

# DIN EN ISO 9696:2018-04 (E)

## Water quality - Gross alpha activity - Test method using thick source (ISO 9696:2017)

---

| Contents   | Page |
|--|------|
| European foreword .....                          | 3    |
| Foreword .....                                   | 4    |
| Introduction .....                               | 5    |
| 1 Scope .....                                    | 7    |
| 2 Normative references .....                     | 7    |
| 3 Terms and definitions .....                    | 7    |
| 4 Symbols .....                                  | 8    |
| 5 Principle .....                                | 8    |
| 6 Reagents and equipment .....                   | 9    |
| 6.1 Reagents .....                               | 9    |
| 6.2 Equipment .....                              | 10   |
| 7 Procedure .....                                | 10   |
| 7.1 Sampling .....                               | 11   |
| 7.2 Pretreatment .....                           | 11   |
| 7.3 Concentration stage .....                    | 11   |
| 7.4 Sulfation stage .....                        | 11   |
| 7.5 Ignition stage .....                         | 12   |
| 7.6 Source preparation .....                     | 12   |
| 7.7 Measurement .....                            | 12   |
| 7.8 Background determination .....               | 12   |
| 7.9 Preparation of the calibration source .....  | 12   |
| 7.10 Sensitivity and bias .....                  | 13   |
| 7.11 Optimization of the determination .....     | 13   |
| 8 Contamination check .....                      | 14   |
| 8.1 General .....                                | 14   |
| 8.2 Radon isotopes losses .....                  | 14   |
| 8.3 Polonium losses .....                        | 14   |
| 9 Expression of results .....                    | 14   |
| 9.1 Calculation of activity concentration .....  | 14   |
| 9.2 Standard uncertainty .....                   | 15   |
| 9.3 Decision threshold .....                     | 15   |
| 9.4 Detection limit .....                        | 16   |
| 9.5 Confidence-interval limits .....             | 16   |
| 10 Test report .....                             | 16   |
| Annex A (informative) Performance criteria ..... | 18   |
| Bibliography .....                               | 19   |