

# norm

# NEN-EN 12021

Respiratory protective devices -  
Compressed gases for breathing  
apparatus

Publicatie uitsluitend voor commentaar

juni 2012  
ICS 13.340.30

Commentaar vóór 2012-09-30

Zal vervangen NEN-EN 12021:1999

Als Europees normontwerp is gepubliceerd: prEN 12021:2012, IDT

Definitief vastgestelde normen zullen als Nederlandse norm gelden. Daarom wordt dit normontwerp in Nederland voor commentaar gepubliceerd. Op het ontwerp ingebracht commentaar zal aan de bevoegde normcommissie worden voorgelegd die hiermee rekening zal houden bij de bepaling van de Nederlandse stem. Indien er geen bezwaar bij NEN wordt gebracht, kan dat leiden tot ongewijzigde definitieve vaststelling van het ontwerp als norm.

Van Europese normen bestaan drie officiële versies: Engels, Frans en Duits. Voor Nederland zal de Engelse versie gelden. Daarnaast kan er gekozen worden voor een andere geautoriseerde versie in het Nederlands.

Normcommissie 302094 "Persoonlijke beschermingsmiddelen"



**THIS PUBLICATION IS COPYRIGHT PROTECTED**

**DEZE PUBLICATIE IS AUTEURSRECHTELIJK BESCHERMD**

Apart from exceptions provided by the law, nothing from this publication may be duplicated and/or published by means of photocopy, microfilm, storage in computer files or otherwise, which also applies to full or partial processing, without the written consent of the Netherlands Standardization Institute.

The Netherlands Standardization Institute shall, with the exclusion of any other beneficiary, collect payments owed by third parties for duplication and/or act in and out of law, where this authority is not transferred or falls by right to the Reproduction Rights Foundation.

Auteursrecht voorbehouden. Behoudens uitzondering door de wet gesteld mag zonder schriftelijke toestemming van het Nederlands Normalisatie-instituut niets uit deze uitgave worden veeleenvoudigd en/of openbaar gemaakt door middel van fotokopie, microfilm, opslag in computerbestanden of anderszins, hetgeen ook van toepassing is op gehele of gedeeltelijke bewerking.

Het Nederlands Normalisatie-instituut is met uitsluiting van ieder ander gerechtigd de door derden verschuldigde vergoedingen voor veeleenvoudiging te innen en/of daartoe in en buiten rechte op te treden, voor zover deze bevoegdheid niet is overgedragen c.q. rechtens toekomt aan de Stichting Reprorecht.

Although the utmost care has been taken with this publication, errors and omissions cannot be entirely excluded. The Netherlands Standardization Institute and/or the members of the committees therefore accept no liability, not even for direct or indirect damage, occurring due to or in relation with the application of publications issued by the Netherlands Standardization Institute.

Hoewel bij deze uitgave de uiterste zorg is nagestreefd, kunnen fouten en onvolledigheden niet geheel worden uitgesloten. Het Nederlands Normalisatie-instituut en/of de leden van de commissies aanvaardden derhalve geen enkele aansprakelijkheid, ook niet voor directe of indirecte schade, ontstaan door of verband houdend met toepassing van door het Nederlands Normalisatie-instituut gepubliceerde uitgaven.

Voorbeeld  
Preview

May 2012

ICS 13.340.30

Will supersede EN 12021:1998

English Version

## Respiratory protective devices - Compressed gases for breathing apparatus

Appareils de protection respiratoire - Gaz comprimés pour appareil de protection respiratoire isolant

Atemschutzgeräte - Druckgase für Atemschutzgeräte

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 79.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

## Contents

Page

Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	4
4 Designation .....	5
5 Units .....	6
6 Reference conditions .....	6
7 Requirements .....	6
7.1 Breathing air .....	6
7.2 Mixing of gases .....	7
7.2.1 General .....	7
7.2.2 Oxygen compatible air .....	7
7.2.3 Nitrogen depleted air .....	7
7.2.4 Breathing oxygen .....	8
7.2.5 Oxygen and nitrogen gas mixtures .....	8
7.2.6 Oxygen and helium gas mixtures .....	9
7.2.7 Oxygen, helium and nitrogen gas mixtures .....	9
7.2.8 Helium .....	10
7.3 Odour .....	10
8 Sampling and testing .....	10
Annex A (informative) Natural air .....	11
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC .....	12
Bibliography .....	13
<b>Tables</b>	
Table 1 — Composition of breathing air .....	6
Table 2 — Water content of breathing air for certain supply pressures .....	7
Table 3 — Composition of oxygen compatible air .....	7
Table 4 — Composition of nitrogen depleted air .....	7
Table 5 — Composition of breathing oxygen .....	8
Table 6 — Composition of oxygen and nitrogen gas mixtures .....	8
Table 7 — Composition of oxygen and helium gas mixtures .....	9
Table 8 — Composition of oxygen, helium and nitrogen gas mixtures .....	9
Table 9 — Composition of helium .....	10
Table A.1 — Typical composition of natural air (ISO 2533) .....	11
Table ZA.1 — Correspondence between this European Standard and Directive 89/686/EEC .....	12

## Foreword

This document (prEN 12021:2012) has been prepared by Technical Committee CEN/TC 79 "Respiratory protective devices", the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12021:1998.

The major technical changes with respect to EN 12021:1998 are the following:

- a) broader scope;
- b) requirements for other gases and mixings added;
- c) designation (Clause 4) changed;
- d) reduced maximum water content for lower pressures.

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.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

Preview  
prEN 12021:2012

## 1 Scope

This European Standard specifies requirements for the quality of compressed gas supplied for use with the following applications:

- a) respiratory protective devices – Self-contained open-circuit compressed gas breathing apparatus and self-contained open-circuit compressed gas underwater breathing apparatus;
- b) respiratory protective devices – Compressed gas line breathing apparatus and compressed gas line breathing apparatus for use under water;
- c) respiratory protective devices for escape – Self-contained open-circuit compressed gas breathing apparatus including full face mask or mouthpiece assembly or hoods;
- d) respiratory protective devices for escape – Self-contained re-breathing apparatus including full face mask or mouthpiece assembly or hoods;
- e) respiratory equipment – Self-contained re-breathing apparatus;
- f) breathing gas supplied for hyperbaric operations.

The standard also applies to synthetic air. Account is taken of the use of compressed gases at both normal atmospheric pressure and hyperbaric pressures. Maximum allowable concentrations of impurity for compressed gases are quoted as values at normal atmospheric pressure.

This European Standard does not apply to compressed gases used for medical purposes or for aerospace applications.

## 2 Normative references

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

EN 132:1998, *Respiratory protective devices — Definitions of terms and pictograms*

## 3 Terms and definitions

For the purposes of this document the terms and definitions given in EN 132:1998 and the following apply.

### 3.1

#### **hydrocarbon**

organic compound consisting mainly of hydrogen and carbon

### 3.2

#### **oil**

mixture of hydrocarbons composed of six or more carbon atoms (C6+)

### 3.3

#### **trimix**

gas comprising a specified mixture of oxygen, helium and nitrogen, capable of supporting human life under appropriate diving or hyperbaric conditions

Note 1 to entry: This includes manufactured gas mixtures made up from combinations of pure oxygen, pure helium and pure nitrogen, with or without compressed air.

# Bestelformulier

# NEN

## Stuur naar:

NEN Standards Products & Services  
t.a.v. afdeling Klantenservice  
Antwoordnummer 10214  
2600 WB Delft

## NEN Standards Products & Services

Postbus 5059  
2600 GB Delft

Vlinderweg 6  
2623 AX Delft

T (015) 2 690 390  
F (015) 2 690 271

[www.nen.nl/normshop](http://www.nen.nl/normshop)

## Ja, ik bestel

\_\_ ex. NEN-EN 12021:2012 Ontw. en Ademhalingsbeschermingsmiddelen - € 23.50  
Perslucht voor ademhalingstoestellen

**Wilt u deze norm in PDF-formaat? Deze bestelt u eenvoudig via [www.nen.nl/normshop](http://www.nen.nl/normshop)**

### Gratis e-mailnieuwsbrieven

Wilt u op de hoogte blijven van de laatste ontwikkelingen op het gebied van normen, normalisatie en regelgeving? Neem dan een gratis abonnement op een van onze e-mailnieuwsbrieven. [www.nen.nl/nieuwsbrieven](http://www.nen.nl/nieuwsbrieven)

### Retourneren

Fax: (015) 2 690 271  
E-mail: [klantenservice@nen.nl](mailto:klantenservice@nen.nl)  
Post: NEN Standards Products & Services,  
t.a.v. afdeling Klantenservice  
Antwoordnummer 10214,  
2600 WB Delft  
(geen postzegel nodig).

## Gegevens

Bedrijf / Instelling \_\_\_\_\_

T.a.v. \_\_\_\_\_ O M O V

E-mail \_\_\_\_\_

Klantnummer NEN \_\_\_\_\_

Uw ordernummer \_\_\_\_\_ BTW nummer \_\_\_\_\_

Postbus / Adres \_\_\_\_\_

Postcode \_\_\_\_\_ Plaats \_\_\_\_\_

Telefoon \_\_\_\_\_ Fax \_\_\_\_\_

**Factuuradres** (indien dit afwijkt van bovenstaand adres)

Postbus / Adres \_\_\_\_\_

Postcode \_\_\_\_\_ Plaats \_\_\_\_\_

Datum \_\_\_\_\_ Handtekening \_\_\_\_\_

### Voorwaarden

- De prijzen zijn geldig tot 31 december 2016, tenzij anders aangegeven.
- Alle prijzen zijn excl. btw, verzend- en handelingskosten en onder voorbehoud bij o.m. ISO- en IEC-normen.
- Bestelt u via de normshop een pdf, dan betaalt u geen handeling en verzendkosten.
- Meer informatie: telefoon (015) 2 690 391, dagelijks van 8.30 tot 17.00 uur.
- Wijzigingen en typfouten in teksten en prijsinformatie voorbehouden.
- U kunt onze algemene voorwaarden terugvinden op: [www.nen.nl/leveringsvoorwaarden](http://www.nen.nl/leveringsvoorwaarden).