International Standard

ISO 24261-1

Second edition
2026-11

Fine bubble technology — Elimination method for sample characterization —

Part 1: Evaluation procedure

Sample Document

Technologie des fines bulles — Méthode d'élimination pour la caractérisation de l'échantillon —

Partie 1: Mode opératoire d'évaluation

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Foreword

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

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This second edition cancels and replaces the first edition (ISO 24261-1:2020), of which it constitutes a minor revision.

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The changes are as follows:

— in 7.1, the following list item was added "f) Number of this document";

— in Figure A.1 and Figure A.2, the unit "million/ml" was revised to "$\times 10^6$ particles/ml".

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Introduction

Fine bubble technology has recently seen growth in its application to markets in cleaning, water treatment, agriculture, and aquaculture as well as biomedical fields. Now, methods are required to evaluate the generation systems. Characteristics like number concentration index and the size index of fine bubbles are especially indispensable for those evaluations.

Furthermore, fine bubble dispersion water may contain other solid and liquid particles. Due to this concern, it may be impossible to evaluate the characteristics of fine bubbles. Therefore, a method to address the presence of other particles is urgently needed.

There are several measurement methods widely used to evaluate the number concentration index and the size index of particles. However, there are few methods to distinguish bubbles in fine bubble dispersions from other particles.

This issue can be resolved, using the phenomenon by which the bubbles can be eliminated without any residues after dissolution and flotation. If a method that eliminates fine bubbles in specific size range is known, it is possible to distinguish fine bubbles from other solid and liquid particles. The eliminated particles can be fine bubbles. A solution in which fine bubbles are not present or have been almost completely removed can be used as a blank solution for background measurements. Standardizing elimination techniques and evaluation methods are required as fine bubble elimination techniques will continue to develop further.

This document is intended to specify the evaluation method for elimination efficiency of fine bubbles from fine bubble dispersions in water.

A standard method to evaluate fine bubble elimination efficiency enables easy and clear comparison among several techniques and presents optimal conditions for respective elimination techniques.

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