

DIN EN ISO 14851:2019-07 (E)

Determination of the ultimate aerobic biodegradability of plastic materials in an aqueous medium - Method by measuring the oxygen demand in a closed respirometer (ISO 14851:2019)

| Contents | | Page |
|--|--|-------------|
| EN ISO 14851:2019 (E) European foreword | | 3 |
| Foreword | | 4 |
| Introduction | | 6 |
| 1 | Scope | 7 |
| 2 | Normative references | 7 |
| 3 | Terms and definitions | 7 |
| 4 | Principle | 9 |
| 5 | Test environment | 9 |
| 6 | Reagents | 9 |
| 6.1 | Distilled or deionized water | 10 |
| 6.2 | Test medium | 10 |
| 6.2.1 | Standard test medium | 10 |
| 6.2.2 | Optimized test medium | 10 |
| 6.3 | Pyrophosphate solution | 12 |
| 6.4 | Carbon dioxide absorber | 12 |
| 7 | Apparatus | 12 |
| 8 | Procedure | 12 |
| 8.1 | Test material | 12 |
| 8.2 | Reference material | 13 |
| 8.3 | Preparation of the inoculum | 13 |
| 8.4 | Test | 14 |
| 9 | Calculation and expression of results | 15 |
| 9.1 | Calculation | 15 |
| 9.2 | Expression and interpretation of results | 16 |
| 10 | Validity of results | 16 |
| 11 | Test report | 17 |
| Annex A (informative) Theoretical oxygen demand (ThOD) | | 18 |
| Annex B (informative) Correction of BOD values for interference by nitrification | | 19 |
| Annex C (informative) Principle of a closed manometric respirometer | | 21 |
| Annex D (informative) Two-phase closed-bottle version of the respirometric test | | 23 |
| Annex E (informative) Example of the determination of a carbon balance | | 26 |

| | |
|--|-----------|
| Annex F (informative) Example of a determination of the amount of water-insoluble polymer remaining at the end of a biodegradation test and the molecular mass of the polymer | 28 |
| Annex G (informative) Example of the determination of the CO₂ absorbed in the absorbent | 29 |
| Bibliography | 31 |