INTERNATIONAL STANDARD

ISO 8573-7

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Compressed air —

Part 7: Test method for viable microbiological contaminant content

Air comprimé —

Partie 7: Méthode d'essai pour la détermination de la teneur en polluants microbiologiques viables

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8573-7 was prepared by Technical Committee ISO/TC 118, *Compressors, pneumatic tools and pneumatic machines*, Subcommittee SC 4, *Quality of compressed air*.

ISO 8573 consists of the following parts, under the general title *Compressed air*:

— *Part 1: Contaminants and purity classes*

— *Part 2: Test methods for aerosol oil content*

— *Part 3: Test methods for measurement of humidity*

— *Part 4: Test methods for solid particle content*

— *Part 5: Test methods for oil vapour and organic solvent content*

— *Part 6: Test methods for gaseous contaminant content*

— *Part 7: Test method for viable microbiological contaminant content*

— *Part 8: Test methods for solid particle content by mass concentration*

— *Part 9: Test methods for liquid water content*

Compressed air —

Part 7:
Test method for viable microbiological contaminant content

1 Scope

This part of ISO 8573 specifies a test method for distinguishing viable, colony-forming, microbiological organisms (e.g. yeast, bacteria, endotoxins) from other solid particles which may be present in compressed air. One of a series of standards aimed at harmonizing air contamination measurements, it provides a means of sampling, incubating and determining the number of microbiological particles. The test method is suitable for determining purity classes in accordance with ISO 8573-1, and is intended to be used in conjunction with ISO 8573-4 when there is need to identify solid particles that are also viable, colony-forming units.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8573-1, *Compressed air — Part 1: Contaminants and purity classes*

ISO 8573-4, *Compressed air — Part 4: Test methods for solid particle content*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
microbiological organisms
particles characterized by their ability to form viable colonies

NOTE These can be identified as bacteria, yeast or fungi.

3.2
number of viable micro-organisms
number of micro-organisms having a potential for metabolic activity

3.3
culturable number
number of micro-organisms, single cells or aggregates able to form colonies on a solid nutrient medium

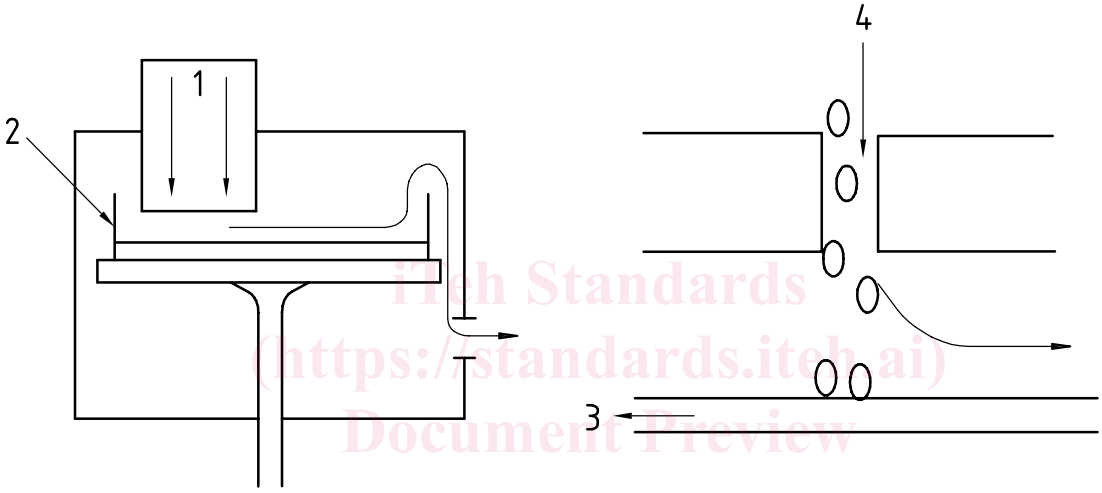
3.4
colony-forming unit
CFU
unit by which the culturable number is expressed

4 Method for verifying presence of viable micro-organisms by partial flow sampling

The method for verifying the presence of viable micro-organisms is to expose an agar nutrient to the compressed air sample. A quantitative assessment may be made by the method given in Annex B. See Annex D for details on the preparation of an agar plate with a culturable media.

For partial-flow sampling, a slit-sampler, a type of impaction air tester (see Figure 1), shall be used together with the method given in ISO 8573-4. Isokinetic sampling of the air shall be carried out and reduced until it is within the range of the sampler as identified by the manufacturer. Pressure reduction to atmospheric conditions and flow measurements shall be performed in order to establish compatibility with the manufacturer's recommendations or in accordance with ISO 8573-4. Where the flow is known, the time for the exposure of the agar media to the compressed air sample shall be recorded.

To assist in discriminating non-microbiological from microbiological particles, measurements shall be taken within 4 h.



Key

1 air intake
2 rotating Petri dish with agar
3 air outlet
4 air

Figure 1 — Slit-sampler

It is necessary to eliminate, as far as possible, the influence of liquids on particle size and number so that a correct reading can be obtained. The influence of water shall not be reduced by heating or drying of air, where this might otherwise have been appropriate, in order to avoid influencing the viability of microbiological organisms.

The influence of liquids other than water shall be given due consideration.

5 Operating conditions

Actual operating conditions shall be described in the test report (see Annex A).