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## **Marine technology — Product water quality of seawater reverse osmosis (RO) desalination — Guidelines for municipal water supply**

*Technologie maritime — Qualité de l'eau produite par le dessalement de l'eau de mer par osmose inverse (OI) — Lignes directrices pour les réseaux municipaux d'eau potable*



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CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
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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. [www.iso.org/directives](http://www.iso.org/directives)

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This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 13, *Marine 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](http://www.iso.org/members.html).

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## Introduction

With population growth, urbanization, climate change impacts and increases in household and industrial uses, fresh water scarcity will definitely affect the sustainable development of society. Seawater desalination is an effective way to meet the water needs. In some regions, it is almost the primary source of municipal water supply.

Because of technology and cost advantages, the reverse osmosis (RO) process has been used increasingly for seawater desalination. However, desalted water of seawater RO desalination is low in minerals and poorly buffered. It is usually aggressive to metallic materials used in equipment and distribution pipelines. To solve this problem, the post-treatment of desalted water, such as the addition of minerals and/or blending of waters, is necessary to achieve a balanced mineral content. Therefore, it is necessary to monitor product water quality after post-treatment to confirm the safety for municipal water supply.

Consequently, standardization of the product water quality is important and useful for the protection of corrosive pipelines and related equipment. The key parameters are monitored to meet the related limits and range. The product water will be compatible with municipal pipelines and related equipment.

These guidelines provide key parameters to manage the product water quality of seawater RO desalination for municipal water supply. They are intended to assist water engineers, authorities, decision makers and stakeholders in evaluating the compatibility of product water with pipelines and devices.