



GAS CYLINDERS AND VALVES WITH RESTRICTED USE IN THE EU

IGC Doc 86/09/E

Revision of IGC Doc 86/02

EUROPEAN INDUSTRIAL GASES ASSOCIATION AISBL

AVENUE DES ARTS 3-5 • B-1210 BRUSSELS
Tel: +32 2 217 70 98 • Fax: +32 2 219 85 14
E-mail: info@eiga.eu • Internet: <http://www.eiga.eu>



GAS CYLINDERS AND VALVES WITH RESTRICTED USE IN THE EU

PREPARED BY :

| | |
|------------------|---------------------|
| Hervé Barthélémy | AIR LIQUIDE |
| Wolfgang Dörner | LINDE |
| David Birch | LINDE |
| Giorgio Gabrieli | SIAD |
| Alexander Kriese | MESSER GROUP |
| Joaquin Lleonsi | CARBUIROS METALICOS |
| Andy Webb | EIGA |
| Els Vandererven | AIR PRODUCTS |

Disclaimer

All technical publications of EIGA or under EIGA's name, including Codes of practice, Safety procedures and any other technical information contained in such publications were obtained from sources believed to be reliable and are based on technical information and experience currently available from members of EIGA and others at the date of their issuance.

While EIGA recommends reference to or use of its publications by its members, such reference to or use of EIGA's publications by its members or third parties are purely voluntary and not binding.

Therefore, EIGA or its members make no guarantee of the results and assume no liability or responsibility in connection with the reference to or use of information or suggestions contained in EIGA's publications.

EIGA has no control whatsoever as regards, performance or non performance, misinterpretation, proper or improper use of any information or suggestions contained in EIGA's publications by any person or entity (including EIGA members) and EIGA expressly disclaims any liability in connection thereto.

EIGA's publications are subject to periodic review and users are cautioned to obtain the latest edition.



Table of Contents

| | | | |
|-----|-----------------------|------------------------------|-------------------------------------|
| 1 | Introduction | 1 | |
| 2 | Scope | 1 | |
| 3 | Cylinders | 1 | |
| 4 | Valves | 1 | |
| 5 | Recommendations | 1 | |
| 6 | Bibliography | 2 | |
| A.1 | Germany | NEGATIVE CYLINDER LIST | 3 |
| A.2 | France | NEGATIVE CYLINDER LIST | Error! Bookmark not defined. |
| A.3 | Finland | NEGATIVE CYLINDER LIST | 8 |
| A.4 | United Kingdom | NEGATIVE CYLINDER LIST | 9 |
| A.5 | Other Countries | NEGATIVE CYLINDER LIST | 10 |
| B.1 | EIGA | NEGATIVE VALVE LIST | 11 |

1 Introduction

On July 1st, 2001 Directive 1999/36/EC on Transportable Pressure Equipment, TPED, came into effect. Its intention is to regulate the free movement of transportable pressure equipment, including gas cylinders across the European Union.

The Annexes IV and V from this Directive, defining the reassessment procedure and the notification on the restriction of gas packaging, and the European Standard concerning the periodic inspection and testing of gas cylinders require identifying cylinders and valves banned from receiving the "PI" mark.



See Annex 10 of TPED:

ADR/RID make reference for the retest of cylinder valves to EN 14189.

Some countries within the European Union have established lists of specific cylinder types which are not considered safe for the original design conditions and need either to be withdrawn from further service or have limitations placed on their continued use. These lists are frequently referred to as "Negative Cylinder Lists".

Because of TPED, it is important that these National Lists are known across the European Union. This document is intended to co-ordinate these lists, avoiding unsuitable cylinders and valves being placed into service in another country to the one where the initial prohibition was raised, and will be updated as appropriate.

2 Scope

The document covers lists of cylinders and valves with known restrictions on use in European Union Member States. In addition those cylinders and valves which are subjects of EIGA Safety Alerts, are included.

This document does not cover restrictions of a non-technical nature.

3 Cylinders

See attached lists A.1. to A.5

4 Valves

See attached list B.1

5 Recommendations

The recommendations of EIGA are the following:

- 1) *Where any cylinder or valve is subject of a National restriction, the corresponding requirements shall apply across all countries of Operation.*
- 2) *Specific requirements as stated in the list or in EIGA Safety Alerts are valid across all countries of Operation.(including those outside EU)*

6 Bibliography

The following European Standards cover the Periodic Inspection, Testing and Re-qualification of gas containers.














EN 1802: Transportable Gas Cylinders- Periodic Inspection and Testing of seamless aluminium gas cylinders
















EN 1803: Transportable Gas Cylinders- Periodic Inspection and Testing of welded carbon steel gas cylinders (excluding LPG).

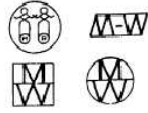

EN 1968: Transportable Gas Cylinders- Periodic Inspection and Testing of seamless steel gas cylinders


EN 12863: Transportable Gas Cylinders-Periodic Inspection and Maintenance of dissolved acetylene cylinders.


EN 14189: Transportable Gas Cylinders Inspection and maintenance of cylinder valves at time of periodic inspection of gas cylinders.

| A.1 Germany NEGATIVE CYLINDER LIST | | | | | | | | | |
|------------------------------------|--|---|---------------------|--------------------|---|--|---|--|---|
| No | Manufacturer | Initial test date | Serial no. | Material | Water capacity/ Test pressure/ Gas Service | Specific stamp marks | Specific requirements | Reasons/ Comments | References |
| 1 | Rheinische Röhrenwerke AG and Wittkowitz Bergbau | 1936 to 1945 | | LSC 90 | 40 l | LSC 90 WITK   | no further retests cylinders to be scrapped | a) high strength b) if the marking of the material is not visible, etching is allowed | Dr.Mietentz TÜV Rheinland e.V.3.4.52 |
| 2 | Rheinische Röhrenwerke AG and Wittkowitz Bergbau | 1936 to 1945 | LSC 90 V | 40 l | LSC 90 V WITK   | | | | |
| 3 | Rheinische Röhrenwerke AG and Wittkowitz Bergbau | 1936 to 1945 | not clearly visible | 40 l | WITK   | | | | |
| 4 | Rheinische Röhrenwerke AG and Wittkowitz Bergbau | | | LS 1 | | LS 1 WITK   | to be scrapped, if C-Mn and Cr-Ni-Mo content cannot be verified TRG 202 RE 1744/I dated 10.3.76 | susceptibility to embrittlement, no sufficient toughness behaviour | DG 544 from August 1975 according to RE 1744 dated 13.6.75 TRG 202/9.77 RE 1744/I dated 10.3.76 |
| 5 | Thyssen Röhrenwerke AG Dinslak and Phoenix, Rheinische (now Mannesmann Röhrenwerke AG) | 1936 to 1945 1953 to 1954 also 1966 have to be checked (IGV) | | LSCD 9 V LSC 9 | 50 l | LSCD 9 V LSC 9  | to be scrapped | | (related to 1966) failure at hydrotest in South Africa |
| 6 | Mannesmann Röhrenwerke AG | up to 1945 | | LSW 90 A + H HV | | LSW 90 A + H HV     | to be scrapped | | |



| A.1 Germany NEGATIVE CYLINDER LIST | | | | | | | | | |
|------------------------------------|--|-------------------|------------|--------------------------|--|--|---|--|--|
| No | Manufacturer | Initial test date | Serial no. | Material | Water capacity/ Test pressure/ Gas Service | Specific stamp marks | Specific requirements | Reasons/ Comments | References |
| 7 | Mannesmann Werk Kommodau | up to 1931 | | | | M-W with approval Mark C.V.  | cylinders shall not be retested any further and shall be scrapped (mostly O2 cylinders) | a) high strength b) brittle cracking behaviour | Common Amtsblatt Baden-Württemberg 1981 no. 20 S 585 |
| 8 | Rheinische Röhrenwerke AG and Wittkowitz Bergbau | 1936 to 1945 | | LSE 86 LSE 86 V | | LSE 86 LSE 86 V WITK   | to be scrapped | a) these cylinders are susceptible to hardness cracks and stress corrosion cracking | DGA 717/55 dated 7.11.1955, TRG 202/9.77 |
| 9 | Mannesmann Röhrenwerke AG Vorlage VdTÜV BI. 233 | 1936 to 1945 | | LSW 90 B LSW 90 BV | 40/50 l | LSW 90 B LSW 90 BV     | to be scrapped | b) at positive test results all cylinders shall be stamped with expert mark and date | DG 544 from August 1975, according to RE 1744 dated 13.6.1975 TRG 202/9.77 |
| 10 | Mannesmann Röhrenwerke AG Vorlage VdTÜV BI. 233 | 1936 to 1945 | | LSW 90 C DE LSW 90 CV | 40/50 l | LSW 90 C DE LSW 90 CV     | to be scrapped | | |
| 11 | Mannesmann Röhrenwerke AG | 1952 to 1955 | | LSW 90 K LSW 90 KV | 40/50 l | LSW 90 K LSW 90 KV     | to be scrapped | | |

| A.1 Germany NEGATIVE CYLINDER LIST | | | | | | | | | |
|------------------------------------|--|-------------------|-----------------------------------|--|--|---|---|---|---|
| No | Manufacturer | Initial test date | Serial no. | Material | Water capacity/ Test pressure/ Gas Service | Specific stamp marks | Specific requirements | Reasons/ Comments | References |
| 12 | Mannesmann Röhrenwerke AG | | | LSC 8 LS Mn LS V | Less than 40l | LSC 8 LS Mn LS V  | to be scrapped | cylinder failures | ABAO 861/1 (DDR) from 1971 |
| 13 | IWKA | | | V 70 Mn V 70 VM V 80 VM V 79 VM | 0,47 l 0,67l 2,01l 2,68l 5,36l 6,7l 8,04l 10,72l 13,4l | V 70 Mn V 70 VM V 80 VM V 79 VM  | all CO2 cylinders shall be thoroughly checked for corrosion and longitudinal cracks prior to the water filling. If longitudinal cracks are present, the cylinder shall be further internally tested by US-testing. Retest period acc. to ADR should be reconsidered depending to the test results. | these cylinders are susceptible to stress cracking corrosion in the presence of moisture in CO2 (80 % with 8,04 l and test pressure of 190 bar) | RE 1059 dated 9.11.1965 RE 5709 dated 11.4.1972 DGA 18-77 TRG 101 Anlage 2 |
| 14 | Shanghai Huasheng Enterprises Co. Ltd. | | Manufactured January to June 2007 | CrMo | All | | Before filling Ultrasonic test Hardness test | Leakages at the bottom of two cylinders in Germany | SA 14 June 2008 |

| | | | | | | | | | |
|----|----------------------|-----------------------|--|---|-----|---|---|--|--|
| 15 | Duro Dakovic | 1991 to 2001 | | Mn steel Stamped with values less than 620 | all |  | Stamped with ≤ 620 To be scrapped | High defect rate which can be difficult to detect visually after shot blasting | |
| 16 | SSFR (Rive de Giers) | Produced in July 1989 | | | | | | | |

| A.2 France NEGATIVE CYLINDER LIST | | | | | | | | | |
|-----------------------------------|--|--|----------------|-------------------|--|---|--|---|-------------------------------|
| No | Manufacturer | Initial test date | Serial no. | Material | Water capacity/ Test pressure/ Gas Service | Specific stamp marks | Specific requirements | Reasons/ Comments | References French "Arrêté" |
| 1 | SM GERZAT  | 31.03.1977 | 20470 to 20673 | AA 2001 | 4/300 bar | AU6 | To be scrapped | Sensitive to intercrystalline corrosion | 06.01.1989 |
| | | 01.04.1977 | 20674 to 20757 | AA 2001 | 4/300 bar | AU6 | | | |
| | | 05.04.1977 | 20778 to 21287 | AA 2001 | 4/300 bar | AU6 | | | |
| | | 09.05.1977 | 21391 | AA 2001 | 4/300 bar | AU6 | | | |
| 2 | SM GERZAT | From 01.11.1973 to 01.01.79 | A 1 to A1800 | AA 5283 | 10,5 l 300 bar | AG5 | To be scrapped | Too high cold working | 06.01.1989 |
| 3 | SM GERZAT | Older then 25 years | All | AA 5283 | — | AG5 or 5283 or two concentric circles on the bottom | To be scrapped | — | SA 07 Rev 1 March 2007 |
| 4 | SM GERZAT | before 10.02.75 | All | AA 2001 (AU6 MGT) | — | AU6 | To be scrapped except those which have been re-heat-treated (see special mark on the base) | Sensitive to intercrystalline corrosion | 14/01/1976 + 11/02/1993 |
| 5 | SM GERZAT with porous mass GIP 2 | | All | AA 5283 | — | GIP 2 | Not allowed to be filled since 01.01.97 | Sensitive to corrosion cracking | 29.12.1995 |
| 6 | SM GERZAT | Older then 15 years and in marine environments | All | AA 5283 | — | AG5 or 5283 or two concentric circles on the bottom | To be scrapped | — | SA 07 Rev 1 March 2007 |
| 7 | SM GERZAT | In service for scuba diving | All | AA 5283 | — | AG5 or 5283 or two concentric circles on the bottom | To be scrapped | | SA 07 Rev 1 March 2007 |

| | | | | | | | | | |
|---|-----------|---------------------------------|-----|---------|---|------------------|----------------|--|----------|
| 8 | SM GERZAT | In service for SCBA application | All | AA 5283 | — | AG5 + ARS or APL | To be scrapped | | 27.01.81 |
|---|-----------|---------------------------------|-----|---------|---|------------------|----------------|--|----------|

| A.3 Finland NEGATIVE CYLINDER LIST | | | | | | | | | |
|------------------------------------|------------------------|-------------------|------------|------------------|--|---|--|---|------------|
| No | Manufacturer | Initial test date | Serial no. | Material | Water capacity/ Test pressure/ Gas Service | Specific stamp marks | Specific requirements | Reasons/ Comments | References |
| 1 | IWKA, Homberg | 1954 to 1968 | | V70 MN V70 MN | 2 to 14 l |  | all CO2 cylinders shall be thoroughly checked for corrosion and longitudinal cracks prior to the water filling. If longitudinal cracks are present, the cylinder shall be further internally tested by US-testing. Retest period acc. to ADR should be reconsidered depending to the test results. | these cylinders are susceptible to stress cracking corrosion in the presence of moisture in CO2 (80 % with 8,04 l and test pressure of 190 bar) | |
| 2 | Thyssen Röhrenwerke AG | 1962 | 62/874300 | to 62/674500 | 50 l 225 bar |  | to be scrapped | | |

| A.4 United Kingdom NEGATIVE CYLINDER LIST | | | | | | | | | |
|---|-----------------------|-------------------|----------------------|----------|--|----------------------|--|--|------------|
| No | Manufacturer | Initial test date | Serial no. | Material | Water capacity/ Test pressure/ Gas Service | Specific stamp marks | Specific Requirements | Reasons/ Comments | References |
| 1 | NAM Yang, South Korea | Oct 95 | NY 08792 to NY 16931 | Cr-Mo | 10 l CO2/N2 | NY | Hardness test on all relevant cylinders. Those cylinders with hardness values above the upper limit shall be scrapped. | Hardness up to 150% above upper limit 8239 cylinders | |

| A.5 Other Countries NEGATIVE CYLINDER LIST | | | | | | | | | |
|---|--------------|-------------------|------------|----------|--|----------------------|-----------------------|----------------------|------------|
| No | Manufacturer | Initial test date | Serial no. | Material | Water capacity/ Test pressure/ Gas Service | Specific stamp marks | Specific requirements | Reasons/ Comments | References |
| <p>As to the best knowledge to the IGC, no official lists for banned cylinders are existing in other EEC-member states at this point in time.</p> | | | | | | | | | |

| B.1 EIGA NEGATIVE VALVE LIST | | | | | | | |
|------------------------------|------------------------------------|-----------------------------|-----------------|------------------|--|---|---------------------------------------|
| No | Manufacturer | Production date | Serial | Working pressure | Specific Requirements | Reasons/ Comments | References |
| 1 | VTI Ventil Technik GmbH | Before August 2005 | K44 K46 K900 | | Medical Oxygen: scrapped Oxidising gases: scrapped before May 2010 Other applications: scrapped at re-test | Seat holder fractured, causing burn-out of the soft seat material (HG13) in oxygen | EIGA Safety Alert 06 August 2006 |
| 2 | Messer Cutting and Welding GmbH | 1998 - | V13 | 300 bar | Scrap or use at lower pressure | O-ring not lubricated, | EIGA Safety Alert 10 December 2007 |
| 3 | Rotarex / Ceodeux S.A. | 1999 – 2004 | RM 200 light | | Replace first generation blanking plugs (new type has 3 stars on the plug) Torque limit to be respected | Pressure retaining brass plug failed | EIGA Safety Alert 11 August 2007 |
| 4 | Müller Gas Equipment A/S | 2002 – 2003 January 2004 | 511B..... | | Inspect the back plug and if necessary replace or use valve protection to absorb ejection or fit a safety cap over the back plug | Back plug ejection due to SCC (excessive torque and water contamination) | EIGA Safety Alert 12 March 2008 |
| 5 | Rotarex / Ceodeux S.A. | 1997 – 2001 | RPV 212 | | Do not fill cylinders with such a valve after Dec 2008 unless one of the following action has been taken: Change to a SS type back plug or Use valve protection to absorb ejection or Fit a safety cap over the back plug | Back plug ejection due to SCC (excessive torque and water contamination) | EIGA Safety Alert 13 March 2008 |