International Standard ISO 1897/10

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Phenol, *o*-cresol, *m*-cresol, *p*-cresol, cresylic acid and xylenols for industrial use — Methods of test — Part 10 : Determination of dry residue after evaporation on a water bath (Excluding cresylic acid and xylenols)

Phénol, o-crésol, m-crésol, p-crésol, acide crésylique et xylénols à usage industriel — Méthodes d'essai — Partie 10 : Détermination du résidu sec après évaporation sur bain d'eau (Acide crésylique et xylénols exclus)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 1897/10 was developed by Technical Committee ISO/TC 47, *Chemistry*, and was circulated to the member bodies in December 1980.

It has been approved by the member bodies of the following countries :

Austria	India	Poland
Belgium	Ireland	Portugal
China	Italy	Romania
Czechoslovakia	Korea, Dem. P. Rep. of	South Africa, Rep. of
Egypt, Arab Rep. of	Korea, Rep. of	Switzerland
France	Mexico	Thailand
Germany, F. R.	Netherlands	USSR
Hungary	Philippines	

The member body of the following country expressed disapproval of the document on technical grounds :

United Kingdom

This International Standard has also been approved by the International Union of Pure and Applied Chemistry (IUPAC).

It cancels and replaces ISO Recommendation R 1900-1971, of which it constitutes a technical revision.

Printed in Switzerland

INTERNATIONAL STANDARD ISO 1897/10-1982 (E)

Phenol, *o*-cresol, *m*-cresol, *p*-cresol, cresylic acid and xylenols for industrial use — Methods of test — Part 10 : Determination of dry residue after evaporation on a water bath (Excluding cresylic acid and xylenols)

WARNING — Because of the toxic and corrosive properties of these materials and of their vapours (see ISO 1897/1), it is essential that the determination be carried out in a well-ventilated fume cupboard.

1 Scope and field of application

This part of ISO 1897 specifies a method for the determination of the residue on evaporation of phenol, *o*-cresol, *m*-cresol and *p*-cresol for industrial use.

The method is applicable to products having a dry residue after evaporation, greater than or equal to 0,005 % (*m*/*m*).

This document should be read in conjunction with ISO 1897/1 (see the annex).

2 Principle

Evaporation of a test portion on a boiling water bath and drying of the residue in an oven at 105 ± 2 °C for 1 h.

3 Apparatus

Ordinary laboratory apparatus and

3.1 Platinum dish, of capacity about 150 ml.

3.2 Water bath, containing boiling water.

3.3 Electric oven, capable of being maintained at 105 ± 2 °C.

4 Procedure

4.1 Test portion

Dry the dish (3.1) for 1 h in the oven (3.3), maintained at 105 ± 2 °C, allow to cool in a desiccator and weigh it to the nearest 0,000 1 g. Then weigh rapidly and directly, in the weighed dish, to the nearest 0,000 1 g, about 20 g of the sample.

NOTE — If the sample is in the form of a solid crystalline mass or contains crystals, it should be completely melted and thoroughly mixed before the test portion is taken, every precaution being taken to avoid overheating or contamination by moisture.

4.2 Determination

Place the dish and its contents on the boiling water bath (3.2) in a well-ventilated fume cupboard and evaporate the test portion (4.1) to dryness

Remove the dish from the water bath, wipe the outside with a tissue and continue heating in the oven (3.3), maintained at 105 ± 2 °C, for 1 h. Remove the dish from the oven, allow it to cool to ambient temperature in a desiccator and weigh rapidly to the nearest 0,000 1 g.

5 Expression of results

The dry residue after evaporation, expressed as a percentage by mass, is given by the formula

$$\frac{(m_2 - m_1)}{m_0} \times 100$$

where

m_0 is the mass, in grams, of the test portion (4.1);

m_1 is the mass, in grams, of the empty dish;

m_2 is the mass, in grams, of the dish containing the residue.

Express the result to the nearest 0,001 % (*m*/*m*).

Annex

ISO Publications relating to (A) phenol, (B) *o*-cresol, (C) *m*-cresol, (D) *p*-cresol, (E) cresylic acid, and (F) xylenols, for industrial use

Applicability						
A[1]	B[2]	C	D[2]	E	F	ISO 1897/1 — General.
A	B	C	D	E	F	ISO 1897/2 — Determination of water — Dean and Stark method.
A	B	C	D	E	F	ISO 1897/3 — Determination of neutral oils and pyridine bases.
A	B	C	D			ISO 1897/4 — Visual test for impurities insoluble in sodium hydroxide solution.
A						ISO 1897/5 — Visual test for impurities insoluble in water.
				E	F	ISO 1897/6 — Test for absence of hydrogen sulphide.
				E	F	ISO 1897/7 — Measurement of colour.
				E	F	ISO 1897/8 — Determination of *o*-cresol content.
				E		ISO 1897/9 — Determination of *m*-cresol content.
A	B	C	D			ISO 1897/10 — Determination of dry residue after evaporation on a water bath.
A	B	C	D			ISO 1897/11 — Determination of crystallizing point.
				E	F	ISO 1897/12 — Determination of distillation range.
				E	F	ISO 1897/13 — Determination of residue on distillation.
A[3]						ISO 1904 — Determination of phenols content — Bromination method.
A	B	C	D			ISO 2208 — Determination of crystallizing point after drying with a molecular sieve.

1) In the case of phenol, the determination of density at 20 °C specified in ISO 1897/1 is applicable only to liquefied phenol.

2) The determination of density at 20 °C specified in ISO 1897/1 is not applicable to these products.

3) Applicable only to liquefied phenol.