Certificate no.:
TAS00004EE

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Portable Tank

with type designation(s)
40ft CSC/ISO portable tank - FH4107AS-N
40ft CSC/ISO portable tank - FH4112AS-N

issued to
Inox India Limited
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
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

Application:

UN Portable Tank, Tank Instructions T75

Type	Max. gross mass (kg)	Max. payload (kg)	Tank cap. (L)	MAWP/test pr. (bar)	Eq. shell thk. (mm) (shell / ends)
40ft CSC/ISO portable tank - FH4107AS-N	**26000**	**9500**	**41630**	**6.2 / 9.4**	**8.97 / 10.25**
40ft CSC/ISO portable tank - FH4112AS-N	**26000**	**6700**	**41630**	**12.0 / 17.0**	**14.09 / 17.93**

Issued at **Høvik** on **2024-09-11**
This Certificate is valid until **2029-09-10**.
DNV local unit: **VCA India**

for **DNV**

Approval Engineer: **Igor Antonijevic**

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 AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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.

Product description

40ft CSC/ISO vacuum multi-layer insulated cryogenic tank container. Additional insulation layer of NITROGEN, REFRIGERATED LIQUID (UN1977) has been used to maintain the low temperature from a separate Nitrogen tank..

	FH4107AS-N	FH4112AS-N
Max. external dimensions (L x W x H)	12192 x 2438 x 2591 mm	
Tare Mass[1)]	16500 kg	19300
Nominal thickness (shell/heads)	7.0mm / 8.0mm	11.0 / 14.0
Tank internal diameter	2250 mm	
ISO Freight container designation	1AA	
Size code / Type code	42 / K7	
Tank material (HELIUM, UN1963)	SA-240 type 304/304L	
Tank material (NITROGEN, UN1977)	SA-240 type 304	
Tank capacity (NITROGEN, UN1977)	1698 litres	
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 IMDG/ADR/RID Ch. 6.7.4 and US DOT 49 CFR requirements.

	FH4107AS-N	FH4112AS-N
IMDG/ADR/RID/ design approval reference number	N-NV/668/05/24	
US DOT Approval reference number	SI/0100-24/USA [2)]	
CSC Approval reference number	N-NV/668/05/24	
MAWP/test pressure (NITROGEN, UN1977)	0.7 bar / 3.0 bar	
Setting of relief valve	6.2 bar	12.0 bar
Design temperature for inner tank (HELIUM, UN1963)	-269°C to + 40°C	
Design temperature for inner tank (NITROGEN, UN1977)	-196°C to + 40°C	
Design vacuum	1 bar	
Design temperature for framework and outer jacket	-20°C to +55°C	
Allowable stacking load for 1,8g	213360 kg	
Racking test load value	150 kN	
Effectiveness of the insulation system (heat influx)	6.7 W (for HELIUM, REFRIGERATED LIQUID)	

[2)] issued by Silver/Cims

Dangerous goods that can be transported and holding times

UN No.	Class	Proper shipping name (PSN)	FH4107AS-N	FH4112AS-N
			Holding time from 0 bar to 6.2 bar @30°C	Holding time from 0 bar to 12.0 bar @30°C
UN1963	2.2	HELIUM, REFRIGERATED LIQUID	4643 kg (40 days)	4292 kg (40 days)

Dynamic impact test has not been carried out as per portable tank special provision TP34 applicable for UN1963. Hence this container is not for rail transport, and this has to be clearly marked as described under Marking of product.
DNV 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. CTF301 Type Certificate for Container).
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 DOT and CSC requirements including Allowable stacking load of 213360 kg.
- External marking according to CSC, IMDG/ADR/RID and DOT requirements
- DNV decal for freight containers
- NV mark to be hard stamped on frame.
- Marking in accordance with other applicable codes
- “NOT FOR RAIL TRANSPORT” to be marked on the data plate and on both sides of the outer jacket in letters at least 10cm high.

Periodical assessment

In order to maintain the validity of the type approval certificate, periodical assessments should be carried out according to DNV-SE-0284 at 2 and 3.5 year intervals. Periodical assessments will, when possible, be harmonized with other surveys and audits carried out. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE