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Measurement method for soot emissions from aircraft engines

航空发动机碳烟颗粒排放测量方法

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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.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

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Measurement method for soot particle emissions from aircraft engines WARNING-Persons using this document should have practical experience in formal laboratory work. This document does not purportedly address all possible safety issues.

Users are responsible for taking appropriate safety and health measures and ensuring that the conditions stipulated by relevant national laws and regulations are met.

1 Scope

This document describes the measurement method for aircraft engine soot particle emissions and specifies the measurement parameters for aircraft engine soot particle emissions.

image, measurement system layout, measurement conditions, reagents and materials, instruments and equipment, measurement procedures, measurement data processing, quality assurance and control, and the content of the measurement report.

This document applies to the measurement of soot particle emissions from aircraft engines (hereinafter referred to as "engines").

2 Normative references

GB/T 34525

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Rated thrust

The maximum thrust that can be used for takeoff under normal operating conditions without water injection, in the international standard atmosphere at sea level static conditions.

3.2 catalytic stripper

A device for removing volatile substances by catalytic oxidation.

3.3 gas concentration

The volume fraction of the relevant components contained in a gas mixture.

3.4 Volatile particles

Particles that can condense after the exhaust gas is cooled to below 350°C.

Note. Such as sulfuric acid granules.

3.5 soot particles

The exhaust pipe outlet plane of an aircraft engine emits carbonaceous particles that are not volatilized when heated to 350°C.

3.6 particle mass concentration

The mass of particles per unit sample volume.

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