Certificate no.:
TAP00002YA

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Seamless Gas Bottle

with type designation(s)
ISO267-34CrMo-03

issued to

Tianjin Tianhai High Pressure Container Co., Ltd.

No. 268, Jinbin Road - Tianjin Port Free Trade Zone
300461 Tianjin City, China

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.7 Pressure equipment

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Type:	Loading pressure:	Operating media:	Test pressure:
ISO267-34CrMo-03	300 bar	Compressed gas, liquefied gas, gaseous mixture Inergen IG-541 for fire extinguishing systems	450 bar

Issued at **Hamburg** on **2024-11-05**
This Certificate is valid until **2029-11-04**.
DNV local unit: **Dalian NB & CMC**

Approval Engineer: **Arthur Ivombo**

for **DNV**

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This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Seamless steel gas cylinders type ISO267-34CrMo-03 for the use in fire extinguishing systems.

Material	Design / Test Pressure (Ph) [bar]	Outside diameter [mm]	Min. wall thickness [mm]	Min. water capacity [ℓ]	Length approx. [mm]
34CrMo4 acc. to GB/T 18248	300 / 450	267	7.5	20-105	570-2290

For details of the cylinders (e. g. design data, materials or dimensions) see approved drawing listed below in “Type Approval documentation”.

Place of production

Tianjin Tianhai High Pressure Container Co., Ltd.
No. 268, Jinbin Road – Tianjin Port Free Trade Zone
300461 Tianjin City – China

Application/Limitation

The gas cylinders are approved for firefighting systems according to DNV-RU-SHIP Pt.4 Ch.7 Sec.1 [5] (Edition July 2021) and have been designed according to ISO 9809-2:2019. The use of other media than compressed gases, liquefied gases, gaseous mixture Inergen IG-541 for firefighting or the service in other systems e.g. as an accumulator in fluid power applications, is outside the range of this type approval and shall be subject to special consideration in each individual case.

The gas cylinders are graded as pressure equipment class I. The design pressure is 300 bar, test pressure 450 bar, design temperature range of -50°C to +65°C, the corrosion allowance 0 mm according to ISO 9809-2:2019 [7]. Therefore, the gas cylinders shall not be used in systems requiring a corrosion allowance.

The material of the gas cylinders is 34CrMo4 acc. to GB/T 18248 (chemical composition and mechanical properties, see approved drawings), it shall be delivered with material certificates according to DNV-RU-SHIP Pt.4 Ch.7 Sec.1 [Table 5].

The manufacturer of the steel gas cylinder shall hold a valid Approval of Manufacture (AoM) certificate according to DNV-CP-0261 “Pressure Equipment Manufacture”. The pre-material (seamless steel pipe) shall be delivered by a manufacturer holding a valid Approval of Manufacture (AoM) certificate according to DNV-CP-0252 “Steel pipes and steel pipe fittings”.

Manufacturing, workmanship and testing of gas cylinders shall be done according to ISO 9809-2:2019.

Type Approval documentation

Tests carried out and approval testing

In the course of initial type approval, prototypes of cylinders series were tested according to ISO 9809-2:2019.

Each gas cylinder manufactured to this type approval is to be:

- constructional checked and hydraulic pressure tested,
- certified by DNV and delivered with DNV Product Certificate.

Marking of product

For traceability to this type approval the steel gas cylinders shall be marked according to ISO 9809-2:2019.

Periodical assessment

The objective of periodical assessments is to verify that the conditions for the TA have not been altered.

The main scope of the periodical assessment will normally include:

- Verification of the TA applicant's production and quality system with relation to ensuring continue consistent production of the type approved products at the TA applicant's own premises and at other companies that are given the responsibility for manufacturing of the products,
- Review of the TA documentation and that this is still used as basis for the production,
- Review of possible changes to the design, the material and the performance of the product,
- Verification of the product marking.

Periodical assessments for TA with a validity period of five years will be required after two years (+/- 90 days) and after 3.5 years (+/- 90 days).

Unscheduled assessments for retention of the TA may be carried out when there is reason to believe that the TA applicant has not adhered to the obligations stipulated in the TA certificate or in the applicable requirements.

End of Certificate