



DPC: 24/30461139 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

Date: 23 July 2024

Origin: International

Latest date for receipt of comments: 15 September 2024

Project No. 2022/01834

Responsible committee: LBI/50 Fine Bubble Technology (FBT)

Interested committees:

Title: Draft BS ISO 21910-2 Fine bubble technology - Characterization of microbubbles. Part 2: In-situ dynamic image analysis method.

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Introduction

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 21910-2

Fine bubble technology — Characterization of microbubbles — Part 2: In-situ dynamic image analysis method

ICS: 07.030

ISO/TC 281

Secretariat: JISC

Voting begins on:
2024-07-23

Voting terminates on:
2024-10-15

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ISO/DIS 21910-2:2024(en)

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 281, *Fine bubble technology*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Fine bubbles are bubbles with the volume equivalent diameters smaller than 100 μm in liquid. Fine bubbles are divided into two subgroups: microbubbles with the volume equivalent diameters in the range from equal or greater than 1 μm to smaller than 100 μm and ultrafine bubbles with the volume equivalent diameters smaller than 1 μm .

In recent years, many unique properties related to microbubbles have been revealed related to their large specific surface area, instability, and motion characteristics. Microbubble technology with bubbles formed with various gases, such as air, oxygen and hydrogen, is widely used in the fields of agriculture, aquatic and food industry, energy and minerals, processing and manufacturing, environmental, cleaning, health and etc.

Many properties of microbubble dispersion systems in liquid depend largely on the composition, geometry and size distribution of the bubbles. Because of their thermodynamic instability in a dynamic evolution process, rapid in-situ data acquisition and accurate identification of bubbles is the key to character the bubbles in the measurement locations and in real time. It is of great significance to track and measure bubble size, size distribution and dynamic evolution of microbubbles in liquid in real time in order to understand the properties of microbubbles and to optimize and control the microbubble generation process. The in-situ dynamic image analysis is such a method to satisfy the above needs.

