Gas cylinders - Compatibility of cylinder and valve materials with gas contents - Part 2: Non-metallic materials (ISO 11114-2:2013)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 11114-2:2013 sisaldab Euroopa standardi EN ISO 11114-2:2013 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11114-2:2013 consists of the English text of the European standard EN ISO 11114-2:2013.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 03.04.2013.	Date of Availability of the European standard is 03.04.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 23.020.30

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 11114-2

April 2013

ICS 23.020.30

Supersedes EN ISO 11114-2:2000

English Version

Gas cylinders - Compatibility of cylinder and valve materials with gas contents - Part 2: Non-metallic materials (ISO 11114-2:2013)

Bouteilles à gaz - Compatibilité des matériaux des bouteilles et des robinets avec les contenus gazeux - Partie 2: Matériaux non métalliques (ISO 11114-2:2013)

Gasflaschen - Verträglichkeit von Flaschen- und Ventilwerkstoffen mit den in Berührung kommenden Gasen - Teil 2: Nichtmetallische Werkstoffe (ISO 11114-2:2013)

This European Standard was approved by CEN on 9 February 2013.

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, Former Yugoslav Republic of Macedonia, 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.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO 11114-2:2013: E

Foreword

This document (EN ISO 11114-2:2013) has been prepared by Technical Committee ISO/TC 58 "Gas cylinders" in collaboration with 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 October 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.

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 ISO 11114-2:2000.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 11114-2:2013 has been approved by CEN as EN ISO 11114-2:2013 without any modification.

Contents

Page

Introduction

This part of ISO 11114 deals with the compatibility of non-metallic materials used for gas cylinders and gas cylinder valves with the gas contents of the cylinder. Compatibility of metallic materials is treated in ISO 11114-1.

Non-metallic materials are very often used for the construction of gas cylinder valves as seals, e.g. o-ring, gland packing, seats, or as lubrication products to avoid friction. They are also commonly used to ensure sealing of the valve/cylinder connection. For gas cylinders, they are sometimes used as an internal coating or as a liner for composite materials.

Non-metallic materials not in contact with the gas are not covered by this part of ISO 11114.

This part of ISO 11114 is based on current international experience and knowledge. Some data are derived from experience involving a mixture of the gas concerned with a dilutant, where no data for single component gases were available.

This part of ISO 11114 has been written to be in conformity with the UN Recommendations on the Transport of Dangerous Goods: Model Regulations. When published it will be submitted to the UN Sub Committee of Experts on the Transport of Dangerous Goods with a request that it be included in the Model Regulations. Where there is any conflict between this part of ISO 11114 and any applicable regulation, the regulation always takes precedence.

Gas cylinders — Compatibility of cylinder and valve materials with gas contents —

Part 2: Non-metallic materials

1 Scope

This part of ISO 11114 gives guidance in the selection and evaluation of compatibility between non-metallic materials for gas cylinders and valves and the gas contents. It also covers bundles, tubes and pressure drums.

This part of ISO 11114 can be helpful for composite and laminated materials used for gas cylinders.

It does not cover the subject completely and is intended to give guidance only in evaluating the compatibility of gas/material combinations.

Only the influence of the gas in changing the material and mechanical properties is considered (for example chemical reaction or change in physical state). The basic properties of the materials, such as mechanical properties, required for design purposes are normally available from the materials supplier and are not considered in this part of ISO 11114.

The compatibility data given are related to single component gases but can be used to some extent for gas mixtures. Ceramics, glasses, and adhesives are not covered by this part of ISO 11114.

Other aspects such as quality of delivered gas are not considered.

This part of ISO 11114 is not intended to be used for cryogenic fluids (see ISO 21010).

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.

ISO 11114-3, *Transportable gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 3: Autogenous ignition test for non-metallic materials in oxygen atmosphere*

ISO 10297, *Gas cylinders — Refillable gas cylinder valves — Specification and type testing*

ISO 15001, *Anaesthetic and respiratory equipment — Compatibility with oxygen*

3 Terms and definitions

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