

# IULTCS/IUC 8-4

Second edition  
2018-12

---

---

## Leather — Chemical determination of chromic oxide content —

### Part 4: Quantification by inductively coupled plasma (ICP)

*Cuir — Dosage chimique de l'oxyde de chrome —*

*Partie 4: Quantification par plasma à couplage inductif (ICP)*



Reference numbers  
ISO 5398-4:2018(E)  
IULTCS/IUC 8-4:2018(E)

This is a preview of "ISO 5398-4:2018". Click [here](#) to purchase the full version from the ANSI store.



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of "ISO 5398-4:2018". Click here to purchase the full version from the ANSI store.

## Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>vi</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>2</b>
<b>5 Sampling and sample preparation</b> .....	<b>2</b>
<b>6 Reagents</b> .....	<b>2</b>
<b>7 Apparatus</b> .....	<b>2</b>
<b>8 Methods</b> .....	<b>2</b>
8.1 Preparation of analytical solution .....	2
8.1.1 Wet oxidation method .....	2
8.1.2 Microwave digestion or other method of digestion .....	3
8.2 Measurement of the aqueous solution .....	3
8.2.1 General .....	3
8.2.2 Preparation of calibration graph .....	3
8.2.3 Analysis of the test solution .....	3
<b>9 Calculation and expression of results</b> .....	<b>4</b>
<b>10 Test report</b> .....	<b>4</b>
<b>Annex A (informative) Determination of water and other volatile matter</b> .....	<b>5</b>
<b>Annex B (informative) Suitable ICP equipment</b> .....	<b>6</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by the Chemical Tests Commission of the International Union of Leather Technologists and Chemists Societies (IUC Commission, IULTCS) in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 289, *Leather*, the secretariat of which is held by UNI, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

It is based on IUC 8, published in *J. Soc. Leather Tech. Chem.*, **49**, p. 17, 1965, and declared an official method of the IULTCS in 1965.

IULTCS, originally formed in 1897, is a world-wide organization of professional leather societies to further the advancement of leather science and technology. IULTCS has three Commissions, which are responsible for establishing international methods for the sampling and testing of leather. ISO recognizes IULTCS as an international standardizing body for the preparation of test methods for leather.

This second edition cancels and replaces the first edition (ISO 5398-4:2007), which has been technically revised. The main changes compared to the previous edition are as follows:

- the title has changed to “inductively coupled plasma (ICP)” to include more than just the “ICP-OES” type equipment;
- [Clause 5](#) now refers to ISO 4044 for preparing the sample rather than grinding the leather;
- the description of additional suitable ICP equipment (ICP-MS) has been included in a new subclause [7.3](#);
- the previous subclause 8.2.1 describing suitable ICP equipment has been moved to a new informative [Annex B](#);
- the text has been revised for editorial corrections.

A list of all parts in the ISO 5398 series can be found on the ISO website.

This is a preview of "ISO 5398-4:2018". Click here to purchase the full version from the ANSI store.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

The ISO 5398 series comprises four parts, each describing methods suitable for the determination of the chromic oxide content in leather. The different techniques have been described to reflect the variations in industrial practice compared with the more sensitive analytical equipment available for test laboratories. Variations also exist in the range of chromic oxide that the methods are deemed suitable to quantify.

This document describes a technique that is suitable for determining chromium more precisely than those described in ISO 5398-1 and ISO 5398-2. It requires the use of sophisticated analytical equipment, such as inductively coupled plasma (ICP).