

DIN EN 14997:2015-05 (E)

Characterization of waste - Leaching behaviour test - Influence of pH on leaching with continuous pH control

| 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 | 12 |
| 9.3.1 | General | 12 |
| 9.3.2 | Preparation of leachant | 13 |
| 9.3.3 | Leaching procedure | 15 |
| 9.4 | Natural pH | 16 |
| 10 | Eluate treatment, storage and analysis | 16 |
| 11 | Blank test | 16 |
| 12 | Performance characteristics | 17 |
| 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 | 26 |
| 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 | | 29 |
| D.1 | Examples of acid and base neutralization capacities | 29 |
| D.2 | Use of acid and base neutralization capacity data | 31 |
| Annex E (informative) Repeatability and reproducibility data | | 32 |
| E.1 | Materials used in the interlaboratory comparison study | 32 |
| E.2 | Interlaboratory comparison results | 32 |
| Bibliography | | 50 |