

# ISO 11352:2012-07 (E)

## Water quality - Estimation of measurement uncertainty based on validation and quality control data

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	1
4	Symbols .....	4
5	Principle .....	5
6	Procedure .....	5
7	Preparative considerations for the estimation of measurement uncertainty .....	6
7.1	Specification of the measurement .....	6
7.2	Specification of the parametric form in which the measurement uncertainty is reported .....	6
8	Evaluation of available precision and bias data .....	7
8.1	Approach and criteria .....	7
8.2	Within-laboratory reproducibility .....	8
8.3	Method and laboratory bias .....	10
9	Calculation of the combined standard uncertainty .....	14
10	Calculation of the expanded uncertainty .....	15
11	Estimation of measurement uncertainty from reproducibility standard deviation .....	15
12	Report .....	15
Annex A (normative) Estimation of the standard uncertainty from range control charts .....		16
Annex B (informative) Examples of the estimation of measurement uncertainty .....		17
Bibliography .....		26