61

INTERNATIONAL STANDARD

ISO 8985

First edition
1989-09-01

Plastics — Ethylene/vinyl acetate copolymer (E/VAC) thermoplastics — Determination of vinyl acetate content

Plastiques — Copolymères éthylène/acétate de vinyle (E/VAC) thermoplastiques — Dosage de l'acétate de vinyle

Reference number
ISO 8985 : 1989 (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 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 8985 was prepared by Technical Committee ISO/TC 61, *Plastics.*

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Printed in Switzerland

Plastics — Ethylene/vinyl acetate copolymer (E/VAC) thermoplastics — Determination of vinyl acetate content

1 Scope

1.1 This International Standard specifies two categories of methods for the determination of the vinyl acetate (VAC) content in ethylene/vinyl acetate (E/VAC) copolymers for their designation in accordance with ISO 4613-1. The first category comprises "reference methods", the second comprises "control methods".

"Reference methods" are used for the calibration of the method used for the determination of the vinyl acetate content of ethylene/vinyl acetate copolymers.

"Control methods" can be used for the determination if calibrated with one of the "reference methods" described in clause 3 and if the repeatability is acceptable.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4613-1 : 1985, *Plastics — Ethylene/vinyl acetate copolymer thermoplastics (E/VAC) — Part 1: Designation.*

ISO 4799 : 1978, *Laboratory glassware — Condensers.*

3 Reference methods

3.1 Reference method 1 : Hydrolysis and back-titration

3.1.1 Principle

Dissolution of a test portion in xylene and hydrolysis of the acetate groups by potassium hydroxide in alcoholic solution. Addition of excess of sulfuric or hydrochloric acid. Back-titration of the acid with a standard volumetric solution of sodium hydroxide, using phenolphthalein as indicator.

3.1.2 Reagents

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

3.1.2.1 Xylene.

3.1.2.2 Sulfuric acid, approximately 5 g/l solution, or **hydrochloric acid,** approximately 3,7 g/l solution.

3.1.2.3 Potassium hydroxide, ethanolic solution, approximately 5,6 g/l.

Dissolve 5,6 g of solid potassium hydroxide (KOH) in 500 ml of ethanol. Make up to 1 000 ml, allow to stand overnight and decant the clean portion of the solution.

3.1.2.4 Sodium hydroxide, standard volumetric solution, c(NaOH) = 0,1 mol/l.

3.1.2.5 Phenolphthalein, indicator solution.

Dissolve 0,7 g of phenolphthalein in 100 ml of ethanol.

3.1.3 Apparatus

Ordinary laboratory apparatus and

3.1.3.1 Burette, of capacity 50 ml, for the sodium hydroxide solution (3.1.2.4).

3.1.3.2 Pipette, of capacity 30 ml, for the acid solution (3.1.2.2).

3.1.3.3 Pipette, of capacity 25 ml, for the potassium hydroxide solution (3.1.2.3).

3.1.3.4 Cylinder, of capacity 50 ml, for the xylene (3.1.2.1).

3.1.3.5 Conical flask, of capacity 250 ml or 300 ml, with stopper.

3.1.3.6 Dropping bottle, for the phenolphthalein indicator solution (3.1.2.5).