DNV·GL

Certificate No:
TAS00002H3

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Portable Tank

with type designation(s)
20' ISO/CSC Tank container CVA-6K-240-ISO

Issued to
INOX INDIA PVT. LTD.
Kalol, Gujarat, India

is found to comply with
International Convention for Safe Containers, 1972 (CSC)
ISO 1496, Part 3: Tank Containers for Liquids, Gases and Pressurized Dry Bulk
DNV 2.7-4 Freight Containers
International Maritime Dangerous Goods Code (IMDG)
European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)
Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID)
Code of Federal Regulations 49
Transport Canada: 4g Impact Test Requirement for Tank Containers

Application :

UN Portable Tank, Tank Instructions T75

Max. gross mass (kg)	**34000**
Max. payload (kg)	**24202**
Tank cap. (L)	**22464**
MAWP/test pr. (bar)	**16.55/23.24**
Eq. shell thk. (mm)	**17.63**

Issued at **Høvik** on **2020-04-20**
This Certificate is valid until **2024-06-30**.
DNV GL local station: **Mumbai**

for **DNV GL**

Approval Engineer: **Igor Antonijevic**

Inger-Helene Hals
Head of Section

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

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Job Id: **262.1-008644-3**
Certificate No: **TAS00002H3**

Manufactured by

DNV GL id 1218821

Product description

20ft CSC/ISO vacuum multi-layer insulated cryogenic tank container.
This Type Approval Certificate replaces S-8448.

Max. external dimensions (L x W x H)	6058 x 2438 x 2591 mm
Tare Mass[1)]	9798 kg
Shell thickness, (cylinder /head of inner tank)	12.7/14.3 mm (0.5/0.563 in)
Tank internal diameter	2292 mm (90.25 in)
ISO Freight container designation	1CC
Size code	22
Type code	K7
Tank material, inner vessel	ASME SA-240 Gr. 201-2 SS
Outer jacket material	ASME SA-240 gr. 304 SS
Pressure Vessel Code	ASME VIII Div. 1

[1)]Tare mass is to be confirmed by weighing. The sum of the tare mass and the payload shall never exceed the Max. gross mass as stated on the front page of this certificate.

Application/Limitation

Approved according to 6.7.4 in IMDG/ADR/RID, US DOT 49 CFR and TC requirements.

IMDG/ADR/RID/ design approval reference number	N-NV/430/09/09
US DOT Approval reference number	SI-0200-04/USA[2)]
CSC Approval reference number	US/SI-005/03[2)]
Design pressure, inner vessel	17.86 bar
Setting of relief valve	16.5 bar
Metallurgical design temperature for inner tank	-196°C to + 38°C
Design vacuum	1 bar
Design temperature for framework and outer jacket	-20 °C
Allowable stacking load for 1,8g	192000 kg
Racking test load value	150 kN
Effectiveness of the insulation system (heat influx)	136 W (for NITROGEN REFRIGERATED LIQUID)

[2)] issued by Silver/Cims

Dangerous goods that can be transported and holding times

UN No.	Class	Proper Shipping Name (PSN)	Holding time (from 0.34 to 16.55 bar @30°C)
1038	2.1	ETHYLENE, REFRIGERATED LIQUID	273 days (9824 kg / 21657 lb)
1073	2.2	OXYGEN, REFRIGERATED LIQUID	120 days (19723 kg / 43481 lb)
1951	2.2	ARGON, REFRIGERATED LIQUID	96 days (23984 kg / 52876 lb)
1961	2.1	ETHANE, REFRIGERATED LIQUID	367 days (9660 kg / 21297 lb)
1972	2.1	NATURAL GAS, REFRIGERATED LIQUID	131 days (7321 kg / 16140 lb)
1977	2.2	NITROGEN, REFRIGERATED LIQUID	81 days (13058 kg / 28788 lb)
2201	2.2	NITROUS OXIDE, REFRIGERATED LIQUID	451 days (22602 kg / 49830 lb)
3136	2.2	TRIFLUOROMETHANE, REFRIGERATED LIQUID	513 days (24219 kg / 53394 lb)

DNV GL surveyor has to witness important production and test events and issue Form no. CTT101 "Tank Container Certificate" for each container. In addition to this freight container certificate has to be issued (form no. CTC301)

Each tank should be subjected to a hydraulic pressure test to test pressure.

Type Approval documentation

Tests carried out

Prototype tested according to the requirements.

Marking of product

Each container to be marked with:

- Data plate for UN tanks according to Ch. 6.7.4.15 requirements in IMDG Code, ADR and RID. Design approval number according to Application/Limitation above.
- Data plate according to US DOT/CSC requirements including Allowable stacking load of 192000 kg.
- External marking according to CSC, ISO, IMDG/ADR/RID and US DOT requirements
- DNV GL decal for freight containers
- mark to be hard stamped on frame
- "TC IMPACT APPROVED" to be marked on the data plate

Periodical assessment

In order to maintain the validity of the type approval certificate, periodical assessments should be carried out according to DNVGL-SE-0284 at 2 and 3.5 year intervals. Periodical assessments will, when possible, be harmonized with other surveys and audits carried out.

END OF CERTIFICATE