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**Fine bubble technology — General principles for usage and measurement of fine bubbles —**

**Part 2:  
Categorization of the attributes of fine bubbles**

*Technologie des fines bulles — Principes généraux pour l'utilisation et la mesure des fines bulles —*

*Partie 2: Classification des attributs des fines bulles*

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## Foreword

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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](http://www.iso.org/directives)).

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

A list of all parts in the ISO 20480 series can be found on the ISO website.

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](http://www.iso.org/members.html).

## Introduction

In recent years, readily available measurement techniques of bubbles have made it possible to characterize microbubbles and ultrafine bubbles. Such techniques have shown that ultrafine bubbles can almost remain as they are for a number of months.

Fine bubble technologies are very new, and their applications are useful in a number of fields today. Developing appropriate terminology for such a diverse area of technology is therefore critical to business trade or product acceptance, in view of the wide range of users of fine bubbles.

For better communication among the users of fine bubbles, this document introduces the quality criteria of a medium such as water, as well as two indices, one for size and the other for number concentration. This document also provides an explanation for classifying fine bubbles by dimensional characteristics and by rise velocity.

It should be noted that the motion of bubbles in a medium can be determined by buoyancy forces or randomly and thermally activated processes leading to Brownian motion. For this reason, larger bubbles can display buoyant behaviour (rise upwards) and smaller bubbles remain in the liquid medium displaying random motion. This document focuses on the definitions of such entities.

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