DNV·GL

Certificate No:
TAS00001MB

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Portable Tank

with type designation(s)
20ft CSC/ISO UN portable tank - F5.3K240ACS

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)	**26010**
Tank cap. (L)	**20055**
MAWP/test pr. (bar)	**16.54/23.24**
Eq. shell thk. (mm)	**10.25**

Issued at **Høvik** on **2020-01-23**
This Certificate is valid until **2024-09-22**.
DNV GL local station: **Mumbai**

Approval Engineer: **Igor Antonijevic**

for **DNV GL**

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.

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Job Id: **262.1-029403-1**
Certificate No: **TAS00001MB**

Product description

20ft CSC/ISO vacuum multi-layer insulated cryogenic tank container:

Max. external dimensions (LxWxH):	6058 x 2438 x 2590 mm
Tare Mass[1)]:	7990 kg
Minimum thickness, inner tank (shell/end):	7.01/8.0 mm
Tank diameter, internal:	2140 mm
ISO freight container designation:	1CC
Size code / Type code:	22 / K7
Tank material, inner vessel:	SA-240 gr. 304
Outer jacket material:	SA-240 gr. 304
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.
CSC/IMDG/ADR/RID design approval number: N-NV/597/08/18
DOT design approval number: SI-0400-19-USA[2)]
[2)] issued by SilverCims

Design pressure, inner vessel:	17.85 bar
Setting of relief valve:	16.54 bar
Design vacuum:	1 bar
Metallurgical design temperature for inner tank:	-196°C to + 50°C
Design temperature for framework and outer jacket:	-20°C
Allowable stacking weight for 1,8g:	192000 kg
Racking test load value:	15240 kg
Effectiveness of the insulation system (heat influx):	136 W (for NITROGEN REFRIGERATED LIQUID)

Dangerous goods that can be transported

UN No.	Class	Proper Shipping Name (PSN)	Holding time (@ 30°C) 0.345 to 16.55 bar
1977	2.2	NITROGEN, REFRIGERATED LIQUID	74 days (11877 kg)
1073	2.2	OXYGEN, REFRIGERATED LIQUID	92 days (21806 lg)
1951	2.2	ARGON, REFRIGERATED LIQUID	58 days (17905 kg)
1972	2.1	NATURAL GAS, REFRIGERATED LIQUID	142 days (6565 kg)
1038	2.1	ETHYLENE, REFRIGERATED LIQUID	200 days (8873 kg)
1961	2.1	ETHANE, REFRIGERATED LIQUID	229 days (8482 kg)
2201	2.2	NITROUS OXIDE, REFRIGERATED LIQUID	229 days (19860 kg)
3136	2.2	TRIFLUOROMETHANE, REFRIGERATED LIQUID	306 days (22282 kg)

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
- Marking in accordance with other applicable codes

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 harmonised with other surveys and audits carried out.

END OF CERTIFICATE