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Water quality — Determination of pH_t in sea water — Method using the indicator dye *m*-cresol purple

Qualité de l'eau — Détermination du pH_t dans l'eau de mer — Méthode utilisant l'indicateur coloré au pourpre de m-*crésol*

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Foreword

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The committee responsible for this document is ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

Introduction

The greenhouse effect induced by anthropogenic carbon dioxide, CO_2, in the atmosphere is one of the serious global environmental issues. A key factor controlling the atmospheric CO_2 is its absorption into the ocean. As a result of the absorption, the pH in the upper layer of the ocean is observed to have fallen gradually, and its influence on the living organisms is a matter of concern all over the world.

On the other hand, carbon capture and storage (CCS) technology is considered as a useful means of reducing the CO_2 emissions from fossil fuel. When ocean environment such as sub-seabed aquifer is selected as a storage site, the monitoring of carbonate system including pH in sea water becomes very important. The analytical method for pH_t in sea water (the total hydrogen ion concentration pH scale) samples requires specific conditions and techniques essential to the precise and accurate determination. This International Standard describes a method for the determination of pH_t in sea water with the repeatability less than 0,003.

This method will provide international communities accurate data sets on pH_t in sea water being compatible with each other. This is the base of national and international operational observation or monitoring programs of the oceanic carbonate system as well as individual research works.