



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

ILNAS-EN ISO 4259-4:2022

Petroleum and related products - Precision of measurement methods and results - Part 4: Use of statistical control charts to validate 'in-

Produits pétroliers et connexes - Fidélité
des méthodes de mesure et de leurs
résultats - Partie 4: Utilisation de cartes
de contrôle statistique pour valider l'état

Mineralölerzeugnisse - Präzision von
Messverfahren und Ergebnissen - Teil 4:
Verwendung von Kontrollkarten zur
Validierung des Status der statistischen

06/2022



National Foreword

This European Standard EN ISO 4259-4:2022 was adopted as Luxembourgish Standard ILNAS-EN ISO 4259-4:2022.

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 4259-4:2022

EUROPEAN STANDARD **EN ISO 4259-4**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2022

ICS 75.080

English Version

Petroleum and related products - Precision of measurement methods and results - Part 4: Use of statistical control charts to validate 'in-statistical-control' status for the execution of a standard test method in a single laboratory (ISO 4259-4:2021, Corrected version 2023-10)

Produits pétroliers et connexes - Fidélité des méthodes de mesure et de leurs résultats - Partie 4: Utilisation de cartes de contrôle statistique pour valider l'état 'sous maîtrise statistique' pour l'exécution d'une méthode d'essai normalisée dans un seul laboratoire (ISO 4259-4:2021, Version corrigée 2023-10)

Mineralölerzeugnisse - Präzision von Messverfahren und Ergebnissen - Teil 4: Verwendung von Kontrollkarten zur Validierung des Status der statistischen Kontrolle bei der Durchführung von genormten Prüfverfahren in einem einzelnen Labor (ISO 4259-4:2021, korrigierte Fassung 2023-10)

This European Standard was approved by CEN on 30 November 2021.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 15 November 2023.

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, Türkiye 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 4259-4:2022) has been prepared by Technical Committee ISO/TC 28 "Petroleum and related products, fuels and lubricants from natural or synthetic sources" in collaboration with Technical Committee CEN/TC 19 "Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin" the secretariat of which is held by NEN.

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 December 2022, and conflicting national standards shall be withdrawn at the latest by December 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 website.

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 4259-4:2021, Corrected version 2023-10 has been approved by CEN as EN ISO 4259-4:2022 without any modification.

**Petroleum and related products —
Precision of measurement methods
and results —**

**Part 4:
Use of statistical control charts to
validate 'in-statistical-control' status
for the execution of a standard test
method in a single laboratory**

*Produits pétroliers et connexes — Fidélité des méthodes de mesure et
de leurs résultats —*

*Partie 4: Utilisation de cartes de contrôle statistique pour valider
l'état 'sous maîtrise statistique' pour l'exécution d'une méthode
d'essai normalisée dans un seul laboratoire*



**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
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms, definitions, symbols and abbreviated terms	1
3.1 Specific terms and definitions	2
3.2 Symbols and abbreviated terms.....	2
4 Statistical control in the execution of a standard test method by a laboratory	3
4.1 General.....	3
4.2 Control chart description.....	4
4.2.1 General	4
4.2.2 I- and MR-charts	4
4.2.3 I-chart sensitivity enhancement strategy	4
4.2.4 In-statistical-control conditions	5
4.3 Control chart work process.....	5
4.3.1 General	5
4.3.2 Stage 1 of control chart work process.....	5
4.3.3 Stage 2 of control chart work process.....	9
4.4 QC material batch change transition	11
4.4.1 General	11
4.4.2 Procedure 1, concurrent testing	12
4.4.3 Procedure 2, Q-chart	12
4.4.4 Procedure 3, dynamically updated I-chart with EWMA	12
5 Guidance for insufficient variation or non-normal data	13
5.1 General requirement	13
5.2 How to deal with insufficient variation or non-normal data	13
5.2.1 Insufficient variation.....	13
5.2.2 Non-normal data.....	14
Annex A (informative) Details of the control chart work process	15
Annex B (normative) Check procedures	34
Bibliography	36