

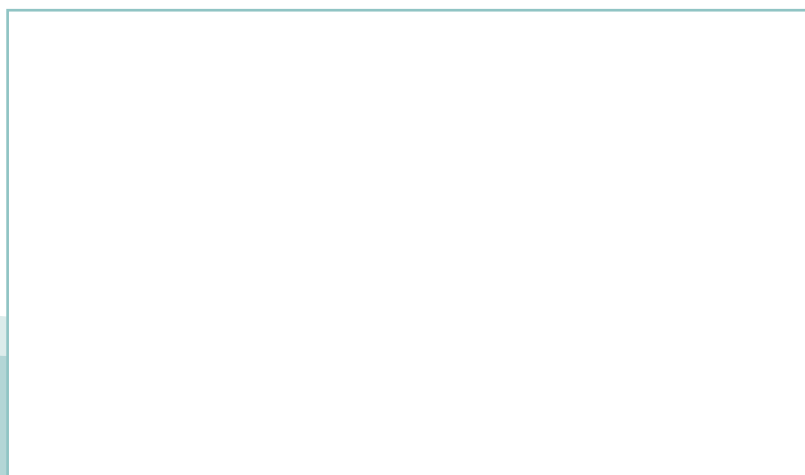
SVENSK STANDARD

SS-EN 1089-3:2011

Fastställt/Approved: 2011-07-22
Publicerad/Published: 2011-08-17
Utgåva/Edition: 3
Språk/Language: engelska/English
ICS: 01.070; 23.020.30

Gasflaskor – Märkning (exklusive gasol – LPG) – Del 3: Färgmärkning

Transportable gas cylinders – Gas cylinder identification (excluding LPG) – Part 3: Colour coding



Standarder får världen att fungera

SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.

Delta och påverka

Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

Ta del av det färdiga arbetet

Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standardpaket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

Utveckla din kompetens och lyckas bättre i ditt arbete

Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på www.sis.se eller ta kontakt med oss på tel 08-555 523 00.



Standards make the world go round

SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.

Take part and have influence

As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

Get to know the finished work

We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

Increase understanding and improve perception

With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

If you want to know more about SIS, or how standards can streamline your organisation, please visit www.sis.se or contact us on phone +46 (0)8-555 523 00



Europastandarden EN 1089-3:2011 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 1089-3:2011.

Denna standard ersätter SS-EN 1089-3:2004, utgåva 2.

The European Standard EN 1089-3:2011 has the status of a Swedish Standard. This document contains the official version of EN 1089-3:2011.

This standard supersedes the Swedish Standard SS-EN 1089-3:2004, edition 2.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Uppllysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna uppllysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Gasflaskor, SIS/TK 296.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

EUROPEAN STANDARD

EN 1089-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2011

ICS 01.070; 23.020.30

Supersedes EN 1089-3:2004

English Version

Transportable gas cylinders - Gas cylinder identification (excluding LPG) - Part 3: Colour coding

Bouteilles à gaz transportables - Identification de la
bouteille à gaz (GPL exclu) - Partie 3: Code couleur

Ortsbewegliche Gasflaschen - Gasflaschen-Kennzeichnung
(ausgenommen Flüssiggas (LPG)) - Teil 3: Farbcodierung

This European Standard was approved by CEN on 4 May 2011.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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 United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Symbols and abbreviations	6
5 Principle.....	6
6 Colour coding system	6
6.1 General.....	6
6.2 Shoulder	6
6.2.1 General.....	6
6.2.2 Gas properties.....	6
6.2.3 Specific single gases	7
6.2.4 Mixtures of inert gases.....	8
6.2.5 Oxygen mixtures and air for medical use and breathing application	8
6.2.6 Specific medical gas mixtures	8
6.3 Body.....	8
7 Implementation	8
Annex A (normative) Colour references	9
Annex B (informative) Colour location.....	10
Annex C (normative) Letter " N "	12
Annex D (informative) Guidance for the selection of shoulder colours	13
D.1 General.....	13
D.2 Typical examples	13
Bibliography	15

Foreword

This document (EN 1089-3:2011) 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 January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

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 1089-3:2004.

This document has been technically revised by the following:

- a) the white colouration of gas cylinder body dedicated for medical use;
- b) the new specific colour dedicated to nitric oxide/ nitrogen for medical use;
- c) the introduction of definitions (gas for medical use, breathing gas, industrial gas);
- d) the application of bright green colouration for inert gas mixtures N_2 or He with O_2 less than 20 % (exception for the two specific colours);
- e) the restriction of configuration of two colours on shoulder as quadrants to air (medical use or for breathing use);
- f) a guidance for the selection of shoulder with typical examples of assignment of colour.

This document 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).

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, Croatia, 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

The labelling of gas cylinders as required by the RID/ADR- Regulations is the primary method of indicating dangers of cylinder contents. However, colour coding is used to identify the contents of gas cylinders from a distance, e.g. in case of a fire. It is recognized that other systems are in use and may be used in conjunction with the requirements of this European Standard.

This European standard, along with EN ISO 13769, EN ISO 21007-1 and EN ISO 21007-2 belongs to a series of European Standards specifying gas cylinder identification requirements.

NOTE Labelling and marking of gas cylinders is subject to provisions of RID/ADR which take precedence over marking clauses in this standard.

1 Scope

This European Standard specifies a colour coding system for the secondary method of identification of the contents of gas cylinders for industrial gases, breathing gas application and gases for medical use with particular reference to the properties of the gas or gas mixture.

This European Standard does not apply to cylinders containing liquefied petroleum gas (LPG), to refrigerant gases, to portable fire extinguishers or stationary cylinder extinguishing. Bundle colour coding is not addressed by this or other standards.

NOTE LPG includes substances carried under the UN number 1965 "Hydrocarbon gas mixture, liquefied, N.O.S."

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 ISO 10156, *Gases and gas mixtures — Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets (ISO 10156:2010)*

ISO 5145, *Cylinder valve outlets for gases and gas mixtures — Selection and dimensioning*

ISO 10298, *Determination of toxicity of a gas or gas mixture*

ISO 13338, *Determination of tissue corrosiveness of a gas or gas mixture*

European pharmacopoeia, monograph 1684

3 Terms and definitions

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

3.1

gas for medical use

any gas or mixture of gases intended to be administered to patients for therapeutic, diagnostic or prophylactic purposes, with or without pharmacological action, or to be used for surgical tools, and it covers both medicinal and medical gases (see ISO 5145)

3.2

inert gas

non-toxic, non-corrosive, non-flammable and non-oxidizing gas or gas mixture

3.3

synthetic air

for medical use to refer to pharmacopoeia, monograph 1684, and for other use mixtures containing 20 % to 23,5 % oxygen in nitrogen to be considered

3.4

industrial gas

gas or gas mixtures not covered by 3.1 and not used for breathing gas use

3.5

breathing gas

gas filled in cylinders for breathing and diving application, excluding gas for medical use

3.6

body

cylindrical part of a gas cylinder

4 Symbols and abbreviations

For the purposes of this document, the following symbols apply.

4.1

N.O.S.

not otherwise specified

5 Principle

Colour coding is used to give information about the contents of gas cylinders from a distance e.g. in case of emergency and to distinguish between cylinders used for industrial and medical uses.

For all applications, hazard/identification colours shall be applied to cylinder shoulders.

For gases for medical use, the body of the cylinder shall also be colour coded (see 6.3).

For applications other than medical, the cylinder body may be coloured. The use of a colour for the cylinder body that allows misinterpretation of the hazard of the gas is not allowed.

Colours used shall be in accordance with RAL register 840HR given in Annex A or equivalent.

6 Colour coding system

6.1 General

The following colour coding requirements are applicable to the shoulder and the body of the cylinder.

6.2 Shoulder

6.2.1 General

Gas cylinders are assigned colours using three methods. Colours are chosen based on the properties of the contents in accordance with the hazard of the gas filled in the cylinder (6.2.2). Some specific gases and gas mixtures are assigned colours relevant to that gas or gas mixture as noted in 6.2.3 and 6.2.6. Instead of the hazard colour, other colour(s) may be assigned based on the components of a gas mixture (6.2.3 or 6.2.4 or 6.2.5).

Annex D gives guidance for the selection of shoulder colours.

6.2.2 Gas properties

6.2.2.1 Unless specifically identified in 6.2.3, 6.2.4, 6.2.5 or 6.2.6, all gases and gas mixtures shall be identified by a colour coding indicating the properties of the contents in accordance with the colour of the danger labels as specified in RID/ADR.

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

The property shall be classified in a descending order of hazard as follows:

6.2.2.2 For gases with a single danger:

- a) toxic and/or corrosive (in accordance with ISO 10298 and ISO 13338) — yellow;
- b) flammable (in accordance with EN ISO 10156) — red;
- c) oxidizing (in accordance with EN ISO 10156) — light blue;
- d) inert¹⁾ — bright green.

The colour BRIGHT GREEN shall not be used for air for medical use or breathing application (see 6.2.5).

6.2.2.3 For gases with more than one danger:

When a gas or mixture has two hazard properties, then the cylinder shoulder shall be coloured in accordance with the primary hazard. The colour of the secondary hazard (flammable or oxidizing) may 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.

6.2.3 Specific single gases

6.2.3.1 The following gases shall be identified by specific colours rather than the colour system defined in 6.2.2.

a) Flammable gases:

Acetylene — Maroon.

b) Oxidizing gases:

Oxygen — White;

Nitrous oxide — Blue.

6.2.3.2 Inert gases for medical application shall be further differentiated by use of the following colours:

- a) Argon — Dark green;
- b) Nitrogen — Black;
- c) Carbon dioxide — Grey;
- d) Helium — Brown.

Specific colours of single gases described above are identical to ISO 32.

These colours may also be used for applications other than medical instead of the bright green colour (inert) as indicated in 6.2.2.

1) in accordance with 3.2