TECHNICAL SPECIFICATION

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Water quality — Determination of arsenic(III) and arsenic(V) species — Method using high performance liquid chromatography (HPLC) with detection by inductively coupled plasma mass spectrometry (ICP-MS) or hydride generation atomic fluorescence spectrometry (HG-AFS)

Qualité de l'eau — Détermination des formes chimiques (III) et (V) d'arsenic — Méthode par chromatographie en phase liquide à haute performance (HPLC) avec détection par spectrométrie de masse par torche à plasma (ICP-MS) ou génération d'hydrure fluorescence atomique (HG-AFS)

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Foreword

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Introduction

In the environment, metals and metalloids are found in the form of various chemical species. Chemical speciation makes it possible to identify and quantify these different species. For the same metal or metalloid, given that the toxicity of each compound may vary significantly, it can be useful to quantify each of the species present in a given sample. For arsenic, the toxicity of the various species varies considerably; inorganic species are recognized as being more toxic than organic species and, for example, the toxicity of As(III) is greater than that of As(V). This method is primarily applicable to the determination of arsenite (As(III)) and arsenate (As(V)) as these are the main species of interest and are the predominant species found in potable water samples from the underlying geological strata in many parts of the world. Arsenic speciation measurements are important to establish and select the best water treatment technology for arsenic removal from raw waters containing significant levels of arsenic.