

Gas cylinders - Gases and gas mixtures - Determination of toxicity for the selection of cylinder valve outlets (ISO 10298:2018)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| See Eesti standard EVS-EN ISO 10298:2020 sisaldab Euroopa standardi EN ISO 10298:2020 ingliskeelset teksti. | This Estonian standard EVS-EN ISO 10298:2020 consists of the English text of the European standard EN ISO 10298:2020. |
| Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas | This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation. |
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| Standard on kättesaadav Eesti Standardikeskusest. | The standard is available from the Estonian Centre for Standardisation. |

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English Version

Gas cylinders - Gases and gas mixtures - Determination of
toxicity for the selection of cylinder valve outlets (ISO
10298:2018)

Bouteilles à gaz - Gaz et mélanges de gaz -
Détermination de la toxicité pour le choix des raccords
de sortie de robinets (ISO 10298:2018)

Gasflaschen - Gase und Gasgemische - Bestimmung der
Toxizität zur Auswahl von Ventilausgängen (ISO
10298:2018)

This European Standard was approved by CEN on 28 September 2020.

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

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European foreword

The text of ISO 10298:2018 has been prepared by Technical Committee ISO/TC 58 "Gas cylinders" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 10298:2020 by Technical Committee CEN/TC 23 "Transportable gas cylinders" the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by April 2021, and conflicting national standards shall be withdrawn at the latest by April 2021.

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 10298:2018 has been approved by CEN as EN ISO 10298:2020 without any modification.

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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 on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by ISO/TC 58 *Gas cylinders*, SC 2, *Cylinder fittings*.

This third edition cancels and replaces the second edition (ISO 10298:2010), which has been technically revised.

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

- The Scope and Clause 4 have been clarified.
- The terms and definitions in Clause 3 have been changed and, in particular, the reference to FTSC codes (that were in ISO 5145) was changed to ISO 14456.
- Some LC50 values have been updated.

Introduction

ISO 5145 specifies the dimensions of different valve outlets for different compatible gas groups. These compatible gas groups are determined according to practical criteria defined in ISO 14456.

These criteria are based on certain physical, chemical, toxic and corrosive properties of the gases. In particular, the tissue corrosiveness is considered in this document.

The aim of this document is to assign for each gas a classification category that takes into account the toxicity by inhalation of the gas. For gas mixtures containing toxic components a calculation based on the method specified in the GHS is proposed.

Since the publication of the first edition of ISO 10298, this International Standard has been used for other purposes than the selection of cylinder valve outlets, e.g. providing toxicity data for the classification of gas and gas mixtures according to the international transport regulations and according to the classification of dangerous substances regulations, which since 2003 is under the umbrella of the Globally Harmonized System (GHS).

Gas cylinders — Gases and gas mixtures — Determination of toxicity for the selection of cylinder valve outlets

1 Scope

This document lists the best available acute-toxicity data of gases taken from a search of the current literature to allow the classification of gases and gas mixtures for toxicity by inhalation.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online Browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

lethal concentration 50

LC₅₀

concentration of a substance in air exposure to which, for a specified length of time, it is expected to cause the death of 50 % of the entire defined experimental animal population after a defined time period

Note 1 to entry: See [Annex A](#) for the selection of this LC₅₀ value.

3.2

toxicity level

level of toxicity of gases and gas mixtures

Note 1 to entry: In ISO 14456, the toxicity level is divided into three groups:

- Subdivision 1: non toxic [$LC_{50} > 5\,000$ ppm (volume fraction)]
- Subdivision 2: toxic [200 ppm (volume fraction) $< LC_{50} \leq 5\,000$ ppm (volume fraction)]
- Subdivision 3: very toxic [$LC_{50} \leq 200$ ppm (volume fraction)]

These subdivisions are sometimes used in transport regulations.

where

LC₅₀ values correspond to 1 h exposure to gas;

ppm (volume fraction) indicates parts per million, by volume.

Note 2 to entry: In the GHS, the inhalation toxicity levels are: