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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1852

HIGHER ALCOHOLS FOR INDUSTRIAL USE

TEST FOR COLOUR WITH SULPHURIC ACID

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Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1852, *Higher alcohols for industrial use – Test for colour with sulphuric acid*, was drawn up by Technical Committee ISO/TC 47, *Chemistry*, the Secretariat of which is held by the Ente Nazionale Italiano di Unificazione (UNI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1852, which was circulated to all the ISO Member Bodies for enquiry in April 1969. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	India	Romania
Austria	Iran	South Africa, Rep. of
Belgium	Israel	Spain
Brazil	Italy	Switzerland
Czechoslovakia	Netherlands	Turkey
France	New Zealand	U.A.R.
Germany	Peru	United Kingdom
Greece	Poland	U.S.S.R.
Hungary	Portugal	

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

ISO Recommendation | R 1852 | November 1970

HIGHER ALCOHOLS FOR INDUSTRIAL USE

TEST FOR COLOUR WITH SULPHURIC ACID

1. SCOPE

This ISO Recommendation describes a method of test for colour with sulphuric acid, applicable to C_6 to C_{13} alcohols for industrial use.

2. PRINCIPLE

Treatment of the test portion with concentrated sulphuric acid, and comparison of the colour developed with an agreed colour standard.

3. REAGENTS

Distilled water or water of equivalent purity should be used in the test.

3.1 *Sulphuric acid*, ρ 1.84 (g/ml), approximately 96 % (m/m) solution.

3.2 *Ethanol*, 95 % (V/V).

4. APPARATUS

Ordinary laboratory apparatus and

4.1 *Round-bottomed flask*, capacity 250 ml, with ground glass stopper.

4.2 *Burette*, capacity 10 ml, adjusted to deliver 5 ml of the sulphuric acid (3.1) at ambient temperature at the rate of 2 drops per second.

4.3 *Two matched flat-based colorimetric tubes*, of approximately 20 mm external diameter and having a graduation mark 100 mm above the base.

5. SAMPLING

Follow the principles given in ISO Recommendation R . . .*.

Place the sample in a clean, dry glass-stoppered bottle of such a size that it is nearly filled up. If it is necessary to seal this bottle, care should be taken to avoid the risk of contamination.

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* Sampling from the consignment of a chemical product will be the subject of a future ISO Recommendation.

6. PROCEDURE

6.1 Cleaning of apparatus

Clean the flask (4.1), a 100 ml graduated cylinder, a reflux condenser and two colorimetric tubes (4.3) carefully, rinsing them with the sulphuric acid (3.1) and with water, and drying with ethanol (3.2).

6.2 Test portion

Measure 75 ml of the laboratory sample using a 100 ml graduated cylinder.

6.3 Test

Rinse the flask (4.1) with the test sample and drain well. Transfer to the flask the test portion (6.2) contained in the graduated cylinder. Allow to cool for exactly 5 minutes in an ice-water bath.

Keeping the flask immersed in the ice-water bath and swirling it continuously, add rapidly, from the burette (4.2), 5.0 ml of the sulphuric acid (3.1), at the rate of 2 drops per second. *Agitate vigorously and continuously* during this addition to ensure that the temperature in the flask does not rise above 20 °C. The use of a magnetic stirrer with a glass coated magnet is a convenient way of doing this. Stopper the flask and maintain it in the ice-water bath for a total of exactly 3 minutes from the time of the end of the addition of the acid.

At the end of this time, fit the reflux condenser to the flask and transfer quickly to a boiling-water bath. Allow the flask to remain in the bath for 3 hours.

Cool the material in the flask, then transfer it to one of a pair of matched colorimetric tubes (4.3) previously cleaned as described in clause 6.1. Compare the colour of the material with that of the agreed colour standard contained in the other tube.

7. EXPRESSION OF RESULTS

Report the colour obtained from the sample as greater than, equal to, or less than that of the agreed colour standard.

8. TEST REPORT

The test report should give 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 operation not included in this ISO Recommendation or regarded as optional.