International Standard

ISO 1158

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

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

Fourth edition
2026-03

Reference number
ISO 1158:2026(en)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastics materials,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 1158:1998), which has been technically revised.

The main changes are as follows:

— the mandatory normative references clause has been added (see Clause 2);

— the mandatory terms and definitions clauses has been added (see Clause 3)

— the unit of concentration of nitric acid solution has been changed, and a preparation method has been added (see 5.3);

— a method for determining the endpoint of titration by potentiometric titration has been added (see 8.1.6, 8.2.5);

— the preparation method of potassium hydroxide solution has been added (see 5.5.3);

— the requirements of filter paper have been changed (see 6.5.2);

— the test procedure for collecting the combustion-based liquid and the amount of liquid collected in method B have been changed (see 8.2.5);

— the tolerances of the method have been changed (see 9.2).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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

WARNING — All precautions in this document shall be taken to protect operators from risks presented by both methods.

1 Scope

This document 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 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 6353-1, *Reagents for chemical analysis — Part 1: General test methods*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 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.

5 Reagents

During the analysis, use only reagents of analytical grade as specified in ISO 6353-1, and grade 3 or better purity water as specified in ISO 3696, as well as the following.

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

5.2 Nitric acid, mass concentration of approximately 68 %.

5.3 Nitric acid solution, $c(HNO_3)$ = 125 g/l, measure 135 ml of concentrated nitric acid (5.2) and dilute to 1 000 ml.