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

GB/T 42842.3-2026

**Fine bubble technology - Cleaning applications - Part 3: Test
method for cleaning hard flooring surfaces**

微细气泡技术 清洗应用 第3部分：硬地面清洗的试验方法

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 3 of GB/T (Z)42842 "Application of Microbubble Technology in Cleaning". GB/T (Z)42842 has been published.

The following section.

---Part 1: Test methods for cleaning surface salt (sodium chloride) stains (GB/Z 42842.1-2023);

---Part 2: Test methods for cleaning mechanical oil stains from machined metal parts (GB/T 42842.2-2023);

This document is modified to adopt ISO 21256-3:2021 "Application of microbubble technology in cleaning - Part 3: Test methods for cleaning hard floors".

This document has undergone the following structural adjustments compared to ISO 21256-3:2021.

---Split ISO 21256-3:2021 section 6.3 into 6.3 and 6.4;

---B.4 corresponds to A.4 of ISO 21256-3:2021;

---B.5 corresponds to A.5 in ISO 21256-3:2021.

The technical differences between this document and ISO 21256-3:2021, and the reasons therefor, are as follows.

---ISO 20480-1 (see Chapter 3) has been replaced with the normatively referenced GB/T 41914.1 to adapt to my country's technical conditions and improve [the relevant standards/requirements].

High operability;

---The terminology and definition of "cleaning index" have been added (see 3.4) to improve operability;

---Measuring equipment and other devices (see 5.2 and 5.3) have been added to improve operability;

---Increased visual requirements for sample deposition [see 6.4b)] to improve operability;

---The description of water temperature accuracy has been changed [see 7.1a)] to improve operability;

---Specific requirements for constant quality have been added [see 7.1f)] to improve operability;

---Appendix A has been changed to a normative appendix to improve operability;

---The composition of the first sample was changed (see Table A.1) to improve operability;

---The mixing time was changed (see A.2.2) to improve operability;

---The description of the operation steps has been changed (see A.3) to improve operability.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the Chinese Academy of Sciences.

This article will be under the jurisdiction of the National Technical Committee on Standardization of Microbubble Technology (SAC/TC584).

Introduction

Microbubble technology (FBT) has numerous applications in cleaning, agriculture, aquaculture, food, cosmetics, and biomedicine. With...

As microbubble technology matures and becomes more widespread, these applications will

expand.

Testing methods and standardization for hard floor cleaning are crucial for cleaning applications, and public awareness of the effectiveness of cleaning on floors and indoor spaces is also important.

Space means providing a safer and healthier environment.

This document provides the test methods, equipment details, applicable sample formulations, results analysis, and applicability.

ISO Standards' Contribution to the United Nations Sustainable Development Goals.
Microbubble Cleaning Technology.

FBT has made positive contributions to the United Nations Sustainable Development Goals (SDGs) for a better and more sustainable future for all mankind.

Depending on the application, microbubble technology contributes to several Sustainable Development Goals, including Goal 6 (Clean Water and Sanitation) and Goal 12.

(Responsible production and consumption) and Goal 13 (Climate Action).

FBT solution can serve as an alternative to chemical cleaning agents. The reduction in chemical cleaning agent usage can be directly measured and summarized to support [the following].

Sustainable Development Goal 6 (Clean Water and Sanitation). Reducing the use of chemical cleaning solutions can reduce waste generation and promote chemical...

Proper management of products and waste throughout their lifecycle supports Sustainable Development Goal 12 (responsible production and consumption). (Comparison with chemical cleaning) Using FBT agents can reduce energy consumption and support Sustainable Development Goal 13 (climate action). It also helps reduce the redundant production and use of these chemical cleaning agents.

Using it can reduce carbon dioxide emissions.

GB/T (Z)42842 "Application of Microbubble Technology in Cleaning" aims to establish universally applicable principles for the application of microbubble technology in cleaning.

The requirements are to be standardized and will consist of four parts.

---Part 1: Test Methods for Cleaning Surface Salt (Sodium Chloride) Stains. The aim is to establish a method for evaluating the effectiveness of microbubble water cleaning.

Test method for the staining performance of flour salt.

---Part 2: Test Methods for Cleaning Mechanical Oil Stains from Machined Metal Parts. The aim is to establish a method for evaluating microbubbles.

Test method for water cleaning performance of corrosion-resistant metal surfaces to remove mechanical oil stains.

---Part 3: Test Methods for Cleaning Hard Floors. The aim is to establish a test method for evaluating the performance of microbubble water cleaning on hard floors.

Verification method.

---Part 4: Test Methods for Oil Removal from Polyester Fabrics. The aim is to establish a method for evaluating the use of microbubble water for oil removal from polyester fabrics.

Test methods for oil properties.

Microbubble technology cleaning applications Part 3: Test Methods for Cleaning Hard Floors

1 Scope

This document describes the test method for cleaning hard floors.

This document compares the cleaning performance of microbubble solutions and alternative cleaning solutions in removing surface contaminants. The alternative cleaning solutions mentioned here...

The liquid is another type of microbubble solution, which can also be municipal tap water or commercially available cleaning solutions that meet the manufacturer's standards.

This document does not apply to situations where contaminants excessively adhere to the surface.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

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

This document.

GB/T 41914.1 Microbubble Technology - General Rules for the Use and Measurement of Microbubbles - Part 1: Terminology (GB/T 41914.1-2022, ISO 20480-1:2017, IDT)

3 Terms and Definitions

The terms and definitions defined in GB/T 41914.1 and the following terms and definitions apply to this document.

pollutant