

---

---

**Fertilizers and soil conditioners —  
Water soluble fertilizer — General  
requirements**

*Matières fertilisantes — Engrais soluble dans l'eau — Exigences  
générales*

Sample Document

get full document from [standards.iteh.ai](https://standards.iteh.ai)



Reference number  
ISO 18645:2016(E)

© ISO 2016

# Sample Document

get full document from [standards.iteh.ai](https://standards.iteh.ai)



## **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2016, Published in Switzerland

All rights reserved. Unless otherwise specified, 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  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
[copyright@iso.org](mailto:copyright@iso.org)  
[www.iso.org](http://www.iso.org)

# Contents

Page

|                                                                                      |           |
|--------------------------------------------------------------------------------------|-----------|
| <b>Foreword</b>                                                                      | <b>iv</b> |
| <b>1 Scope</b>                                                                       | <b>1</b>  |
| <b>2 Normative references</b>                                                        | <b>1</b>  |
| <b>3 Requirement</b>                                                                 | <b>2</b>  |
| <b>4 Test method</b>                                                                 | <b>3</b>  |
| 4.1 Visual inspection for foreign matter                                             | 3         |
| 4.2 Determination of nitrogen, phosphorus and potassium contents                     | 3         |
| 4.3 Determination of calcium, magnesium and sulphur contents                         | 3         |
| 4.4 Determination of molybdenum, boron and manganese, zinc, copper and iron contents | 4         |
| 4.5 Determination of the chelated fraction of micro-nutrients                        | 4         |
| 4.6 Determination of the mass fraction of water insoluble matter                     | 4         |
| 4.6.1 Principle                                                                      | 4         |
| 4.6.2 Reagents and materials                                                         | 4         |
| 4.6.3 Apparatus                                                                      | 4         |
| 4.6.4 Ambient temperature controlled at $(20 \pm 10) ^\circ\text{C}$                 | 4         |
| 4.6.5 Test procedure                                                                 | 4         |
| 4.6.6 Calculation of the test result                                                 | 5         |
| 4.6.7 Tolerance                                                                      | 5         |
| 4.7 Determination of the pH value                                                    | 5         |
| 4.8 Determination of arsenic, cadmium, lead, chromium and mercury contents           | 5         |
| 4.9 Determination of biuret content                                                  | 5         |
| 4.10 Determination of mass fraction of chloride                                      | 5         |
| <b>5 Sampling and preparation of test sample</b>                                     | <b>5</b>  |
| 5.1 Sampling method                                                                  | 5         |
| 5.1.1 Products in bags                                                               | 5         |
| 5.1.2 Products in bulk                                                               | 5         |
| 5.2 Reduction of samples                                                             | 6         |
| 5.3 Test sample preparation                                                          | 6         |
| <b>6 Marking and labelling</b>                                                       | <b>6</b>  |
| <b>7 Package, transport and storage</b>                                              | <b>7</b>  |
| <b>Bibliography</b>                                                                  | <b>8</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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 134, *Fertilizers and soil conditioners*.

get full document from [standards.iteh.ai](http://standards.iteh.ai)

# Fertilizers and soil conditioners — Water soluble fertilizer — General requirements

## 1 Scope

This International Standard specifies the requirements for testing methods, sampling and preparation of test sample, marking and labelling, as well as package, transport, and storage of water soluble fertilizers.

This International Standard is applicable to water soluble fertilizers which are completely soluble in water and are suitable for fertigation and sprinkling irrigation, as well as for foliar application (foliar feeding).

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 5315, *Fertilizers — Determination of total nitrogen content — Titrimetric method after distillation*

ISO 6353-1:1982, *Reagents for chemical analysis — Part 1: General test methods*

ISO 6598, *Fertilizers — Determination of phosphorus content — Quinoline phosphomolybdate gravimetric method*

ISO 7409, *Fertilizers — Marking — Presentation and declarations*

ISO 7410, *Fertilizers and soil conditioners — Final samples — Practical arrangements*

ISO 7742:1988, *Solid fertilizers — Reduction of samples*

ISO 8633, *Solid fertilizers — Simple sampling method for small lots*

ISO 17318, *Fertilizers and soil conditioners — Determination of arsenic, cadmium, chromium, lead and mercury contents*

ISO 17319, *Fertilizers and soil conditioners — Determination of water-soluble potassium content — Potassium tetraphenylborate gravimetric method*

ISO 18643, *Fertilizers and soil conditioners — Determination of biuret content of urea-based fertilizers — HPLC method*

EN 16195, *Fertilizers — Determination of chlorides in the absence of organic material*

CEN/TS 16196, *Fertilizers — Manganometric determination of extracted calcium following precipitation in the form of oxalate*

EN 16198, *Fertilizers — Determination of magnesium by complexometry*

EN 13366, *Fertilizers — Treatment with a cation exchange resin for the determination of the chelated micro-nutrient content and of the chelated fraction of micro-nutrients*

EN 13368-1, *Fertilizers — Determination of chelating agents in fertilizers by chromatography — Part 1: Determination of EDTA, HEEDTA and DTPA by ion chromatography*