

DIN EN 16179:2012-11 (E)

Sludge, treated biowaste and soil - Guidance for sample pretreatment

| Contents | | Page |
|---|--|-------------|
| Foreword | | 4 |
| Introduction | | 5 |
| 1 Scope | | 6 |
| 2 Normative references | | 6 |
| 3 Terms and definitions | | 7 |
| 4 Safety remarks | | 9 |
| 5 Principle | | 9 |
| 5.1 General | | 9 |
| 5.2 Preservation and storage of samples | | 13 |
| 5.3 Pretreatment in the field | | 13 |
| 5.4 Pretreatment in the laboratory for determination of inorganic and physico-chemical parameters | | 19 |
| 5.5 Pretreatment in the laboratory for determination of organic volatile compounds | | 19 |
| 5.6 Pretreatment in the laboratory for determination of moderately volatile organic compounds | | 19 |
| 6 Reagents | | 20 |
| 7 Apparatus | | 20 |
| 7.1 General | | 20 |
| 8 Sampling and pretreatment procedures in the field (from field sample to laboratory sample) | | 22 |
| 8.1 General | | 22 |
| 8.2 Selection of workplace | | 23 |
| 8.3 Estimation of minimum subsample mass | | 23 |
| 8.4 Pretreatment methods | | 25 |
| 8.4.1 Procedure for macro aggregate reduction by hand | | 25 |
| 8.4.2 Subsampling methods | | 25 |
| 8.4.3 Liquid sludge handling | | 26 |
| 9 Storing and preservation | | 26 |
| 9.1 General | | 26 |
| 9.2 Appropriate sample container | | 26 |
| 9.3 Preservation | | 27 |
| 10 Pretreatment procedures in the laboratory (from laboratory sample to test sample) | | 27 |
| 10.1 General | | 27 |
| 10.2 Pretreatment for determination of chemical and physico-chemical parameters | | 27 |
| 10.2.1 General | | 27 |
| 10.2.2 Laboratory sample description | | 28 |
| 10.2.3 Drying of solid samples | | 28 |
| 10.2.4 Removal of extraneous materials and crushing | | 29 |
| 10.2.5 Subsampling | | 29 |
| 10.2.6 Milling | | 30 |
| 10.2.7 Liquid sludge samples | | 31 |

| | | |
|---|---|-----------|
| 10.3 | Pretreatment for determination of organic compounds | 32 |
| 10.3.1 | General | 32 |
| 10.3.2 | Volatile compounds | 32 |
| 10.3.3 | Moderately volatile organic compounds - Grinding necessary | 33 |
| 10.3.4 | Moderately volatile organic compounds - Grinding not possible or not necessary | 35 |
| 11 | Test report | 36 |
| Annex A (informative) Subsampling methods | | 37 |
| A.1 | Long pile and alternate shovel method | 37 |
| A.2 | Coning and quartering | 38 |
| A.3 | Riffling | 39 |
| A.4 | Application of Tyler divider | 40 |
| A.5 | Application of mechanised turntable (rotating divider) | 40 |
| Annex B (informative) Information concerning vapour pressure, boiling and melting points of volatile organic compounds | | 42 |
| Bibliography | | 45 |