
Dc`ja Yfb]a UYf]U]!'<ca cdc`ja Yf]`b`_cdc`ja Yf]j]b]`_cf]XU!'8 c`c Yj Ub^Y
dfYcghUb_Uj]b]`_cf]XU!'AYfcXUg'd`]bg_c`_fca Urc[fU]c`f]GC* (\$%% ,) Ł

Plastics - Homopolymer and copolymer resins of vinyl chloride - Determination of residual vinyl chloride monomer - Gas chromatographic method (ISO 6401:1985)

Kunststoffe - Vinylchlorid-Homopolymere und Copolymere - Bestimmung des Restgehaltes an Vinylchlorid-Monomer - Gaschromatographisches Verfahren (ISO 6401:1985)

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Plastiques - Résines d'homopolymères et de copolymères de chlorure de vinyle - Détermination du chlorure de vinyle monomère résiduel - Méthode par chromatographie en phase gazeuse (ISO 6401:1985)

Ta slovenski standard je istoveten z: EN ISO 6401:2004

ICS:

83.080.20 Plastomeri Thermoplastic materials

SIST EN ISO 6401:2005 en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 6401

November 2004

ICS 83.080.20

English version

**Plastics - Homopolymer and copolymer resins of vinyl chloride -
Determination of residual vinyl chloride monomer - Gas
chromatographic method (ISO 6401:1985)**

Plastiques - Résines d'homopolymères et de copolymères
de chlorure de vinyle - Détermination du chlorure de vinyle
monomère résiduel - Méthode par chromatographie en
phase gazeuse (ISO 6401:1985)

Kunststoffe - Vinylchlorid-Homopolymere und Copolymere -
Bestimmung des Restgehaltes an Vinylchlorid-Monomer -
Gaschromatographisches Verfahren (ISO 6401:1985)

This European Standard was approved by CEN on 20 October 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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.

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



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 6401:2004 (E)**Foreword**

The text of the International Standard from Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) has been taken over as a European Standard by 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 May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

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

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Annex ZA (normative)

Normative references to international publications with their relevant European publications

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).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 472	1999	Plastics - Vocabulary	EN ISO 472	2001

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International Standard



6401

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Plastics — Homopolymer and copolymer resins of vinyl chloride — Determination of residual vinyl chloride monomer — Gas chromatographic method

Plastiques — Résines d'homopolymères et de copolymères de chlorure de vinyle — Détermination du chlorure de vinyle monomère résiduel — Méthode par chromatographie en phase gazeuse

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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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6401 was prepared by Technical Committee ISO/TC 61, *Plastics*.

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Plastics — Homopolymer and copolymer resins of vinyl chloride — Determination of residual vinyl chloride monomer — Gas chromatographic method

0 Introduction

The method specified in this International Standard is based on one that is described in the Directive of the European Economic Community (EEC) for *Materials and articles containing vinyl chloride monomer intended for use with foodstuffs*. (Commission Directive 80/776/EEC of 8th July 1980.)

1 Scope and field of application

This International Standard specifies a method for the determination of residual vinyl chloride monomer in homopolymer and copolymer resins of vinyl chloride.

For the purpose of this International Standard, the field of application is limited to these homopolymer and copolymer resins, but the method is also applicable to materials and articles made from the resins.

The lower limit of detection is dependent on the extent to which impurities in the solvent interfere. Use of the solvent specified ensures that 0,5 mg/kg can be detected but 0,2 mg/kg can be detected if interference is sufficiently low.

2 References

ISO 472, *Plastics — Vocabulary*.

ISO 5725, *Precision of test methods — Determination of repeatability and reproducibility by interlaboratory tests*.

3 Principle

Dissolution or suspension of a test portion in a suitable solvent, and determination of the vinyl chloride content by gas chromatography, using the "head-space" method.

4 Reagents

All reagents shall be of recognized analytical grade and the water used shall be distilled water or water of equivalent purity.

WARNING — Vinyl chloride is a hazardous substance and is a gas at ambient temperatures; the preparation of

solutions must therefore be carried out only under a well-ventilated hood.

4.1 Vinyl chloride, of purity greater than 99,5 %.

4.2 *N,N*-Dimethylacetamide, or other suitable solvents such as *N,N*-dimethylformamide, tetrahydrofuran or dichloroethane, free of any impurity with the same chromatographic retention time as vinyl chloride or the internal standard (4.3), under the conditions of the test.

4.3 Diethyl ether, or other suitable reagent such as *cis*-but-2-ene, in the solvent (4.2), for use as the internal standard.

The internal standard shall not contain any impurity with the same chromatographic retention time as vinyl chloride under the conditions of the test.

The use of an internal standard is optional (see 6.3.1).

4.4 Vinyl chloride, standard solution corresponding to approximately 2 000 mg of vinyl chloride per kilogram.

Weigh, to the nearest 0,1 mg, a suitable glass vessel and place in it a suitable volume (for example 50 ml) of the solvent (4.2). Reweigh. Add a suitable mass (for example 0,1 g) of the vinyl chloride, either in liquid or gas form, injecting it slowly into the solvent.

The vinyl chloride may also be added by bubbling it through the solvent, provided that a device is used which will prevent loss of solvent.

Reweigh to the nearest 0,1 mg.

Leave for 2 h to allow equilibrium to be attained.

Store the solution in a refrigerator.

4.5 Vinyl chloride, dilute standard solution.

Dilute a weighed amount of the standard vinyl chloride solution (4.4) to a known volume or mass, using the solvent (4.2) or the internal standard (4.3).

Record the concentration of the dilute standard solution in milligrams per litre, or milligrams per kilogram, as appropriate.