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

GB/T 13277.7-2021

**Compressed air - Part 7: Test method for viable microbiological
contaminant content**

Issued on: December 31, 2021

Implemented on: July 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" drafted:

This document is part 7 of GB/T 13277 "Compressed Air": GB/T 13277 has published the following parts:

- Part 1: Pollutant purification levels;
- Part 2: Measurement method of suspended oil content;
- Part 3: Humidity measurement methods;
- Part 4: Solid particle measurement methods;
- Part 5: Measurement methods for oil vapors and organic solvents;
- Part 6: Measurement methods for the content of gaseous pollutants;
- Part 7: Measurement of active microbial content:

This document is modified to adopt ISO 8573-7:2003 "Compressed Air - Part 7: Measurement of Active Microbial Content":

Compared with ISO 8573-7:2003, this document has the following structural adjustments:

- Change the order of the appendices in the order in which they are located in the main text:

The technical differences between this document and ISO 8573-7:2003 and their reasons are as follows:

- Replaced ISO 8573-1 (see Chapter 7) with the normative reference GB/T 13277:1, the degree of consistency between the two documents

In order to modify it to adapt to our country's technical conditions and increase operability;

--- Replaced ISO 8573-4 (see Chapters 4 and 7) with the normatively cited GB/T 13277:4, consistent between the two documents

The degree of flexibility is modified to adapt to our country's technical conditions and increase operability:

The following editorial changes have been made to this document:

--- Changed the description and content of the scope of Chapter 1 to comply with the provisions of GB/T 1:1-2020;

--- Replaced ISO 8573-1 (see Chapter 1) with GB/T 13277:1 cited for information;

--- Replaced ISO 8573-4 with the informative reference GB/T 13277:4 (see Chapter 1 and Appendix D);

--- Change the "reference condition" in Appendix D to "standard state" so as to be consistent with other parts of GB/T 13277:

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

There are various pollutants in the compressed air compressed by the compressor, mainly including particles, water, oil, gaseous pollutants and active microorganisms:

etc: These pollutants will have various adverse effects in different gas usage occasions: In order to adapt to the development of compressed air purification equipment,

In order to meet the needs of air equipment, the development of compressed air quality measurement methods and standards has become an important task in the field of compressed air purification:

GB/T 13277 aims to establish a measurement method that is generally applicable to various pollutants in compressed air, and is intended to be composed of nine parts:

--- Part 1: Pollutant purification levels: The purpose is to explain various pollutants in compressed air, and to propose various pollutants

description method:

--- Part 2: Measurement method for suspended oil content: The purpose is to provide an operational and reliable measurement of suspended oil content in compressed air:

high-quality measurement method:

--- Part 3: Humidity measurement methods: The purpose is to provide an operable and

reliable method for the measurement of gaseous water content in compressed air:

Measurement methods:

--- Part 4: Solid particle measurement method: The purpose is to provide an operable,

A highly reliable measurement method:

--- Part 5: Measurement methods for oil vapors and organic solvents: The purpose is to measure the concentration of pollutants such as oil vapor in compressed air

Provides an actionable, reliable measurement method:

--- Part 6: Method for measuring the content of gaseous pollutants: The purpose is to reduce gaseous pollution such as carbon monoxide and carbon dioxide in compressed air

The measurement of the concentration of the substance provides an operational and reliable measurement method:

--- Part 7: Measurement of active microbial content: The purpose is to provide a reliable method for the measurement of active microbial content in compressed air:

Operational, reliable measurement method:

--- Part 8: Method for measuring the mass concentration of solid particles: The purpose is to improve the measurement of solid particle mass concentration in compressed air:

Provides an operational and reliable measurement method:

--- Part 9: Method for measuring liquid water content: The purpose is to provide operational, reliable measurement of liquid water content in compressed air:

high-quality measurement method:

compressed air

Part 7: Method for measuring the content of active microorganisms

1 Scope

This document specifies procedures for determining the presence, sampling, culturing and quantifying the presence of viable microorganisms (e.g: yeast, bacteria, endotoxins)

experiment method:

This document applies to the evaluation of purification levels according to GB/T 13277:1, and also applies to the determination of solid particles in combination with GB/T 13277:4:

active colony-forming units:

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document:

GB/T 13277:1 Compressed Air Part 1: Pollutant Purification Level (GB/T 13277:1-2008, ISO 8573-1:2001,

MOD)

GB/T 13277:4 Compressed Air Part 4: Method for the Measurement of Solid Particles (GB/T 13277:4-2015, ISO 8573-4:

2001, MOD)

3 Terms and Definitions

The following terms and definitions apply to this document:

3:1

microbiological organisms

Particles capable of forming active flora:

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

3:2

number of viable micro-organisms

The number of microorganisms with the potential for metabolic activity:

3:3

culturable number

The number of aggregates, single cells or microorganisms that can form colonies on a solid nutrient medium:

3:4

colony-forming unit

CFU

A unit that represents the culturable quantity: