



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

ILNAS-EN 15522-1:2023

**Oil spill identification - Petroleum and
petroleum related products - Part 1:
Sampling**

Identification des pollutions pétrolières -
Pétrole et produits pétroliers - Partie 1 :
Échantillonnage

Identifizierung von Ölverschmutzungen -
Rohöl und Mineralölerzeugnisse - Teil 1:
Probenahme

03/2023



National Foreword

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Oil spill identification - Petroleum and petroleum related products - Part 1: Sampling

Identification des pollutions pétrolières - Pétrole et produits pétroliers - Partie 1 : Échantillonnage

Identifizierung von Ölverschmutzungen - Rohöl und Mineralölerzeugnisse - Teil 1: Probenahme

This European Standard was approved by CEN on 25 December 2022.

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European foreword

This document (EN 15522-1:2023) has been prepared by 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of an identical text or by endorsement, at the latest by September 2023, and conflicting national standards shall be withdrawn at the latest by September 2023.

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.

This document supersedes CEN/TR 15522-1:2006.

In comparison with the previous edition CEN/TR 15522-1:2006, the following technical modifications have been made:

- added another design for a helicopter sampling device as well as some less recommended devices;
- removed ship designs, because this is only relevant for skilled sample takers that should know where to sample on a ship.

EN 15522 is composed of two parts that describe the following:

- Part 1 on sampling, describing good sampling practice, detailing sampling equipment, sampling techniques and the handling of oil samples prior to their arrival at the forensic laboratory;
- Part 2 giving the analytical method, which covers the general concepts and laboratory procedures of oil spill identification, analytical techniques, data processing, data treatment, interpretation/evaluation and reporting of results.

A list of all parts in the EN 15522 series can be found on the CEN website.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Türkiye and the United Kingdom.

Introduction

This document is composed of two parts that describe the following:

- Part 1 on sampling, describing good sampling practice, detailing sampling equipment, sampling techniques and the handling of oil samples prior to their arrival at the forensic laboratory;
- Part 2 giving the analytical method, which covers the general concepts and laboratory procedures of oil spill identification, analytical techniques, data processing, data treatment and interpretation/evaluation and reporting of results.

This document specifies a forensic method for characterizing and identifying the source of oils spills in the environment resulting from accidents or intentional discharges. The method may be used in support of the legal process for prosecuting offenders. This method is based on the experience gained with its former publications over the years (see [1]).

Where an oil pollution incident has occurred, samples should be collected from both the spill and, wherever possible, the potential source of the pollutant, e.g. ship, shore side storage tank, pipeline or vehicle, in order to assist in the identification or confirmation of the source of the spill.

The aim of this document is to give guidance on the current best practice for taking such samples.

Part 1 of EN 15522 is meant to provide general guidelines for legal oil sampling¹. It does not contain details relating to all types of spill situation, however, by following these guidelines it should be possible to collect and provide legally valid samples that can be used in the process of identifying or confirming the source of the spill.

The issues addressed only cover the mechanics of sample collection. The command and control that may be put in place during incident response, the authorities who may request sample collection and the individuals who have the authority to collect samples, will vary from country to country and as a consequence these issues are not addressed.

¹ Legal sampling (according to Interpol Pollution Crime Forensic Investigation Manual [2]): sampling that has been conducted in such a way that the results of its analysis can be used in a court of law. Procedures are followed to prove the chain-of-custody of the samples and to prove that they have not been tampered with.

1 Scope

This document provides guidance on taking and handling samples related to oil spill identification in legal proceedings. Guidance is given on obtaining samples from both the spill and its potential source.

Preservation of evidence is an essential part of legal procedures and this document presents appropriate oil sampling procedures.

WARNING — The use of this document can involve hazardous materials, operations and equipment.

This document does not purport to address all of the safety problems associated with its use. It is the responsibility of users of this document to take appropriate measures to ensure the safety and health of personnel prior to the application of the standard, and to determine the applicability of any other restrictions for this purpose.

IMPORTANT — Most countries have teams with specialists trained in sampling on board of ships. Do not take unnecessary risks, seek assistance from such teams where available.

NOTE For the sake of clarity, the word 'oil' is used throughout this document. It can equally refer to crude oil, a petroleum product or mixtures of such.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15522-2:2023, *Oil spill identification — Petroleum and petroleum products — Part 2: Analytical method and interpretation of results*

EN ISO 3170, *Petroleum liquids — Manual sampling (ISO 3170)*

3 Terms, definitions and abbreviations

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1 Terms and definitions

3.1.1

chain of custody

practice of ensuring security of the sample so that no one has an opportunity to tamper with or otherwise alter the sample or the results

Note 1 to entry: It includes chronological documentation that records the sequence of sample handling including sampling, sealing, storage, transfer, analysis and disposal to ensure that only documented sample handlers have direct access to the samples.

3.1.2

sample heterogeneity

non-representative or non-homogenous character of samples caused for example by variable degrees of mixing within a tank or oil slick