

# ISO 23256:2023-06 (E)

## Water quality - Detection of selected congeners of polychlorinated dibenzo-p-dioxins and polychlorinated biphenyls - Method using a flow immunosensor technique

---

| <b>Contents</b>    |   | <b>Page</b> |
|--------------------|---|-------------|
| Foreword .....     |   | v           |
| Introduction ..... |   | vi          |
| 1                  | Scope .....                                     | 1           |
| 2                  | Normative references .....                      | 1           |
| 3                  | Terms, definitions, and abbreviated terms ..... | 1           |
| 3.1                | Terms and definitions .....                     | 1           |
| 3.2                | Abbreviated terms .....                         | 3           |
| 4                  | Principle .....                                 | 4           |
| 4.1                | Flow immunosensor .....                         | 4           |
| 4.2                | Specific antibody .....                         | 5           |
| 5                  | Interferences .....                             | 5           |
| 6                  | Reagents .....                                  | 5           |
| 7                  | Apparatus and materials .....                   | 7           |
| 8                  | Sampling .....                                  | 8           |
| 8.1                | General .....                                   | 8           |
| 8.1.1              | General .....                                   | 8           |
| 8.1.2              | Bottles and material for sampling .....         | 8           |
| 8.1.3              | Bottles and material pre-cleaning .....         | 8           |
| 8.1.4              | Sampling .....                                  | 8           |
| 8.2                | Preparation of sample .....                     | 8           |
| 8.2.1              | Extraction .....                                | 8           |
| 8.2.2              | Clean-up .....                                  | 9           |
| 8.2.3              | Sample solutions .....                          | 9           |
| 9                  | Procedure .....                                 | 9           |
| 9.1                | General .....                                   | 9           |
| 9.2                | Sample set up .....                             | 9           |
| 9.3                | Measuring procedure .....                       | 10          |
| 10                 | Data processing .....                           | 11          |
| 10.1               | Measurement data .....                          | 11          |
| 10.2               | Calibration curve .....                         | 11          |
| 10.3               | Calculation of measured concentration .....     | 12          |
| 11                 | Validation .....                                | 13          |
| 11.1               | General .....                                   | 13          |
| 11.2               | Accuracy profile .....                          | 13          |
| 11.3               | Range of quantitation .....                     | 14          |
| 11.4               | Limit of detection .....                        | 15          |
| 11.5               | Evaluation of data .....                        | 15          |
| 11.6               | Quality control .....                           | 15          |

|                       |   |    |
|-----------------------|---|----|
| 12                    | Test report .....   | 16 |
| Annex A (informative) | Specificity of mouse monoclonal antibodies used for the flow immunosensor .....   | 17 |
| Annex B (informative) | Example of the automate sample clean-up and concentration device .....  | 18 |
| Annex C (informative) | Example of the flow immunosensor .....  | 20 |
| Annex D (informative) | Recoveries, calibration curves, ranges of quantitation of the standard analytes 2,3,7,8-TCDD and 3,3',4,4',5-PeCB in drinking water .....   | 26 |
| Annex E (informative) | Measurement of 2,3,7,8-TCDD and 3,3',4,4',5-PeCB in river waters .....  | 30 |
| Annex F (informative) | Interlaboratory trial of the measurement of 2,3,7,8-TCDD and 3,3',4,4',5-PeCB in water samples by the use of flow immunosensor method ..... | 33 |
| Bibliography .....    |   | 36 |