

# ILNAS

Institut luxembourgeois de la normalisation  
de l'accréditation, de la sécurité et qualité  
des produits et services

## ILNAS-EN ISO 18363-4:2021

### **Animal and vegetable fats and oils - Determination of fatty-acid-bound chloropropanediols (MCPDs) and glycidol by GC/MS - Part 4: Method**

Corps gras d'origines animale et végétale  
- Détermination des esters de  
chloropropanediols (MCPD) et d'acides  
gras et des esters de glycidol et d'acides

Tierische und pflanzliche Fette und Öle -  
Bestimmung von fettsäuregebundenem  
Chlorpropandiol (MCPD) und Glycidol  
mittels GC/MS - Teil 4: Verfahren mittels

## National Foreword

This European Standard EN ISO 18363-4:2021 was adopted as Luxembourgish Standard ILNAS-EN ISO 18363-4:2021.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

## THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

ILNAS-EN ISO 18363-4:2021  
EUROPEAN STANDARD EN ISO 18363-4  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

August 2021

ICS 67.200.10

English Version

Animal and vegetable fats and oils - Determination of fatty-acid-bound chloropropanediols (MCPDs) and glycidol by GC/MS - Part 4: Method using fast alkaline transesterification and measurement for 2-MCPD, 3-MCPD and glycidol by GC-MS/MS (ISO 18363-4:2021)

Corps gras d'origines animale et végétale -  
Détermination des esters de chloropropanediols (MCPD) et d'acides gras et des esters de glycidol et d'acides gras par CPG/SM - Partie 4: Méthode par transestérification alcaline rapide et mesure pour le 2-MCPD, le 3-MCPD et le glycidol par CPG-SM/SM (ISO 18363-4:2021)

Tierische und pflanzliche Fette und Öle - Bestimmung von fettsäuregebundenem Chlorpropandiol (MCPD) und Glycidol mittels GC/MS - Teil 4: Verfahren mittels schneller alkalischer Umesterung und Messung für 2-MCPD, 3-MCPD und Glycidol (ISO 18363-4:2021)

This European Standard was approved by CEN on 26 July 2021.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

## Contents

	Page
European foreword.....	3

## European foreword

This document (EN ISO 18363-4:2021) has been prepared by Technical Committee ISO/TC 34 "Food products" in collaboration with Technical Committee CEN/TC 307 "Oilseeds, vegetable and animal fats and oils and their by-products - Methods of sampling and analysis" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2022, and conflicting national standards shall be withdrawn at the latest by February 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN websites.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Endorsement notice

The text of ISO 18363-4:2021 has been approved by CEN as EN ISO 18363-4:2021 without any modification.

First edition  
2021-08

---

---

---

**Animal and vegetable fats and oils —  
Determination of fatty-acid-bound  
chloropropanediols (MCPDs) and  
glycidol by GC/MS —**

**Part 4:  
Method using fast alkaline  
transesterification and measurement  
for 2-MCPD, 3-MCPD and glycidol by  
GC-MS/MS**

*Corps gras d'origines animale et végétale — Détermination des  
esters de chloropropanediols (MCPD) et d'acides gras et des esters de  
glycidol et d'acides gras par CPG/SM —*

*Partie 4: Méthode par transestérification alcaline rapide et mesure  
pour le 2-MCPD, le 3-MCPD et le glycidol par CPG-SM/SM*



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2021

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  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
<b>Foreword</b>	<b>iv</b>
<b>Introduction</b>	<b>v</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 Reagents</b>	<b>2</b>
5.1 General	2
5.2 Standard and reference compounds	2
5.3 Standard solutions	3
5.3.1 General	3
5.3.2 Stock solutions	3
5.3.3 Working solutions	3
5.4 Other reagents	4
5.5 Reagent solutions	4
<b>6 Apparatus</b>	<b>5</b>
<b>7 Sample and storage</b>	<b>5</b>
7.1 Sampling	5
7.2 Preparation of the test sample	5
7.3 Storage conditions	6
<b>8 Procedure</b>	<b>6</b>
8.1 Test sample preparation	6
8.2 Preparation of the calibration curve	7
8.3 Gas chromatography and mass spectrometry settings	7
<b>9 Expression of results</b>	<b>8</b>
9.1 General	8
9.2 Quantification of 2-MCPD- and 3-MCPD esters	8
9.3 Quantification of glycidyl esters	10
9.4 Quality control	12
<b>10 Notes</b>	<b>13</b>
<b>11 Precision</b>	<b>14</b>
11.1 General	14
11.2 Repeatability	14
11.3 Between-day reproducibility	14
<b>Annex A (normative) Supporting tables</b>	<b>15</b>
<b>Annex B (informative) Statistical results of the ISO collaborative study</b>	<b>17</b>
<b>Annex C (informative) Chromatograms</b>	<b>21</b>
<b>Bibliography</b>	<b>23</b>