H-20-03
H-91-13

INTERNATIONAL STANDARD ISO 1897/I

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Phenol, *o*-cresol, *m*-cresol, *p*-cresol, cresylic acid and xylenols for industrial use — Methods of test — Part I : General

Phénol, o-crésol, m-crésol, p-crésol, acide crésylique et xylénols à usage industriel — Méthodes d'essai — Partie I : Généralités

First edition — 1977-04-15

UDC 661 : 547.562/563 : 543.812 **Ref. No. ISO 1897/I-1977 (E)**

Descriptors : phenols, phenol, cresols, xylenol, chemical analysis, determination of content, water, volumetric analysis, Karl Fischer reagent.

Price based on 2 pages

ISO 1897/I-1977 (E)

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.

Prior to 1972, the results of the work of the technical committees were published as ISO Recommendations; these documents are in the process of being tranformed into International Standards. As part of this process, Technical Committee ISO/TC 47, *Chemistry*, has reviewed ISO Recommendation R 1897-1971 and found it technically suitable for transformation. International Standard ISO 1897 therefore replaces ISO Recommendation R 1897-1971, to which it is technically identical.

ISO Recommendation R 1897 had been approved by the member bodies of the following countries :

Australia	India	South Africa, Rep. of
Belgium	Israel	Spain
Chile	Italy	Switzerland
Czechoslovakia	Japan	Thailand
Egypt, Arab Rep. of	Netherlands	Turkey
France	New Zealand	United Kingdom
Germany	Poland	U.S.S.R.
Greece	Portugal	
Hungary	Romania	

No member body had expressed disapproval of the Recommendation.

The member body of the following country disapproved the transformation of the Recommendation into an International Standard :

Netherlands

Printed in Switzerland

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Phenol, *o*-cresol, *m*-cresol, *p*-cresol, cresylic acid and xylenols for industrial use — Methods of test — Part I : General

WARNING — These materials burn the skin and can be absorbed into the system through the skin. It is essential for the sampler to wear protective gloves, for example of polyvinyl chloride, and also a face shield. Inhalation of the vapours from hot material is to be avoided.

Phenols are extremely hygroscopic, and care should be taken to avoid contamination with atmospheric or other moisture.

1 SCOPE AND FIELD OF APPLICATION

This part of ISO 1897 gives general instructions relating to methods of test for phenol, *o*-cresol, *m*-cresol, *p*-cresol, cresylic acid and xylenols for industrial use.

It also specifies the procedure to be used for the determination of water content by the Karl Fischer method.

NOTE — Another procedure for the determination of water content may be used as an alternative; it is based on the Dean and Stark method and is the subject of part II (see the annex). More reproducible results are likely to be obtained by the Karl Fischer method; it is therefore preferable to use this method, especially if the water content is less than 0,5 % (*m/m*).

In addition, this part specifies the method to be used for the determination of density at 20 °C of liquefied phenol[1], *m*-cresol, cresylic acid and xylenols for industrial use.

The present list of parts of ISO 1897 and other ISO publications relating to the above-mentioned products is given in the annex.

2 REFERENCES

ISO 758, *Liquid chemical products for industrial use — Determination of density at 20 °C.*

ISO 760, *Determination of water — Karl Fischer method.*

ISO . . ., *Solid chemical products for industrial use — Sampling.*[2]

ISO . . ., *Liquid chemical products for industrial use — Sampling.*[2]

3 SAMPLING AND PREPARATION OF TEST SAMPLE

3.1 Sampling

Sample in accordance with ISO . . . or ISO . . ., depending on whether the product is solid or liquid. Additionally, the laboratory sample shall have a volume of not less than 500 ml (for phenol and cresols) or 1 000 ml (for cresylic acid and xylenols). It shall be stored in a clean, dry, dark-coloured, airtight, glass-stoppered bottle of such a size that it is nearly filled by the sample. If it has been necessary to seal this bottle, care shall be taken to avoid contaminating the contents in any way.

3.2 Preparation of test sample

If the laboratory sample is in the form of a solid crystalline mass or contains crystals, it shall be completely melted and thoroughly mixed immediately before taking the test sample. The test sample shall be similarly treated immediately before taking the test portion for carrying out the tests specified in certain other parts of ISO 1897. Precautions shall be taken against overheating or contamination by moisture.

4 DETERMINATION OF WATER — KARL FISCHER METHOD (applicable only to liquefied phenol, *m*-cresol,

Use any of the methods specified in ISO 760, on a test portion of about 10 g, weighed to the nearest 0,01 g.

1) A mixture of about 80 % phenol for industrial use and 20 % water (*V/V*) is commonly called "liquefied phenol".

2) In preparation.

5 DETERMINATION OF DENSITY AT 20 °C (applicable only to liquefied phenol, *m*-cresol, cresylic acid and xylenols)

Use the method specified in ISO 758.

6 TEST REPORT

The test report for each determination shall include the following particulars :

a) the reference of the method used;

b) the results and the method of expression used;

c) any unusual feature noted during the determination;

d) any operation not included in the relevant part of ISO 1897 or in the other International Standards to which reference is made, or regarded as optional.

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/I — General.
A	B	C	D	E	F	ISO 1897/II — Determination of water — Dean and Stark method.
A	B	C	D	E	F	ISO 1897/III — Determination of neutral oils and pyridine bases.
A	B	C	D			ISO 1897/IV — Visual test for impurities insoluble in sodium hydroxide solution.
A						ISO 1897/V — Visual test for impurities insoluble in water.
				E	F	ISO 1897/VI — Test for absence of hydrogen sulphide.
				E	F	ISO 1897/VII — Measurement of colour.
				E	F	ISO 1897/VIII — Determination of *o*-cresol content.
				E		ISO 1897/IX — Determination of *m*-cresol content.
A	B	C	D			ISO/R 1900 — Determination of residue on evaporation.
A	B	C	D			ISO/R 1901 — Determination of crystallizing point.
A[3]						ISO 1904 — Determination of phenols content — Bromination method.
				E	F	ISO/R 1906 — Determination of distillation range.
				E	F	ISO/R 1907 — Determination of residue on distillation.
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/I is applicable only to liquefied phenol.

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

3) Applicable only to liquefied phenol.