International Standard

ISO 15373

Plastics — Polymer dispersions — Determination of free formaldehyde

Plastiques — Dispersions de polymères — Dosage du formaldéhyde libre

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Foreword

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

This second edition cancels and replaces the first edition (ISO 15373:2001), which has been technically revised.

The main changes are as follows:

— text is revised according to the latest ISO Directive, Part 2.

— added Figure 1, as illustration of the principle of this method.

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.

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Plastics — Polymer dispersions — Determination of free formaldehyde

1 Scope

This document specifies two methods for the determination of free formaldehyde (HCHO) in polymer dispersions.

This document is applicable to acrylic, acrylonitrile butadiene, carboxylated styrene-butadiene and vinyl acetate polymer dispersions. It is also applicable to polymer dispersions of other compositions.

Method A (UV/Vis spectrometer method) is applicable to polymer dispersions with a free-formaldehyde content higher than 10 mg/kg.

Method B (HPLC method) is applicable for determining lower formaldehyde contents or carrying out arbitration analyses.

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 2227, *Formaldehyde solutions for industrial use — Determination of formaldehyde content*

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

The polymers dispersed in a polymer dispersion are separated from the aqueous phase by filtration, centrifuge or coagulation. The resulting aqueous sample solution containing formaldehyde reacts with 2,4-pentanedione to yield a lutidine derivative (see Figure 1), which can be analysed by UV detector at 410 nm.

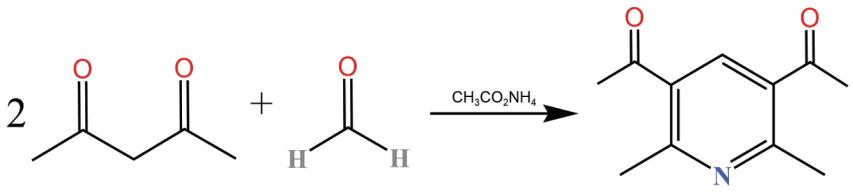


Figure 1 — Reaction of formaldehyde with 2,4-pentanedione

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