SLOVENSKI STANDARD
SIST EN 1089-3:1999

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Plinske jeklenke - Oznaḷ evanje jeklenk (razen UNP) - 3. del: Barvno oznaḷ evanje

Transportable gas cylinders - Cylinder identification - Part 3: Colour coding

Ortsbewegliche Gasflaschen - Gasflaschen-Kennzeichnung - Teil 3: Farbcodierung

Bouteilles a gaz transportables - Identification de la bouteille a gaz - Partie 3: Code couleur

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English version

Transportable gas cylinders - Cylinder identification - Part 3: Colour coding

Bouteilles à gaz transportables - Identification de la bouteille à gaz - Partie 3: Code couleur

Ortsbewegliche Gasflaschen - Gasflaschen-Kennzeichnung - Teil 3: Farbcodierung

This European Standard was approved by CEN on 1997-01-09. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Contents

Foreword

This European Standard has been prepared 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of an identical text or by endorsement, at the latest by August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

This European Standard is a three part standard, belonging to a series of standards specifying gas cylinder identification requirements:

Part 1: Stampmarking;
Part 2: Precautionary labels;
Part 3: Colour coding.

Some current National and International standards and regulations covering colour coding of gas cylinders may be in conflict with this standard.

Annex D (normative) lists the special national conditions causing a deviation from this standard for a transitional period ending at the latest 2006-07-01.

When harmonization is reached, it is expected that the requirement to apply the letter "N" (see clause 5) will be removed by a revision of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

Cylinder colours refer to the contents of cylinders and are used to complement cylinder labels which are the primary method of indicating cylinder contents.

Cylinder colours are an important method of contents identification when it is not possible to read labels, particularly when it is not possible to approach close to a cylinder.

1 Scope

This European Standard specifies a colour coding system for the identification of the contents of industrial and medical gas cylinders with particular reference to the property of the gas or gas mixture.

This standard does not apply to cylinders containing liquefied petroleum gases (LPG) or to fire extinguishers.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate place in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 720-2	Transportable gas cylinders - Gases and gas mixtures - Part 2: Determination of flammability and oxidizing ability of gases and gas mixtures
ISO 32	Gas cylinders for medical use - Marking for identification of content
ISO 10298	Determination of the toxicity of a gas or gas mixture
ISO 13338	Determination of tissue corrosiveness of a gas or gas mixture

3 Principles

Colour coding is used primarily to identify the hazard associated with the contents of a cylinder.

In addition, to assist users, certain gases, particularly those used for medical purposes, have a specific identification colour consistent with ISO 32.

Identification colours shall be applied to cylinder shoulders. The cylinder body and valve protection device may be coloured for other purposes. However, the use of a colour for the cylinder body which allows misinterpretation of the hazard should be avoided.

Colours used shall be in accordance with annex A.

4 Colour coding system

4.1 Gas properties

Unless specifically identified in 4.2.1 all gases and gas mixtures shall be identified by a colour classification indicating the property of the contents in accordance with the risk diamond on cylinder labels.

The property is classified in the following descending order of hazard:

a) Toxic and/or corrosive (in accordance with ISO 10298 and ISO 13338) YELLOW;

b) Flammable (in accordance with EN 720-2) RED;

c) Oxidizing (in accordance with EN 720-2) LIGHT BLUE;

d) Inert (non toxic, non corrosive, non flammable, non oxidizing) BRIGHT GREEN.

WARNING: The colour "BRIGHT GREEN" shall not be used for air for inhalation (e.g. breathing apparatus), see 4.4.

When a gas or gas mixture has two hazard properties then the cylinder shoulder shall be coloured in accordance with the primary hazard.

The colour of the secondary hazard can also be applied to the cylinder shoulder:

a) Toxic (and/or corrosive) and flammable YELLOW plus RED;

b) Toxic (and/or corrosive) and oxidizing YELLOW plus LIGHT BLUE.

When two colours are applied to the cylinder shoulder they should be in one of the formats (bands or quadrants) identified in annex B.

4.2 Specific gases

4.2.1 The following gases shall be identified by specific colours rather than the colour system defined in 4.1.

a) Flammable gases:
Acetylene MAROON;

b) Oxidizing gases:

Oxygen	WHITE;
Nitrous oxide	BLUE.

4.2.2 Additionally, inert gases for medical applications shall be further differentiated by use of the following colours:

- Argon	DARK GREEN;
- Nitrogen	BLACK;
- Carbon dioxide	GREY;
- Helium	BROWN.

These colours may also be used for applications other than medical.

4.3 Mixtures of inert gases

When inert gases are mixed, combinations of the optional colours of the specific component gases, listed in 4.2.2, can be used to identify the cylinder contents (see annex B).

4.4 Gas mixtures used for inhalation

The following medical and breathing gas mixtures containing oxygen shall be identified using the colour of the components listed in 4.2:

a) Air or synthetic air	WHITE plus BLACK;
b) Helium/oxygen	WHITE plus BROWN;
c) Oxygen/carbon dioxide	WHITE plus GREY;
d) Oxygen/nitrous oxide	WHITE plus BLUE.

These colours shall not be used for industrial gas mixtures containing these components.

5 Implementation

All cylinders, colour coded in accordance with this standard, shall have the letter "N" marked twice on the shoulder of the cylinder. These markings shall be diametrically opposed, in a colour distinct from the colours of the cylinder shoulder. The size and shape of the letter "N" shall be as indicated in annex C.