

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

HJ 168-2020

Replacing HJ 168-2010

**Technical Guidelines for the Establishment of Environmental
Monitoring Analysis Method Standards
(English Translation)**

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1 Scope of application

This standard specifies the basic requirements, technical routes, standard text and related Technical requirements for technical documents.

This standard applies to the formulation of environmental monitoring and analysis method standards.

2 Normative references

This standard quotes the following documents or their clauses. For undated reference documents, their valid versions are applicable to this standard.

GB/T 6379 Measurement method and accuracy of results (accuracy and precision) (ISO

5725) GB/T 7714 Information and literature reference description rules GB/T 8170
Numerical rounding rules and the expression and determination of limit values HJ 565
Environmental Protection Standard Compilation and Publication Technical Guide JJF
1059.1 Evaluation and expression of measurement uncertainty

3 Terms and definitions

The following terms and definitions apply to this standard.

Method detection limit the lowest concentration or the smallest amount of the substance to be tested can be qualitatively detected from the sample within a given confidence level by a specific analytical method.

Minimum quantitative detection limit on the premise that the limited error can meet the predetermined requirements, the specific analysis method can accurately and quantitatively determine the maximum value of the substance to be tested.

Low concentration or minimum amount.

Maximum quantitative detection limit on the premise that the limited error can meet the predetermined requirements, the specific analysis method can accurately and quantitatively determine the maximum value of the substance to be tested.

High concentration or maximum amount.

Determination range

The range between the lower limit of measurement and the upper limit of measurement.

Precision

The degree of agreement between independent test results under specified conditions.

23.6

Repeatability

Refers to using the same method by the same operator on the same object under test in the same laboratory, using the same instruments and equipment, the degree of consistency between independent test results under the same test conditions.

Repeatability limit

For a value, under repeatability conditions, the probability that the absolute difference between the two test results does not exceed this number is 95%.

Note: The symbol of repeatability limit is r .

Reproducibility

Also known as "reproducibility", it refers to the use of the same method by different

operators on the same object under test in different laboratories.

Using the same instrument and equipment, under the same test conditions, the degree of agreement between the test results obtained.

Reproducibility limit for a value, under the condition of reproducibility, the probability that the absolute difference between the two test results does not exceed this number is 95%.

Note: The reproducibility limit symbol is R .

3.10

Trueness

The degree of agreement between the average value of the measured value of repeated measurements and a reference value.

3.11

Accuracy

The degree of agreement between the measured value of the measured value and its true value.

Note: The accuracy of the measurement result is characterized by two indicators of accuracy and precision.

3.12

Uncertainty it characterizes the parameters that are reasonably assigned to the dispersion of the measured value and are related to the measurement result.

Note 1: This parameter can be the standard deviation or its multiples, or it indicates the half-width of the confidence interval.

Note 2: The uncertainty is composed of multiple components, and the standard uncertainty of each component must be evaluated. The evaluation methods are divided into A and B categories.

Type A evaluation is to use the method of statistical analysis on the observation column, which is characterized by the experimental standard deviation; Type B evaluation is different from Type A Other methods are characterized by the estimated standard deviation.

Note 3: The measurement result should be understood as the best estimate of the measured value, and all the uncertainty components contribute to the dispersion, including those the component caused by system effects.

3.13

Laboratory sample

Collect samples that are stored and sent to the laboratory for testing.

3.14

Test sample

Prepare samples from laboratory samples and draw samples from them.

3.15

Test portion

Take it from the sample (if the sample and the laboratory sample are the same, take it from the laboratory sample) and use it for

3 A certain amount of materials tested or observed.

3.16

Blank test

Refers to the test that does not contain the substance to be tested, using the same procedure as the laboratory sample. The corresponding sample is called it is a blank sample, referred to as blank.

3.17

Calibration

Under specified conditions, in order to determine the value represented by the measuring instrument or measuring system or the value represented by the physical measuring tool or standard material A set of operations corresponding to the relationship between the measured known values.

3.18

Qualitative method

An analytical method that identifies substances based on their chemical, biological or physical properties.

3.19

Quantitative method

The analytical method for measuring the amount of the substance to be measured can be expressed in numerical values in appropriate units.

4 Basic requirements

4.1

The method and standard should be able to meet the ecological environmental quality standards, ecological environmental risk control standards, and implementation of pollutant