

Chemicals used for treatment of water intended for human consumption — Potassium permanganate

ICS 13.060.20; 71.100.80

National foreword

This British Standard is the UK implementation of EN 12672:2008. It supersedes BS EN 12672:2000 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CII/59, Chemicals for drinking water treatment.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

**Chemicals used for treatment of water intended for human
consumption - Potassium permanganate**

Produits chimiques utilisés pour le traitement de l'eau
destinée à la consommation humaine - Permanganate de
potassium

Produkte zur Aufbereitung von Wasser für den
menschlichen Gebrauch - Kaliumpermanganat

This European Standard was approved by CEN on 28 June 2008.

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Foreword

This document (EN 12672:2008) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2009, and conflicting national standards shall be withdrawn at the latest by January 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12672:2000.

Significant technical difference between this edition and EN 12672:2000 is as follows:

- Deletion of reference to EU Directive 80/778/EEC of July 15, 1980 in order to take into account the latest Directive in force (see [1]).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this European Standard:

- a) this European Standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;
- b) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

NOTE Conformity with this European Standard does not confer or imply acceptance or approval of the product in any of the Member States of the EU or EFTA. The use of the product covered by this European Standard is subject to regulation or control by National Authorities.

1 Scope

This European Standard is applicable to potassium permanganate used for treatment of water intended for human consumption. It describes the characteristics of potassium permanganate and specifies the requirements and the corresponding test methods for potassium permanganate. It gives information on its use in water treatment.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1233, *Water quality - Determination of chromium - Atomic absorption spectrometric methods*

EN 1483, *Water quality - Determination of mercury – Method using atomic absorption spectrometry*

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods* (ISO 3696:1987)

EN ISO 11885, *Water quality - Determination of 33 elements by inductively coupled plasma atomic emission spectroscopy* (ISO 11885:1996)

EN ISO 11969, *Water quality - Determination of arsenic – Atomic absorption spectrometric method (hydride technique)* (ISO 11969:1996)

ISO 3165, *Sampling of chemical products for industrial use - Safety in sampling*

ISO 3856-2, *Paints and varnishes - Determination of "soluble" metal content - Part 2: Determination of antimony content - Flame atomic absorption spectrometric method and Rhodamine B spectrophotometric method*

ISO 6206, *Chemical products for industrial use - Sampling – Vocabulary*

ISO 8213, *Chemical products for industrial use - Sampling techniques - Solid chemical products in the form of particles varying from powders to coarse lumps*

ISO 8288:1986, *Water quality - Determination of cobalt, nickel, copper, zinc, cadmium and lead - Flame atomic absorption spectrometric methods*

ISO 9965, *Water quality - Determination of selenium - Atomic absorption spectrometric method (hydride technique)*

3 Description

3.1 Identification

3.1.1 Chemical name

Potassium permanganate.

3.1.2 Synonym or common name

Permanganate of potash.

3.1.3 Relative molecular mass

158,04

3.1.4 Empirical formula

KMnO_4

3.1.5 Chemical formula

KMnO_4

3.1.6 CAS Registry Number ¹⁾

7722-64-7

3.1.7 EINECS reference ²⁾

231-760-3

3.2 Commercial forms

Solid product, consisting of rhombic crystals. For water treatment the commercial forms normally used are:

- technical grade to be dosed in liquid form, dissolved in water;
- free-flowing grade to be dosed either in solid form or dissolved in water.

3.3 Physical properties

3.3.1 Appearance

Crystals of a dark purple or bronze-like colour; almost opaque by transmitted light and of a blue metallic lustre by reflected light.

The free-flowing grade can present a different colour, usually greyish.

3.3.2 Density

The density of the product is $2,70 \text{ g/cm}^3$ at 20°C .

The bulk density is between $1,45 \text{ g/cm}^3$ and $1,60 \text{ g/cm}^3$.

¹⁾ Chemicals Abstracts Service Registry Number.

²⁾ European Inventory of Existing Commercial Chemical Substances.