INTERNATIONAL STANDARD 1394

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Liquid halogenated hydrocarbons for industrial use — Determination of cloud point

Hydrocarbures halogénés liquides à usage industriel — Détermination du point de trouble

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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.

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 transformed into International Standards. As part of this process, Technical Committee ISO/TC 47, *Chemistry,* has reviewed ISO Recommendation R 1394-1970 and found it technically suitable for transformation. International Standard ISO 1394 therefore replaces ISO Recommendation R 1394-1970, to which it is technically identical.

ISO Recommendation R 1394 had been approved by the member bodies of the following countries :

Austria	Iran	Spain
Belgium	Israel	Sweden
Chile	Italy	Switzerland
Czechoslovakia	Netherlands	Thailand
Egypt, Arab Rep. of	New Zealand	Turkey
France	Peru	United Kingdom
Germany	Portugal	U.S.S.R.
Hungary	Romania	
India	South Africa, Rep. of	

No member body had expressed disapproval of the Recommendation.

No member body disapproved the transformation of the Recommendation into an International Standard.

Printed in Switzerland

Liquid halogenated hydrocarbons for industrial use — Determination of cloud point

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a simple method for detecting the presence of certain impurities (generally water) which, dissolved in halogenated hydrocarbons at ambient temperature, cause the formation of cloudiness when the product is cooled to a sufficiently low temperature.

2 REFERENCE

ISO 2209, *Liquid halogenated hydrocarbons for industrial use — Sampling.*

3 PRINCIPLE

Determination of the temperature at which cloudiness appears in the clear sample, when it is gradually cooled under specified conditions.

4 APPARATUS

Ordinary laboratory apparatus and

4.1 Cooling bath, consisting of a 1 000 ml beaker containing a cooling mixture (generally acetone and solid carbon dioxide) and a suitable thermometer.

4.2 Conical flask, of capacity 100 ml, with a ground neck.

4.3 Thermometer, fitted with a ground glass joint that fits the flask (4.2), graduated in 0,5 °C and with a range suitable for the halogenated hydrocarbon in question.

4.4 Electric oven, capable of being controlled at approximately 130 °C.

5 PROCEDURE

Dry the vessels used to make this determination at approximately 130 °C in the oven (4.4) and keep them in a desiccator.

Place in the conical flask (4.2) a volume of the laboratory sample, prepared according to ISO 2209, sufficient to completely immerse the bulb of the thermometer (4.3), when the latter is in position. Then close the flask with the thermometer fitted with a ground glass joint.

Place the assembly in the cooling bath (4.1), stirring continuously. Proceed in such a way as to cause the temperature of the sample, as read on the thermometer, to fall by 3 to 4 °C/min.

From time to time observe the sample and note the temperature at which cloudiness appears. Then remove the flask from the cooling bath, allow the sample to reheat gradually, and note the temperature at which the cloudiness disappears.

Then regulate and maintain the temperature of the cooling mixture at 2 °C below the mean value between the two temperatures previously read on the thermometer. Again immerse the flask (4.2), containing the sample, in the bath, stirring continuously. Observe the sample during the slow temperature fall on the thermometer and note for the last time the temperature at which a lasting cloudiness appears.

6 EXPRESSION OF RESULTS

Indicate, in degrees Celsius, the last temperature observed in this way.

7 TEST REPORT

The test report shall include the following particulars :

a) the reference of the method used;

b) the results and the method of expression used;

c) any unusual features noted during the determination;

d) any operations not included in this International Standard or in the International Standards to which reference is made, or regarded as optional.

ANNEX

OTHER ISO PUBLICATIONS RELATING TO HALOGENATED HYDROCARBONS FOR INDUSTRIAL USE

ISO 1393 – Determination of acidity – Titrimetric method [liquids].

ISO 2209 – Sampling [liquids].

ISO 2210 – Determination of residue on evaporation [liquids].

ISO 3427 – Taking of a sample [liquefied gases].