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GB/T 13277.8-2023

Compressed air - Part 8: Test methods for solid particle content by mass concentration

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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 for Standardization Documents"

drafting:

This document is Part 8 of GB/T 13277 "Compressed Air": GB/T 13277 has issued the following parts:

--- Part 1: Pollutant purification level;

--- Part 2: Measurement method for suspended oil content;

--- Part 3: Humidity measurement method;

--- Part 4: Solid particle measurement method;

--- Part 5: Measurement methods for oil vapor and organic solvents;

--- Part 6: Measurement method of gaseous pollutant content;

--- Part 7: Method for measuring the content of active microorganisms;

--- Part 8: Measurement method of mass concentration of solid particles;

--- Part 9: Method for measuring liquid water content:

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This document is modified to adopt ISO 8573-8:2004 "Compressed air - Part 8: Method for measuring the mass concentration of solid particles":

The technical differences between this document and ISO 8573-8:2004 and their reasons are as follows:

--- Replaced ISO 1219-1 with the normatively quoted GB/T 786:1 to meet the technical requirements of our country (see Chapter 4);

--- Replaced ISO 3857-1 with the normatively quoted GB/T 4975 to meet the technical requirements of our country (see Chapter 3);

--- Replaced ISO 8573-1 with the normatively quoted GB/T 13277:1 to meet the technical requirements of our country (see Chapter 3);

--- Replaced ISO 8573-2 with the normatively quoted GB/T 13277:2 to meet the technical requirements of our country (see Chapter 6 and Chapter 7

chapter);

--- Replaced ISO 8573-4 with the normatively quoted GB/T 13277:4 to meet the technical requirements of our country (see Chapter 3, Chapter 6 and

Chapter 7);

--- Replaced ISO 5598 with the normative referenced GB/T 17446 to meet the technical requirements of our country (see Chapter 3):

The following editorial changes have been made to this document:

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

--- Deleted "---MPa(e), means the effective pressure:" in Chapter 4;

--- Change the title of 8:1 "Reference Conditions" to "Standard Status" to be consistent with other parts of GB/T 13277:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

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

These pollutants will have various adverse effects in different gas use occasions: In order to adapt to the development of compressed air purification equipment and meet the requirements of compression

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

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

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

description method:

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

Highly accurate measurement method:

--- Part 3: Humidity measurement method: The purpose is to provide an operable and reliable instrument 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,

Highly reliable measurement method:

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

Provide operational and reliable measurement methods:

--- Part 6: Measurement method of gaseous pollutant content: The purpose is to prevent gaseous pollution such as carbon monoxide and carbon dioxide in compressed air

The measurement of substance concentration provides an operable and reliable measurement method:

--- Part 7: Method for measuring the content of active microorganisms: The purpose is to provide reliable information for the measurement of active microbial content in compressed air:

Operational, reliable measurement method:

--- Part 8: Measurement method of solid particle mass concentration: The purpose is to improve the measurement of solid particle mass concentration in compressed air:

Provides operable and highly reliable measurement methods:

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

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Highly accurate measurement method:

Compressed air part 8:

Measurement method of mass concentration of solid particles

1 Scope

This document describes the test method and applicable particle size range for measuring the mass concentration of solid particles in compressed air, and specifies the

Sampling techniques, measurement methods, test result evaluation, uncertainty and test report requirements:

This document applies to the measurement of the mass concentration of solid particles in compressed air:

Note 1: The method described in this document is applicable to the particle concentration of grade 6~7 defined in GB/T 13277:1:

Note 2: The measurement method described in GB/T 13277:4 is applicable to the particle concentration of grade 0~5 defined in GB/T 13277:1:

Note 3: The mass concentration of solid particles is expressed by the mass of solid particles within the maximum particle size range:

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2 Normative references

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

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

GB/T 786:1 Graphical symbols and circuit diagrams of fluid transmission systems and components Part 1: Graphical symbols (GB/T 786:1-

2021, ISO 1219-1:2012, IDT)

GB/T 4975 Terminology General Rules for Positive Displacement Compressors (GB/T 4975-2018, ISO 3857-1:1977, ISO 3857-2:1977,

MOD)

GB/T 13277:1 Compressed air Part 1: Pollutant purification level (GB/T 13277:1-2008, ISO 8573-1:2001,

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