



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 12457-4:2002

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**CHARACTERISATION OF WASTE -
LEACHING - COMPLIANCE TEST FOR
LEACHING OF GRANULAR WASTE
MATERIALS AND SLUDGES - PART 4: ONE
STAGE BATCH TEST AT A LIQUID TO SOLID
RATIO OF 10 L/KG FOR MATERIALS WITH
PARTICLE SIZE BELOW 10 MM (WITHOUT
OR WITH SIZE REDUCTION)**

National Standards
Authority of Ireland
Dublin 9
Ireland

Tel: (01) 807 3800
Tel: (01) 807 3838

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English version

Characterisation of waste - Leaching - Compliance test for leaching of granular waste materials and sludges - Part 4: One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 10 mm (without or with size reduction)

Caractérisation des déchets - Lixiviation - Essai de conformité pour la lixiviation des déchets fragmentés et des boues - Partie 4: Essai en bûchée unique avec un rapport liquide/solide de 10 l/kg et une granularité inférieure à 10 mm (sans ou avec réduction de la granularité)

Charakterisierung von Abfällen - Auslaugung - Übereinstimmungsuntersuchung für die Auslaugung von körnigen Abfällen und Schlämmen - Teil 4: Einstufiges Schüttelverfahren mit einem Flüssigkeits-/Feststoffverhältnis von 10 l/kg für Materialien mit einer Korngröße unter 10 mm (ohne oder mit Korngrößereduzierung)

This European Standard was approved by CEN on 17 August 2002.

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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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions.....	6
3.1 leaching test.....	6
3.2 leachant.....	6
3.3 eluate.....	6
3.4 single batch leaching test.....	6
3.5 serial batch leaching test.....	6
3.6 liquid to solid ratio L/S (abbreviation : L/S).....	6
3.7 liquid waste.....	6
3.8 sludge.....	6
3.9 monolithic waste.....	6
3.10 granular waste.....	6
3.11 dry matter content ratio (abbreviation : DR)	6
3.12 moisture content ratio (abbreviation MC)	7
3.13 laboratory sample	7
3.14 test sample	7
3.15 test portion	7
4 Compliance test	7
4.1 Principle.....	7
4.2 Equipment and reagents.....	7
4.3 Sampling strategy and sample preparation	8
5 Procedure	10
5.1 Testing conditions	10
5.2 Description of the procedure.....	10
5.3 Further preparation of the eluate for analysis	11
5.4 Blank test for the verification of the leaching procedure	11
6 Calculation.....	12
7 Documentation and test report.....	12
7.1 Sample preparation	12
7.2 Production of eluate	13
7.3 Analytical determination	13
7.4 Calculations and blank test information	13
8 Performance characteristics.....	14
8.1 Objective of the validation	14
8.2 Validation study	14
8.3 Validation results	15
8.4 Summary of the performance characteristics evaluation	17
Annex A (informative) Information on the influence on the test results of the parameters that affect leaching.....	19
Annex B (informative) Test for determining whether waste is in the liquid state.....	21
Annex C (informative) Example of datasheet for EN 12457-4.....	22
Annex D (informative) Process map for EN 12457-4.....	23
Annex E (informative) Example of a specific liquid-solid separation procedure for soil sample.....	25
Annex ZA Informative National deviation A from France.....	26
Bibliography	27

Foreword

This document (EN 12457-4:2002) has been prepared by Technical Committee CEN /TC 292, "Characterisation of waste", 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 June 2003, and conflicting national standards shall be withdrawn at the latest by June 2003.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This document has been developed primarily to support the requirements for compliance testing within the EU and EFTA countries.

This document was elaborated on the basis of :

DIN 38414-S4:1984

AFNOR X-31 210:1992

NEN 7343:1992

ÖNORM S 2072:1990

No existing European Standard is superseded by the publication of this European Standard.

Annexes A, B, C, D, E and ZA are informative.

This document includes a Bibliography.

Introduction

In the different European countries, tests have been developed to characterise and assess the constituents which can be leached from waste materials. The release of soluble constituents upon contact with water is regarded as a main mechanism of release which results in a potential risk to the environment during the reuse or disposal of waste materials. The intent of these tests is to identify the leaching properties of waste materials. The complexity of the leaching process makes simplifications necessary.

Not all of the relevant aspects of leaching behaviour can be addressed in one standard. Tests to characterise waste materials and their behaviour can generally be divided into three categories :

- (1) "Basic Characterisation" tests are used to obtain information on the short and long term leaching behaviour and characteristics properties of waste materials. Liquid/solid (L/S) ratios, leachant composition, factors controlling leachability such as pH, redox potential, complexing capacity and physical parameters are addressed in these tests ;
- (2) "Compliance" tests are used to determine whether the waste complies with specific reference values. The tests focus on key variables and leaching behaviour identified by basic characterisation tests ;
- (3) "On-site verification" tests are used as a rapid check to confirm that the waste is the same as that which has been subjected to the compliance test(s).

The procedures described in this European Standard fall in category 2 : compliance tests.

The four procedures described in the four following European Standards are based on different liquid to solid (L/S) ratios and different particle sizes because these parameters, among others, play an important role in the leaching process:

EN 12457-1, *One stage batch test at a liquid to solid ratio of 2 l/kg for materials with high solid content and with particle size below 4 mm (without or with size reduction).*

EN 12457-2, *One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 4 mm (without or with size reduction).*

EN 12457-3, *Two stage batch test at a liquid to solid ratio of 2 l/kg and 8 l/kg for materials with high solid content and with particle size below 4 mm (without or with size reduction).*

EN 12457-4, *One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 10 mm (without or with size reduction).*

Each part specifies a distinct procedure. The specific features of each part are described in the scope and principle of each part. For given wastes the results can be different for the different procedures. There are six annexes to this European Standard giving useful information on the selection of the appropriate procedure, reference documents and guidance on the limitations of these procedures.

The choice of the procedure depends on the degree and type of information required for compliance testing. This choice has to be made by the organisation establishing the compliance requirements.

This European Standard specifies a compliance test. For basic characterisation, a methodology for the determination of the leaching behaviour of waste has been developed within TC 292 and formulated in ENV 12920.

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