

# ISO

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

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ISO 1843 / I*

## ISO RECOMMENDATION R 1843

HIGHER ALCOHOLS FOR INDUSTRIAL USE  
MEASUREMENT OF COLOUR IN HAZEN UNITS

1st EDITION  
November 1970

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## BRIEF HISTORY

The ISO Recommendation R 1843, *Higher alcohols for industrial use – Measurement of colour in Hazen units*, 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. 1843 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	Hungary	Romania
Austria	India	South Africa, Rep. of
Belgium	Iran	Spain
Brazil	Italy	Switzerland
Czechoslovakia	New Zealand	Turkey
France	Peru	U.A.R.
Germany	Poland	United Kingdom
Greece	Portugal	U.S.S.R.

The following Member Body opposed the approval of the Draft :

Netherlands

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

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HIGHER ALCOHOLS FOR INDUSTRIAL USE  
MEASUREMENT OF COLOUR IN HAZEN UNITS

1. SCOPE

This ISO Recommendation describes a method for measuring the colour in Hazen units of C<sub>6</sub> to C<sub>13</sub> alcohols for industrial use.

2. PRINCIPLE

Comparison of the colour of the sample with that of colour standards and expression of the result in terms of Hazen (platinum-cobalt) colour units.

NOTE. — The Hazen colour unit is defined as the colour of a solution containing 1 part per million of platinum in the form of chloroplatinic acid, in the presence of 2 parts per million of cobalt (II) chloride hexahydrate.

3. REAGENTS

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

3.1 *Cobalt (II) chloride, hexahydrate.*

3.2 *Hydrochloric acid,  $\rho$  1.19 (g/ml), approximately 38 % (m/m) solution.*

3.3 *Chloroplatinic acid.*

Dissolve 1.000 g of platinum in a small quantity of aqua regia, contained in a glass or porcelain basin, by heating on a boiling water bath. When the metal has dissolved, evaporate the solution to dryness. Add 4 ml of hydrochloric acid (3.2), and again evaporate to dryness. Repeat this operation twice more.

or

3.4 *Potassium chloroplatinate.*

4. APPARATUS

Ordinary laboratory apparatus and

4.1 *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 the bottle, care should be taken to avoid the risk of contamination.

## 6. PREPARATION OF STANDARD COLOUR SOLUTIONS

- 6.1 Dissolve 2.0 g of cobalt (II) chloride (3.1) and either the whole of the chloroplatinic acid (3.3) or 2.490 g of potassium chloroplatinate (3.4) in 200 ml of hydrochloric acid (3.2). Warm if necessary to obtain a clear solution, and after cooling transfer quantitatively to a 2000 ml one-mark volumetric flask. Dilute to the mark and mix. This solution has a colour of 500 Hazen units.
- 6.2 From this solution, prepare a series of standard colour solutions ranging from 0 Hazen colour units upwards, at intervals of 10 units. For each 10 units pipette 5.0 ml of the solution into a 250 ml volumetric flask, dilute to the mark with water and mix. Transfer each standard solution to a storage bottle and keep in the dark. Check the standards at intervals of one month against freshly prepared standards.

## 7. PROCEDURE

Pour into one of the colorimetric tubes (4.1) a quantity of the laboratory sample sufficient to fill it to the graduation mark. Similarly pour the standard colour solution selected into the other tube to the mark. Compare the colour of the sample with that of the standard by looking down the tubes from top to bottom against a white background, taking care to avoid side illumination. Repeat with other colour standards if necessary until the closest match is obtained.

## 8. EXPRESSION OF RESULTS

Report the results to the nearest 10 Hazen colour units.

If the colour of the sample does not match that of any of the colour standards, report if possible an approximate value for colour with an appropriate note. If such an approximation is unobtainable, however, give a description of the colour of the sample.

## 9. 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.

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