

INTERNATIONAL STANDARD

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Plastics — Phenolic resins — Determination of free-formaldehyde content — Hydroxylamine hydrochloride method

*Plastiques — Résines phénoliques — Dosage du formaldéhyde libre —
Méthode au chlorhydrate d'hydroxylamine*



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Foreword

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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 9397 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 12, *Thermosetting materials*.

This second edition cancels and replaces the first edition (ISO 9397:1989), of which it constitutes a minor revision.

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Plastics — Phenolic resins — Determination of free-formaldehyde content — Hydroxylamine hydrochloride method

1 Scope

This International Standard specifies a method of chemically determining free formaldehyde in phenolic resins by potentiometric titration, in aqueous or organic solution. The method is applicable to resins with free-formaldehyde contents up to and including 15 % (*m/m*). For free-formaldehyde contents between 15 % (*m/m*) and 30 % (*m/m*), it may be necessary to adjust the concentrations of the standard volumetric solutions used accordingly. This method must not be used in the presence of hexamethylenetetramine.

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 indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 9020:1994, *Binders for paints and varnishes — Determination of free-formaldehyde content of amino resins — Sodium sulfite titrimetric method*.

ISO 11402:1993, *Plastics — Condensation resins — Determination of free formaldehyde*.

3 Choice of method

The methods available for the determination of free formaldehyde in condensation resins are summarized in table 1.

Table 1 — Choice of method

Method	Suitable for testing of	To be carried out in accordance with
Hydroxylamine hydrochloride method	Phenolic resins and furan resins (unmodified with urea or melamine resin)	ISO 9397
Sulfite method	Urea resins, melamine resins, furan resins, urea-melamine resins and furan-urea resins	ISO 9020
KCN method	Melamine-phenol resins, urea-phenol resins and urea-melamine-phenol resins	ISO 11402