SLOVENSKI STANDARD
SIST EN ISO 80000-9:2019

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Nadomešča:
SIST EN ISO 80000-9:2013

Veličine in enote - 9. del: Fizikalna kemija in molekulska fizika (ISO 80000-9:2019)

Quantities and units - Part 9: Physical chemistry and molecular physics (ISO 80000-9:2019)

Größen und Einheiten - Teil 9: Physikalische Chemie und Molekularphysik (ISO 80000-9:2019)

Grandeurs et unités - Partie 9: Chimie physique et physique moléculaire (ISO 80000-9:2019)

Ta slovenski standard je istoveten z: **EN ISO 80000-9:2019**

ICS:

01.060	Veličine in enote	Quantities and units
07.030	Fizika. Kemija	Physics. Chemistry

SIST EN ISO 80000-9:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 80000-9

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ICS 01.060

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English Version

Quantities and units - Part 9: Physical chemistry and molecular physics (ISO 80000-9:2019)

Grandeurs et unités - Partie 9: Chimie physique et physique moléculaire (ISO 80000-9:2019)

Größen und Einheiten - Teil 9: Physikalische Chemie und Molekularphysik (ISO 80000-9:2019)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 80000-9:2019) has been prepared by Technical Committee ISO/TC 12 "Quantities and units" in collaboration with Technical Committee CEN/SS F02 “Units and symbols” the secretariat of which is held by CCMC.

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of an identical text or by endorsement, at the latest by April 2020, and conflicting national standards shall be withdrawn at the latest by April 2020.

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

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Endorsement notice

The text of ISO 80000-9:2019 has been approved by CEN as EN ISO 80000-9:2019 without any modification.

INTERNATIONAL STANDARD

ISO 80000-9

Second edition
2019-08

Quantities and units —

Part 9: Physical chemistry and molecular physics

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Partie 9: Chimie physique et physique moléculaire

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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 (see www. iso. org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www. iso .org/iso/foreword. html.

This document was prepared by Technical Committee ISO/TC 12, *Quantities and units*, in collaboration with Technical Committee IEC/TC 25, *Quantities and units*.

This second edition cancels and replaces the first edition (ISO 80000-9:2009), which has been technically revised. It also incorporates the Amendment ISO 80000-9:2009/Amd. 1:2011.

The main changes compared to the previous edition are as follows:

— the table giving the quantities and units has been simplified;

— some definitions and the remarks have been stated physically more precisely.

A list of all parts in the ISO 80000 and IEC 80000 series can be found on the ISO and IEC websites.

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.

Introduction

In this document, symbols for substances are shown as subscripts, for example c_B, w_B, p_B for substance B.

Generally, it is advisable to put symbols for substances and their states in parentheses on the same line as the main symbol, for example $c(H_2SO_4)$.

In the following, the letter s is used to denote the solid state, the letter l the liquid state, and the letter g the gaseous state.

The symbol * used as a superscript means "pure".

The plimsoll sign $^{\ominus}$ is used to denote a standard in general.

EXAMPLE 1 $\mu_B^*(T,p)$ for chemical potential of pure substance B concerning a mixture system including the substance B.

EXAMPLE 2 $C_{m,p}^{\ominus}(H_2O, g, 298{,}15\ K) = 33{,}58\ J \cdot K^{-1} \cdot mol^{-1}$ for standard molar heat capacity at constant pressure.

In an expression such as

$$\varphi_B = x_B \frac{V_{m,B}}{\sum x_i V_{m,i}}$$

where

φ_B is the volume fraction of a particular substance B in a mixture of substances A, B, C, ...;

x_i is the amount-of-substance fraction of i; and

$V_{m,i}$ is the molar volume of the pure substance i, where all the molar volumes $V_{m,A}$, $V_{m,B}$, $V_{m,C}$, ... are taken at the same temperature and pressure,

the summation on the right-hand side is that over all the substances A, B, C, ... of which a mixture is composed, so that $\sum x_i = 1$. Throughout the document sums are running over the respective index.

Additional qualifying information on a quantity symbol may be added as a subscript or superscript (see e.g. item 9-21) or in parentheses after the symbol.