

New Edition of ISO Standards for Chemical Tests of Leather ISO 4044:2008 & ISO 4045:2008

The first edition of ISO methods for chemical tests of leather, **ISO 4044:1977 (Leather – Preparation of chemical test samples)** and **ISO 4045:1977 (Leather – Determination of pH)**, which had been using over 30 years were technically revised in February, 2008 by the joint force of CEN Technical Committee CEN/TC 289 (Leather) and IUC Commission, IULTCS to their second edition of **ISO 4044:2008** and **ISO 4045:2008** respectively.



The major differences between the new and old editions are summarized in the following tables.

Section	ISO 4045:2008	ISO 4045:1977
§ 1 Scope	Applicable to all types of leather.	---
§ 2 Normative reference	Additional references to ISO 2418 & ISO 3696.	---
§ 4 Principle	Require the determination of the pH value of a tenfold dilution of the aqueous extract in cases where the pH value obtained is below 4.00 or above 10.00.	---
§ 5.1 Water	Grade 3 in accordance with ISO 3696 .	Having a pH value between 6 and 7 and a conductivity not greater than 2×10^{-6} S/cm at 20°C .
§ 5.2 Buffer solution	Preferable to purchase a commercially available standard buffer solution for measurement as recommended by the pH meter manufacturer	Preferable to purchase a standard buffer solution for measurement. If purchased in concentrated form, the control buffer must be freshly prepared each time
§ 6 Apparatus (Note)	---	All glassware shall be made of resistant glass of low alkali content. It is necessary to check the apparatus carefully before use by a blank test using distilled water. The pH value and conductivity before and after this test shall be within the limits quoted in §5.1. Polyethylene and borosilicate glass have been found suitable.
§ 6.2 pH meter	Shall be calibrated prior to each series of measurements against the buffer solution.	Shall be calibrated at interval against the buffer solution.
§ 6.3 Balance	To an accuracy of 0.1 mg .	To an accuracy of 0.05 g .
§ 6.4 Wide mouthed flask	With capacity of 250 ml .	With capacity of 100 ml .
§ 7 Sampling & Sample Preparation	Sampling in accordance with ISO 2418 . If not possible, details about sampling shall be given in the test report. Two separate samples shall be analyzed .	Samples shall be taken in accordance with ISO ...
§ 8.1 Preparation of the extract	Shake mechanically in the shaker for between 6 h and 6.5 h .	Shake mechanically in the shaker for 6 h .
§ 8.2 Measurement of pH value	pH value shall be determined immediately after stirring with the extract solution at 20 ± 2°C .	pH value shall be determined with the extract solution at 20 ± 1°C .
§ 8.4 Calculation of the difference figure	A new section. Difference figure = pH value of the aqueous extract (§8.2) – pH value of the tenfold dilution of the aqueous extract (§8.3)	---

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Section	ISO 4044:2008	ISO 4044:1977
§ 1 Scope	Applicable to all types of leather.	Applicable to all leather of all types and tannage .
§ 2 Normative reference	A new section.	---
§ 3 Principle	Leather is ground in a cutter mill to form "ground leather" or "leather powder".	Grinding of pieces of leather using a cutter mill.
§4.1 Cutter mill	Use the term " blade "; require perforated sieving plate with 4 mm (± 0.5mm) diameter perforations.	Use the term " knife ", require perforated sieving plate with 4 mm diameter perforations.
§5 Preparation of the test sample	<p>[1st para] Specify that the precise size of the small pieces will be defined by the design of the cutter mill feed system.</p> <p>[4th para] If sample is sufficient, a few small pieces of test leather should be ground and discarded, with the apparatus being cleaned again before proceeding with grinding the main test sample.</p> <p>[5th para] Add the requirement that selection of drying temperature should consider the influence of elevated temperature on the nature of the analyte.</p> <p>[last para] Conditioning of sample shall follow ISO 2419.</p>	<p>Require to make pieces of leather smaller by stamping or cutting into small pieces. The strips should measure about 10 mm.</p> <p>Add a NOTE under § 3 Apparatus requiring mill, screen and catching base shall be thoroughly cleaned every time they have been used.</p> <p>Conditioning shall be done at 20°C and 65% relative humidity for 24 h.</p>

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For enquires or other information on leather testing, please contact STR at:

Email: Chemical.Enquiry@strhk.com / Telephone: 852-29434655 / 29434653

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