SLOVENSKI STANDARD
SIST EN ISO 11114-1:2020/oprA1:2023

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Plinske jeklenke - Združljivost materialov za ventil in jeklenko s plinom - 1. del: Kovinski materiali - Dopolnilo A1 (ISO 11114-1:2020/DAM 1:2022)

Gas cylinders - Compatibility of cylinder and valve materials with gas contents - Part 1: Metallic materials - Amendment 1 (ISO 11114-1:2020/DAM 1:2022)

Gasflaschen - Verträglichkeit von Werkstoffen für Gasflaschen und Ventile mit den in Berührung kommenden Gasen - Teil 1: Metallische Werkstoffe - Änderung 1 (ISO 11114-1:2020/DAM 1:2022)

Bouteilles à gaz - Compatibilité des matériaux des bouteilles et des robinets avec les contenus gazeux - Partie 1: Matériaux métalliques - Amendement 1 (ISO 11114-1:2020/DAM 1:2022)

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ICS:

23.020.35	Plinske jeklenke	Gas cylinders
23.060.40	Tlačni regulatorji	Pressure regulators

SIST EN ISO 11114-1:2020/oprA1:2023 **en,fr,de**

DRAFT AMENDMENT
ISO 11114-1:2020/DAM 1

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

Part 1: Metallic materials

AMENDMENT 1

Bouteilles à gaz — Compatibilité des matériaux des bouteilles et des robinets avec les contenus gazeux —

Partie 1: Matériaux métalliques

AMENDEMENT 1

ICS: 23.020.35

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This document was prepared by Technical Committee ISO/TC 58, *Gas cylinders*.

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

Part 1:
Metallic materials

AMENDMENT 1

Page 6, 6.3.2 Abbreviations of materials

Replace the whole lines corresponding to gases number 5, 6, 49, 58, 59, 61, 62, 63 with the following:

Table 1 — Gas/material compatibility

No.	Gas number UN number	Name	Formula	Key compatibility characteristics	Material			
					Cylinder		Valve (body and components)	
					A	N	A	N
5	(UN 1741)	BORON TRICHLORIDE	BCl_3	Hydrolyses to hydrogen chloride in contact with moisture. In wet conditions, see specific risk of hydrogen chloride compatibility, i.e. severe corrosion of most of the materials and risk of hydrogen embrittlement. Mixtures of dry gas not exceeding 0,1 % of this gas may be filled into AA cylinders.	**NS** **QTS** SS Ni	AA	CS SS **Ni** ASB	AA B
6	(UN 1008)	BORON TRIFLUORIDE	BF_3	Hydrolyses to hydrogen fluoride in contact with moisture. In wet conditions, see specific risk of hydrogen fluoride compatibility, i.e. severe corrosion of most of the materials and risk of hydrogen embrittlement. Mixtures containing less than 0,1 % BF_3 may be filled into AA cylinders.	**NS** **QTS** SS Ni	AA	CS SS **Ni** ASB	AA B
49	(UN 1045)	FLUORINE	F_2	Hydrolyses to hydrogen fluoride in contact with moisture. In wet conditions, see specific risk of hydrogen fluoride compatibility, i.e. severe corrosion of most of the materials and risk of hydrogen embrittlement. Risk of violent reaction with AA. Recommended materials are also Ni alloy and refined nickel. Mixtures containing less than 0,1 % of this gas may be filled into AA cylinders.	**QTS** **NS** SS Ni	AA	CS SS Ni ASB	AA B[a]

[1] Incoloy© and Hastelloy© are examples of suitable products available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of these products.

[a] Brass is only acceptable as a valve body but not as a general valve component material.

[b] For mixtures containing up to 1 000 ppm of dry NO, brass valves can be used.

Table 1 *(continued)*

No.	Gas number UN number	Name	Formula	Key compatibility characteristics	Material			
					Cylinder		Valve (body and components)	
					A	N	A	N
58	(UN 1048)	HYDROGEN BROMIDE	HBr	This compound is highly hygroscopic and corrosive in wet conditions with most of the materials except some high corrosion resistant nickel alloys (e.g. Hastelloy©[1]). QTS are limited to a maximum ultimate tensile strength of 950 MPa. This limitation also applies to mixtures containing the gas stored at a total pressure at 15 °C greater than half the normal service pressure of the cylinder. However, experience shows that a cylinder can be safely used without any specific strength limitation requirements, providing the maximum working pressure at 15 °C in the cylinder is less than one-fifth of the test pressure (TP/5), in order to maintain a low stress level in the cylinder material. SS shall not be used for valve diaphragms or springs except if the failure of such components does not result in an unsafe situation. Mixtures of dry gas not exceeding 0,1 % of this gas may be filled into AA cylinders.	**NS** **QTS** SS Ni	AA	CS **SS** **Ni** ASB	B AA

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a Brass is only acceptable as a valve body but not as a general valve component material.

b For mixtures containing up to 1 000 ppm of dry NO, brass valves can be used.

Table 1 *(continued)*

No.	Gas number UN number	Name	Formula	Key compatibility characteristics	Material			
					Cylinder		Valve (body and components)	
					A	N	A	N
59	(UN 1050)	HYDROGEN CHLORIDE	HCl	This compound is highly hygroscopic and corrosive in wet conditions with most of the materials except some high corrosion resistant nickel alloys (e.g. Hastelloy©[1]). QTS are limited to a maximum ultimate tensile strength of 950 MPa. This limitation also applies to mixtures containing this gas and stored at a total pressure at 15 °C greater than half the normal service pressure of the cylinder. However, experience shows that a cylinder can be safely used without any specific strength limitation requirements, providing the maximum working pressure at 15 °C in the cylinder is less than one-fifth of the test pressure (TP/5), in order to maintain a low stress level in the cylinder material. SS shall not be used for valve diaphragm and springs except if the failure of such components does not result in an unsafe situation. Mixtures of dry gas not exceeding 0,1 % of this gas may be filled into AA cylinders.	**NS** **QTS** SS Ni	AA	CS SS **Ni** ASB	AA B

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