DIN EN 14429:2015-05 (E)

Characterization of waste - Leaching behaviour test - Influence of pH on leaching with initial acid/base addition

Contents

Page

Foreword 4

Introduction 5

1 Scope 7

2 Normative references 7

3 Terms and definitions 7

4 Symbols and abbreviations 8

5 Principle 9

6 Reagents 9

7 Equipment 10
7.1 General 10
7.2 Laboratory equipment 10

8 Sample preparation 11
8.1 Laboratory sample 11
8.2 Preparation of the test sample 11
8.3 Determination of dry residue 11
8.4 Preparation of the test portion 12

9 Procedure 12
9.1 Contact time 12
9.2 pH range 12
9.3 Leaching test 13
9.3.1 General 13
9.3.2 Preparation of leachant 13
9.3.3 Leaching procedure 14
9.4 Natural pH 15

10 Eluate treatment, storage and analysis 16

11 Blank test 16

12 Performance characteristics 16

13 Test report 17

Annex A (informative) Example of a data sheet 19

Annex B (informative) Operation and uses of the test -- Influence of pH on the leaching behaviour 20

B.1 Clarification of the two modes of operation of the test: influence of pH on the leaching behaviour 20
B.2 Expression of results 22
B.3 Scope and limits of the application field of the test 22

B.3.1 Remarks on the use of pH dependence test results to assess the effects of ageing 22
B.3.2 Examples of test result use and considerations on scope 23
B.4 Example: Identification of the sensitivity of leaching to pH over the environmentally relevant pH range 24

Annex C (informative) Preliminary determination of the acid/base consumption 25

C.1 General 25
C.2 Titration procedure to estimate the ANC and the BNC 25
C.2.1 Reagents and laboratory devices 25
C.2.2 Test portion 25
C.2.3 Procedure 25
C.2.4 Expression of results 27
C.3 Arbitrary division of the maximum acid/base consumption for the extreme pH values 27
C.3.1 General 27
C.3.2 Reagents and laboratory devices 27
C.3.3 Test portion 27
C.3.4 Procedure 27
C.3.5 Expression of results 28

Annex D (informative) Examples of acid and base neutralization capacities for waste, soil, sediment and construction materials 30

D.1 Examples of acid and base neutralization capacities 30
D.2 Use of acid and base neutralization capacity data 32

Annex E (informative) Repeatability and reproducibility data 33

E.1 Materials used in the interlaboratory comparison study 33
E.2 Interlaboratory comparison results 33

Bibliography 51