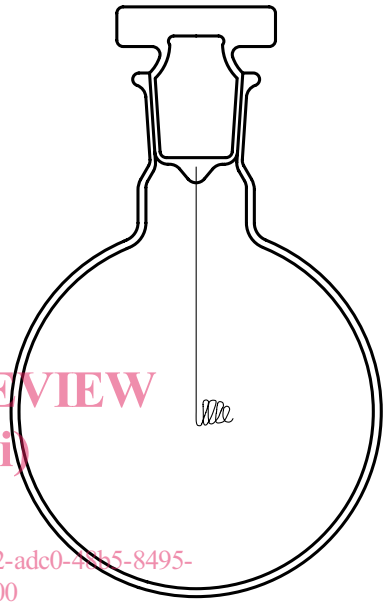

Figure 2 — Example of a flask for oxygen combustion with platinum wire attached to stopper (for method B)

6 Procedure

6.1 **Method A** (combustion bomb)

6.1.1 First place 7 g to 7,5 g of sodium peroxide (3.4) in the nickel crucible (4.5) (for the gas-fired bomb) or in the fusion cup of the bomb (for the electrically fired bomb), then add a test portion of about 0,25 g (weighed to 0,1 mg) mixed with 0,16 g to 0,17 g of combustion aid (3.5), then a further 7 g to 7,5 g of sodium peroxide. The placing of the sodium peroxide in the crucible or fusion cup shall be done behind a shield protecting the operator. Mix by stirring, then place the crucible, with the lid in position, inside the bomb and close the bomb tightly. If an electrically fired bomb is used, assemble the bomb and tap it to settle the charge.

A smaller crucible and test portion could be used.