

**Raad voor Accreditatie  
(Dutch Accreditation Council  
RvA)**

# **Interlaboratory Comparisons**

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A RvA-Explanatory note describes the policy and/or the procedures of the RvA concerning a specific field of accreditation. In case the policy and/or procedures for a specific field of accreditation as described in a RvA Explanatory note, is documented by EA, ILAC or IAF, the RvA will bring its policy en procedures in line with the EA, ILAC or IAF-document.

A current version of the Explanatory is available through the website of the RvA. ([www.rva.nl](http://www.rva.nl)).

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## 1 Introduction

This document explains the RvA policy regarding the use of proficiency testing activities in the accreditation process of laboratories and, where relevant, inspection bodies. In the context of this document, “laboratories” implies all laboratory types – i.e. testing, calibration and medical laboratories and inspection bodies that conduct testing.

The RvA policy is based on ILAC-P9:06/2014; ILAC Policy for Participation in Proficiency Testing Activities.

## 2 Terminology

**Proficiency testing (PT)** is the determination of the calibration or testing performance of a laboratory or the testing performance of an inspection body against pre-established criteria by means of interlaboratory comparison.

**Interlaboratory comparison (ILC)** is the organization, performance and evaluation of measurements or tests on the same or similar items by two or more laboratories or inspection bodies in accordance with predetermined conditions.

## 3 RvA-policy

3.1 For the RvA it is essential to be able to assess the technical competence of its accredited laboratories. One of the possibilities by which laboratories can demonstrate technical competence is by satisfactory participation in PT activities where such activities are available and appropriate.

3.2 Technical competence can also be demonstrated by successful participation in ILC that have been organised for purposes other than PT in its strictest sense. For example:

- to evaluate the performance characteristics of a method;
- to characterise a reference material;
- to compare results of two or more laboratories on their own initiative;
- to support statements of the equivalence of measurement of NMIs.

3.3 The RvA supports the use of appropriate PT programmes which meet the essential requirements of ISO/IEC 17043, where applicable.

3.4 The RvA will review the performance in PT activities in the assessment and accreditation process. In the decision making process RvA may decide to reconsider its surveillance interval and the extent of its surveillance assessments based on this performance (also see RvA policy rule RvA-BR005).

The following considerations are relevant:

- actions by laboratories in response to poor performance in PT;
- PT requirements set by regulators, industry or professional sectors, regional cooperation bodies (e.g. EA), or other interested parties.

#### 4 RvA explanation on the use of PT

- 4.1 The RvA distinguishes six acceptable options for the PT participation by laboratories.
- 4.1.1 When PT's are offered by independent organisers, it is the responsibility of the laboratory to verify the competency of the organiser. The organiser should work according to the principles of ISO/IEC 17043 or be accredited according this standard. RvA-accredited organisers can be found as Rxxx registrations with the search engine on [www.rva.nl](http://www.rva.nl).
- 4.1.2 When PT's are organised by or offered by EA in the framework of the Multilateral Agreement (EA-MLA), RvA will facilitate this. The RvA will select and approach possible laboratories for participation. Test or measurement results may be collected by RvA and sent to the organiser or may directly be sent to the organiser by the laboratory.
- 4.1.3 Measurement audits are organised by RvA with the help of technical experts to verify the technical competence of a single laboratory. It will be organised as intermediate check and especially when a laboratory has not yet participated in a ILC.
- 4.1.4 Bilateral comparisons may be organised in addition to other ILCs. The very limited amount of participants does not allow a statistical analyses. They can only be accepted as fulfilment of this policy when other ILCs are not available.
- 4.1.5 Testing under reproducibility conditions (for example second line checks). This option can be used in case the options explained in 4.1.1 to 4.1.4 are not possible.
- 4.1.6 In case the five options described above are not possible, the laboratory should decide on alternative ways of demonstrating technical competence. Any decision should be justified. The RvA will assess the decisions taken and the justification and will record its conclusions in the assessment report.
- 4.2 The laboratory is responsible to participate in PTs according to the following considerations and minimum frequencies:
- One activity for each field (*sub field* level as mentioned in annex A for calibration and annex B for testing) before accreditation will be granted for this field. As required by ISO/IEC 17011 par. 7.15.3, RvA has defined the fields in calibration and testing together with the currently applied minimum frequency. The lists presented in annexes A and B are composed in cooperation with the interested parties.
  - One activity for each field (*sub field* level) of a laboratory's scope of accreditation in an accreditation cycle of four years (period starting after the decision on an initial or reassessment).
  - Medical laboratories are expected to take into account the guidelines established by the relevant scientific associations and where applicable use the PT programs provided by SKML.

Sufficient participation implies the participant is obtaining a satisfactory result in the PT.

An interpretation of the results often used is the one according to ISO/IEC 17043; Conformity assessment –

General requirements for proficiency testing:

- $|Z| \leq 2,0$  indicates that the results are satisfactory and that there is no action signal
- $2 < |Z| < 3,0$  indicates that the results are questionable and that an action signal exists
- $|Z| \geq 3,0$  indicates that the results are not satisfactory and that an action signal exists
- $|En| \leq 1,0$  indicates that the results are satisfactory and that there is no action signal
- $|En| > 1,0$  indicates that the results are not satisfactory and that an action signal exists.

Or another performance characteristic that satisfies a predetermined limit.

In case of exceeding a limit, the laboratory shall take appropriate corrective actions. During the RvA assessments the laboratory shall be able to demonstrate the appropriateness and effectiveness of these corrective actions.

- The laboratory should consider circumstances in which PT participation has been mandated for the purposes of accreditation, for example by a regulator or an industry or professional sector (for example in an accreditation program or scheme) and more stringent frequencies are imposed.
- If there are significant changes to laboratory's staff, facilities, methods or to the scope of accreditation the laboratory should consider increasing the frequency. At the same time the RvA recognizes the additional costs involved in regular participation in PTs in some cases to be substantial. Should these costs significantly influence the competitiveness of (a group of) laboratories, reduction in participation may be considered.
- The laboratory is responsible to establish, implement and maintain a plan for participation in PT according to the policy explained in this document. Such a plan should be justified and evaluated during the periodic management review.
- The laboratory should consider the compatibility of sample type and presentation provided in the PT plan, with those that are most commonly handled by the laboratory in its day to day operations.
- The laboratory should consider that PT can be used as a laboratory education and risk management tool.

4.3 During its assessment RvA will verify the following:

- The laboratory should be able to demonstrate to the assessment team that PT is implemented according to the policies explained in 4.1 and 4.2.
- Prior to each assessment the laboratory should provide the RvA with an overview of PT participation and the results since the previous RvA assessment.
- The RvA assessment team will assess the performance and where relevant the actions taken by the laboratory if the results in PT were not satisfactory.

## 5 EA interlaboratory comparisons

In the framework of the European Multilateral Agreement (EA-MLA) PTs may be provided which are sanctioned by the EA laboratory committee (EA-LC). RvA may make participation in these PTs mandatory for the accredited laboratories. The costs for participation are paid by the laboratory. The laboratory however may change its planned participation in other PTs in the field in question because of this EA-LC sanctioned PT.

In some cases another organisation (for example APLAC) offer laboratories to participate in their ILCs. In those cases the invitation is normally passed to RvA by the EA-LC. If RvA needs to make costs to enable laboratories to participate in such ILC (participation fee, transport and insurance, organisation and support) RvA may invoice these costs to the participating laboratories.

## 6 Modification compared to previous revision

Compared to version 3, dated 7 May 2014, of this document, the explanation of the interpretation of PT results has been improved.

**Annex A: List with fields for calibration and the minimum frequency for PT participation**

| main code<br>(Quantity) | sub field | main field                 | sub field  | PT participation<br>Frequency per 4<br>years |
|-------------------------|-----------|----------------------------|--|--|
| LF                      | 0         | DC/LF electricity          |  |  |
| LF                      | 1         |                            | Direct voltage   | 1  |
| LF                      | 2         |                            | Direct current   | 1  |
| LF                      | 3         |                            | Alternating voltage  | 1  |
| LF                      | 4         |                            | Alternating current  | 1  |
| LF                      | 5         |                            | Power and energy   | 1  |
| LF                      | 6         |                            | Impedance (DC/LF)  | 1  |
| RF                      | 0         | High frequency electricity |  |  |
| RF                      | 1         |                            | High frequency Voltage / CW Flatness                       | 1  |
| RF                      | 2         |                            | Impedance  | 1  |
| RF                      | 3         |                            | High frequency power                                       | 1  |
| RF                      | 4         |                            | Noise  | 1  |
| RF                      | 5         |                            | Electrical /magnetic field quantities<br>/EMC/EMI/TEM cell | 1  |
| MQ                      | 0         | Magnetic quantities        |  |  |
| MQ                      | 1         |                            | Magnetic flux density                                      | 1  |
| MQ                      | 2         |                            | Magnetic material properties                               | 1  |
| TF                      | 0         | Time and frequency         |  |  |
| TF                      | 1         |                            | Absolute time  | 1  |
| TF                      | 2         |                            | Relative time  | 1  |
| TF                      | 3         |                            | Timeinterval and amplitude                                 | 1  |
| DM                      | 0         | Dimensional quantities     |  |  |
| DM                      | 0         |                            | Length   | 1  |
| DM                      | 1         |                            | Length gauges  | 1  |
| DM                      | 2         |                            | Line scales, distances                                     | 1  |
| DM                      | 3         |                            | Length measuring instruments                               | 1  |
| DM                      | 4         |                            | Diameter   | 1  |
| DM                      | 5         |                            | Form error   | 1  |
| DM                      | 6         |                            | Roughness  | 1  |
| DM                      | 7         |                            | Thread quantities  | 1  |
| DM                      | 8         |                            | Co-ordinate measuring machines                             | 1  |
| DM                      | 8         |                            | Machine tool, work pieces                                  | 1  |
| DM                      | 9         |                            | Angle (meas.instruments)                                   | 1  |
| DM                      | 10        |                            | Angle gauges   | 1  |
| DM                      | 11        |                            | Index tables   | 1  |
| DM                      | 12        |                            | Clinometers  | 1  |
| FQ                      | 0         | Force                      | Force  | 1  |
| MW                      | 1         | Mass                       | Mass   | 1  |
| PV                      | 0         | Pressure and               |  |  |

| main code<br>(Quantity) | sub field | main field                              | sub field  | PT participation<br>Frequency per 4<br>years |
|-------------------------|-----------|---|--|--|
|                         |           | vacuum                                  |  |  |
| PV                      | 1         |   | Gas pressure   | 1  |
| PV                      | 2         |   | Liquid pressure  | 1  |
| PV                      | 3         |   | Vacuum quantities  | 1  |
| TQ                      | 0         | Torque                                  |  | 1  |
| AC                      | 0         | Acoustical quantities                   |  | 1  |
| AM                      | 0         | Accelerometry                           |  | 1  |
| US                      | 0         | Ultrasonics                             |  | 1  |
| DV                      | 1         | Density and<br>viscosity                | Density and viscosity                                    | 1  |
| FG                      | 1         | Flow of gas                             | Flow of gas  | 1  |
| FL                      | 1         | Flow of liquids                         | Flow of liquids  | 1  |
| VG                      | 1         | Volume of flowing<br>gases              | Volume of flowing gases                                  | 1  |
| VL                      | 1         | Volume of flowing<br>liquids            | Volume of flowing liquids                                | 1  |
| OQ                      | 1         | Optical quantities                      | Optical quantities                                       | 1  |
| IR                      | 1         | Ionising radiation<br>and radioactivity | Ionising radiation and radioactivity                     | 1  |
| TE                      | 0         | Temperature                             |  |  |
| TE                      | 1         |   | Resistance thermometers                                  | 1  |
| TE                      | 2         |   | Standard Platinum Resistance<br>Thermometers (SPRTs)     | 1  |
| TE                      | 3         |   | Thermocouples  | 1  |
| TE                      | 4         |   | Self Indicating thermometers                             | 1  |
| TE                      | 5         |   | Radiation thermometry                                    | 1  |
| TE                      | 7         |   | Radiation sources  | 1  |
| TE                      | 8         |   | Thermophysical properties                                | 1  |
| TE                      | 9         |   | Simulators / indicators                                  | 1  |
| TE                      | 10        |   | Contact thermometry fixed points for<br>realising ITS-90 | 1  |
| TE                      | 11        |   | Radiation thermometers items for<br>realising ITS-90     | 1  |
| TE                      | 12        |   | Temperature controlled chambers                          | 1  |
| TE                      | 13        |   | Other temperature enclosures                             | 1  |
| TE                      | 14        |   | Bridge linearity   | 1  |
| TE                      | 15        |   | Cold junction compensation                               | 1  |
| RH                      | 0         | Humidity                                |  |  |
| RH                      | 1         |   | Hydrometers  | 1  |
| RH                      | 2         |   | Other instruments for humidity                           | 1  |
| RH                      | 3         |   | Generators for humidity                                  | 1  |
| RH                      | 4         |   | Humidity of temperature controlled<br>chambers           | 1  |



| main code<br>(Quantity) | sub field | main field          | sub field                    | PT participation<br>Frequency per 4<br>years |
|-------------------------|-----------|---------------------|------------------------------|--|
| CH                      | 0         | Chemical analysis   |                              | 1  |
| CH                      | 1         |                     | pH measuring equipment       |  |
| CH                      | 2         |                     | Hardness (of water)          |  |
| CH                      | 3         |                     | Olfactometry (odour)         |  |
| CH                      | 4         |                     | Calorific value/ Wobbe index |  |
| RM                      | 0         | Reference materials |                              | 1  |
| RM                      | 1         |                     | Amount of substance          |  |
| RM                      | 2         |                     | Gas mixtures                 |  |
| RM                      | 3         |                     | Hardness                     | 1  |

**Annex B: List with fields for testing labs**

| <b>Main field</b>                       | <b>Sub field</b>                     | <b>Parameters or technique in sub field</b> |
|---|--------------------------------------|---|
| Construction and construction materials |                                      |   |
|   | Fire conduct                         |   |
|   | Fire Resistance                      |   |
|   | Chemical parameters, Inorganic       |   |
|   |                                      | Chromatography                              |
|   |                                      | Spectroscopy                                |
|   |                                      | Titrimetry                                  |
|   | Fysiscal parameters                  |   |
|   |                                      | dimensions                                  |
|   |                                      | tensile strength                            |
|   | Frost resistance                     |   |
|   | Leaching analysis (not AP04)         |   |
|   | AP04 (Dutch law)                     |   |
|   |                                      | Package E                                   |
|   |                                      | Package SB1                                 |
|   |                                      | Package SB2                                 |
|   |                                      | Package U1                                  |
|   |                                      | Package U2                                  |
| Drinking water                          |                                      |   |
|   | Sampling; Chemical parameters        |   |
|   | Sampling; Microbiological parameters |   |
|   | Chemical parameters, Inorganic       |   |
|   |                                      | Coulometry                                  |
|   |                                      | Conductometry                               |
|   |                                      | Flow analysis                               |
|   |                                      | Electrochemistry                            |
|   |                                      | Potentiometry                               |
|   |                                      | Chromatography (ion)                        |
|   |                                      | Gravimetry                                  |
|   |                                      | Nefeleometry//turbimetry                    |
|   |                                      | Radioactivity                               |
|   |                                      | Spectroscopy                                |
|   |                                      | Titrimetry                                  |
|   | Chemical parameters, Organic         |   |
|   |                                      | Chromatography (GC)                         |
|   |                                      | Chromatography (LC)                         |

| Main field  | Sub field                                | Parameters or technique in sub field |
|---|--|--------------------------------------|
|   |  | Coulometry                           |
|   |  | GC/MS (MS)                           |
|   |  | LC/MS(MS)                            |
|   | Hydrobiology                             |                                      |
|   |  | Microscopy                           |
|   | Microbiology,<br>Qualitative parameters  |                                      |
|   |  | Salmonella                           |
|   | Microbiology,<br>Quantitative parameters |                                      |
|   |  | Colony count at 25C                  |
|   |  | Escherichia coli                     |
|   |  | Coliforms                            |
|   |  | Clostridium perfringens              |
|   |  | Enterococci                          |
|   |  | Legionella                           |
|   |  | Colony count at 22C                  |
|   |  | Sulfite-reducing clostridia (spores) |
|   |  | Aeromonas                            |
|   |  | Pseudomonas aeruginosa               |
|   |  | Colony count at 37C                  |
|   |  |                                      |
|   |  | Thermotolerant coliforms             |
|   |  | F-specific RNA bacteriophages        |
|   |  | Somatic coliphages                   |
|   |  |                                      |
| Energy/ Electrotechnics<br>Fuels, petroleum<br>products, solvents,<br>waste and restmaterials |  |                                      |
|   | Chemical parameters,<br>Anorganic        |                                      |
|   |  | Coulometry                           |
|   |  | Chromatography (ion)                 |
|   |  | Flow analysis                        |
|   |  | Gravimetry                           |
|   |  | Spectroscopy                         |
|   | Chemical parameters,<br>Organic          |                                      |
|   |  | Chromatography (GC)                  |
|   |  | Chromatography (LC)                  |
|   |  | EOX                                  |
|   | Fysical parameters                       |                                      |
|   |  | Calorimetry                          |
|   |  | Vapour pressure                      |
|   |  | Destillation                         |

| Main field                | Sub field                     | Parameters or technique in sub field |
|---------------------------|-------------------------------|--------------------------------------|
|                           |                               | Density                              |
|                           |                               | Gravimetry                           |
|                           |                               | Colour                               |
|                           |                               | Flaf point                           |
|                           |                               | Viscosity                            |
| Apparatus                 |                               |                                      |
|                           | Boilers                       |                                      |
|                           |                               | Pressure                             |
|                           |                               | Efficiency                           |
|                           |                               | Energy                               |
|                           |                               | Leakage                              |
|                           |                               | Temperature                          |
|                           | Discharge                     |                                      |
|                           |                               | Aerodynamics                         |
|                           |                               | Pressure                             |
|                           |                               | Leakage                              |
|                           |                               | Mechanical propoerties               |
|                           |                               | Temperature                          |
|                           | Wind turbines                 |                                      |
|                           |                               | Noise                                |
|                           |                               | Mechanical propoerties               |
|                           |                               | Power                                |
|                           | EMC                           |                                      |
|                           |                               | Radiated Emission                    |
|                           |                               | Conducted Emission                   |
|                           |                               | Radiated Immunity                    |
|                           |                               | Conducted Immunity                   |
|                           | ESD (elektrostatic discharge) |                                      |
|                           | Safety                        |                                      |
|                           |                               | machine directive                    |
|                           |                               | medical equipment                    |
|                           | Radio communication           |                                      |
|                           |                               | Transmitter/receiver                 |
|                           |                               | antennas                             |
|                           |                               | cable/waveguide                      |
| Geology/Road construction |                               |                                      |
|                           | Asphalt, bitumes              |                                      |
|                           | concrete/sand/additives       |                                      |
|                           | Geology                       |                                      |
| Agriculture               |                               |                                      |
|                           | AP05(NL program)              |                                      |
|                           | Soil disease (Nematology)     |                                      |

| Main field  | Sub field                      | Parameters or technique in sub field |
|---|--------------------------------|--------------------------------------|
|   |                                | Microscopy                           |
| Animal Feeding stuff and raw materials for animal feeding stuff     |                                |                                      |
|   | Chemotherapeutics              |                                      |
|   |                                | Chromatography (LC)                  |
|   | Elements                       |                                      |
|   |                                | Spectrophotometry/Spectroscopy       |
|   |                                | Titrimetry                           |
|   | Enzymatic                      |                                      |
|   |                                | Spectrophotometry                    |
|   |                                | Titrimetry                           |
|   | Microbiology, detection method | See foodstuffs                       |
|   | Microbiology, enumeration      | See foodstuffs                       |
|   | Microscopy                     |                                      |
|   | Mycotoxine                     |                                      |
|   |                                | Chromatography (LC)                  |
|   | Fats                           |                                      |
|   |                                | Chromatography (GC)                  |
|   |                                | Coulometry                           |
|   |                                | Spectrophotometry/Spectroscopy       |
|   |                                | Titrimetry                           |
|   | Virology                       |                                      |
|   | Vitamines                      |                                      |
|   |                                | Chromatography (LC)                  |
|   | Weender                        |                                      |
|   |                                | Gravimeetry                          |
|   |                                | Titrimetry                           |
| Materials, Metal constructions, metals, joints and pressure vessels |                                |                                      |
|   | Destructive testing            |                                      |
|   |                                | Corrosion                            |
|   |                                | Hardness                             |
|   |                                | Tensile strength                     |
|   | Non Destructive Testing        |                                      |
|   |                                | Radiologic testing                   |
|   |                                | Penetrating testing                  |
|   |                                | Ultrasonic testing                   |
| Ball-bearings   |                                |                                      |
|   | Mechanical testing             |                                      |
| Toys  |                                |                                      |

| Main field                                | Sub field                                  | Parameters or technique in sub field |
|---|--|--------------------------------------|
|   | Safety                                     |                                      |
|   |  |                                      |
| Environmental                             |  |                                      |
| Soil<br>(including sludge)                |  |                                      |
|   | AP04 (Dutch law)                           |                                      |
|   |  | Package SG1                          |
|   |  | Package SG2                          |
|   | Asbestos                                   |                                      |
|   |  | Microscopy                           |
|   |  | Electron microscopy                  |
|   | Chemical parameters,<br>Inorganic          |                                      |
|   |  | Electrochemistry                     |
|   |  | Chromatography (ion)                 |
|   |  | Fotometry                            |
|   |  | Gravimetry                           |
|   |  | Spectroscopy                         |
|   | Chemical parameters,<br>Organic            |                                      |
|   |  | Chromatography (GC)                  |
|   |  | Chromatography (LC)                  |
|   |  | Coulometry (EOX)                     |
|   |  | GC/MS(MS)                            |
|   |  | LC/MS(MS)                            |
|   | Leach study (not AP04)                     |                                      |
|   |  |                                      |
| Water (all types excl.<br>Drinking water) |  |                                      |
|   | Sampling; Chemical<br>parameters           |                                      |
|   | Sampling;<br>Microbiological<br>parameters |                                      |
|   | Chemical parameters,<br>Inorganic          |                                      |
|   |  | Coulometry                           |
|   |  | Conductometry                        |
|   |  | Flow analysis                        |
|   |  | Electrochemistry                     |
|   |  | Potentiometry                        |
|   |  | Chromatography                       |
|   |  | Gravimetry                           |
|   |  | Nefelometry/Turbidimetry             |
|   |  | Radioactivity                        |

| Main field         | Sub field                             | Parameters or technique in sub field |
|--------------------|---------------------------------------|--------------------------------------|
|                    |                                       | Spectroscopy, Spectrofotometry       |
|                    |                                       | Titrimetry                           |
|                    | Chemical parameters, Inorganic        |                                      |
|                    |                                       | Chromatography (GC)                  |
|                    |                                       | Chromatography (LC)                  |
|                    |                                       | Coulometry                           |
|                    |                                       | GC/MS(MS)                            |
|                    |                                       | LC/MS(MS)                            |
|                    | Microbiology, Qualitative parameters  | See drinking water                   |
|                    | Microbiology, Quantitative parameters | See drinking water                   |
| Air                |                                       |                                      |
|                    | Stack-gasses, gas-carrying ducts;     |                                      |
|                    | Emission measurements                 |                                      |
|                    |                                       | Volumetric flowrate                  |
|                    |                                       | Gaseous components                   |
|                    |                                       | Particulate matter, aerosols         |
|                    | Sampling                              |                                      |
|                    |                                       | Gaseous components                   |
|                    |                                       | Particulate matter, aerosols         |
|                    | Ambiant air; Immission measurements   |                                      |
|                    |                                       | Gaseous components                   |
|                    |                                       | Radioactivity                        |
|                    |                                       | Particulate matter, aerosols         |
| Transport          |                                       |                                      |
| Constructions      |                                       |                                      |
|                    | Mechanical research                   |                                      |
| Ball-bearings      |                                       |                                      |
|                    | Mechanical research                   |                                      |
| Engines            |                                       |                                      |
|                    | Emission                              |                                      |
|                    | Noise                                 |                                      |
| Safety equipment   |                                       |                                      |
|                    | Mechanical testing                    |                                      |
| Foodstuff (humane) |                                       |                                      |
|                    | Sampling; Chemical parameters         |                                      |
|                    | Sampling; Microbiological parameters  |                                      |

| Main field | Sub field                        | Parameters or technique in sub field       |
|------------|----------------------------------|--|
|            | Chemical parameters, Inorganic   |  |
|            |                                  | Flow analysis                              |
|            |                                  | Electrochemistry                           |
|            |                                  | Potentiometry                              |
|            |                                  | Chromatography (ion)                       |
|            |                                  | Gravimetry                                 |
|            |                                  | Nefelometry/Turbidimetry                   |
|            |                                  | Radioactivity                              |
|            |                                  | Soxhlet extraction                         |
|            |                                  | Spectroscopy                               |
|            |                                  | Titrimetry                                 |
|            | Chemical parameters, Organic     |  |
|            |                                  | Chromatography (GC)                        |
|            |                                  | Chromatography (LC)                        |
|            |                                  | GC/MS(MS)                                  |
|            |                                  | LC/MS(MS)                                  |
|            |                                  | Titrimetry                                 |
|            | Microbiology, detection method   |  |
|            |                                  | Escherichia coli                           |
|            |                                  | Campylobacter                              |
|            |                                  | Bacillus cereus                            |
|            |                                  | Butyric acid bacteria (spores)             |
|            |                                  | Coliforms                                  |
|            |                                  | Enterobacteriaceae                         |
|            |                                  | Listeria monocytogenes                     |
|            |                                  | Gas forming salt tolerant microorganisms   |
|            |                                  | coagulase-positive staphylococci           |
|            |                                  | Bacteriophages                             |
|            | Microbiology, enumeration method |  |
|            |                                  | Aerobic mesophilic sporeforming bacteria   |
|            |                                  | Anaerobic mesophilic sporeforming bacteria |
|            |                                  | Bacillus cereus                            |
|            |                                  | Clostridium perfringens                    |
|            |                                  | Coliforms                                  |
|            |                                  | Enterobacteriaceae                         |
|            |                                  | Escherichia coli                           |
|            |                                  | Faecal enterococci                         |
|            |                                  | Yeasts                                     |
|            |                                  | Moulds                                     |
|            |                                  | Aerobic plate count at 30C                 |



| Main field | Sub field | Parameters or technique in sub field |
|------------|-----------|--------------------------------------|
|            |           | Anaerobic plate count at 30C         |
|            |           | Thermoresistant microorganisms       |
|            |           | Listeria monocytogenes               |
|            |           | Non lactic acid bacteria             |
|            |           | Lactic acid bacteria                 |
|            |           | Lactobacilli                         |
|            |           | Thermoresistant streptococci         |
|            |           | Pseudomonas                          |
|            |           | coagulase-positive staphylococci     |
|            |           | Sulphite-reducing clostridia         |
|            |           | Vibrio parahaemolyticus              |
|            |           | Faecal (thermotolerant) coliforms    |
|            |           | Aerobic plate count at 55C           |
|            |           | yeasts and moulds (total)            |
|            | PCR (GMO) | Bacillus cereus spores               |
|            | Virology  |                                      |