

**12,000 M3  
LEG/LPG/NH3/VCM  
CARRIER (ELETSON)**

**GAS FORM-C**  
based on the  
**OCIMF / SIGTTO**  
**SHIP INFORMATION QUESTIONNAIRE**  
for  
**GAS CARRIERS**  
2nd Edition 1998

Specifications of the vessel and the gas installations are believed to be correct, but not guaranteed.

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**SECTION A  
GENERAL INFORMATION**

**A1 PRINCIPAL SHIP PARTICULARS**

1,1	Date questionnaire completed	08-02-2016
1,2	Name of vessel	LEG/LPG KITHNOS
1,3	LR/IMO number	9711523
1,4	Last previous name	N/A
1.4.1	Date of name change	N/A
1,5	Second last previous name	N/A
1.5.1	Date of name change	N/A
1,6	Third last previous name	N/A
1.6.1	Date of name change	N/A
1,7	Fourth last previous name	N/A
1.7.1	Date of name change	N/A
1,8	Flag	GREEK
1,9	Port of Registry	Piraeus
1.10	Official number	12345
1,11	Call sign	SVCH5
1,12	INMARSAT A or B number	N/A
1,13	Vessel's telephone number	FBB500 : 00870773249428 // V-SAT :0030 2111981410 (Bridge) 0030 2111981394 (Master)
1.13.1	Vessel's mobile number	
1,14	Vessel's fax number	00870 783830847
1,15	Vessel's telex number	424100121
1,16	Vessel's E-mail address	<a href="mailto:master@kithnos.eletson.com">master@kithnos.eletson.com</a>

1,17 INMARSAT C number  
1,18 Vessel's MMSI number  
1,19 Type of vessel

424100120 (LRIT)
241410000
LEG/LPG/NH3/VCM Carrier
Max tank pressure 5.0 Barg (0.972 t/m3)
Min temp -104°C

**OWNERSHIP AND OPERATION**

1.20 Registered Owner  
Full address

<b>KITHNOS SPECIAL MARITIME ENTERPRISE</b>
c/o Eletson Corporation
118, Kolokotroni Street
GR 185 35 Piraeus
Greece
+30 2104282300
217424 - EletGR
+30 2104282320
info@eletson.com
Cpt Antonios Michail
+30 6946502363

Office telephone number  
Office telex number  
Office fax number  
Office Email address  
Contact person  
Contact person after hours telephone number

1.21 Name of technical operator (If different from above)  
Full Address

<b>As Above</b>

Office telephone number  
Office telex number  
Office fax number  
Office Email address  
Contact person (Designated Person Ashore)  
Contact person after hours telephone number  
Emergency callout number  
Emergency callout pager number  
Contact details for person responsible for oil spill response

1.22 Number of years controlled by technical operator  
1.23 Total number of ships operated by this Operator  
1.23 Number of years ship owned

Since Delivery	Years
31	
Since Delivery	Years

1.23.1 Name of commercial operator (If different from above)  
Full Address

<b>As Above</b>

Office telephone number  
Office telex number  
Office fax number  
Office Email address  
Contact person  
Contact person after hours telephone number  
Emergency callout number  
Emergency callout pager number  
Number of years controlled by commercial operator

Since Delivery	Years
----------------	-------

**BUILDER**

1.24 Builder  
1.25 Name of yard vessel built at  
1.26 Hull number  
1.27 Date keel laid  
1.28 Date launched  
1.29 Date delivered  
1.30 Date of completion of major hull changes, - if any.  
1.31 If changes were made, what changes were made and at which yard were they carried out

<b>Hyundai Mipo Dockyard</b>
<b>HMD</b>
<b>8166</b>
<b>12-Aug-15</b>
<b>8-Oct-15</b>
<b>21-Jan-16</b>
N/A

N/A
Page 2
HHI - Gas Form - 0

**CLASSIFICATION**

1.32 Classification society  
1.33 Class Notation

<b>LR</b>
<p>+100 A1, Liqueified Gas carrier, Ship type 2 G, Ethene(Ethylene), ethane, Propene(Propylene), Propane,Chemical Propane, Propane/ Butane, Anhydrous Ammonia, Vinyl Chloride(VCM), Butandiene, n- Butane, i-Butane, Chemical Butene(Butylene), Isoprene Monomer, Pentane, Pentene, Methyl Chloride, Acetaldehyde, Dimethylamine, Ethyl chloride, Diethylether, Ethylene, Oxide/Propylene Oxide (Max. 30 wt% E.O.), Propene(Propylene) Oxide, Isopropylamine, Monoethylamine and Vinylethylether in indepdant Tank type -C, Maximum Specific Gravity 0.97, Maximum Vapour pressure 5.0 bar g, Minimum cargo temperature minus -104 C, Shipright (ACS(B), SDA,FDA, CM), +LMC, UMS, +Lloyd's RMC(LG), LI, +IWS,NAV1, IGS, ECO( BWT, IHM,EEDI-1,P) Descriptive note: Shipright (BWMP(T,S), SERS, SCM)</p>
N/A
N/A

1.34 If Classification society changed, name of previous society  
1.35 If Classification society changed, date of change  
1.36 Was ship built in accordance with the following regulations:

IMO  
US COAST GUARD  
SIGTTO - EXXONMOBIL  
Other: Maritime Authority of Japan

Approval Received	
YES/NO	YES/NO
YES/NO	YES/NO
YES/NO	YES/NO
YES/NO	YES/NO

1.37 IMO certification

Certificate of fitness - IGC  
Certificate - A328  
Certificate - A329  
Letter of Compliance  
Issued by

YES/NO
YES/NO
YES/NO
YES/NO
LR
YES/NO

1.38 Unattended Machinery Space Certificate

1,39 Net Registered Tonnage  
1.40 Gross Registered Tonnage  
1,41 Suez Net Tonnage - Canal Tonnage  
Suez Gross Tonnage  
1,42 Panama Net Tonnage - Canal Tonnage  
Panama Gross Tonnage

4138
13794
11738,97
15012,17
N/A
11617

**A2 HULL DIMENSIONS**

2.1 Length overall (LOA)  
2.2 Length between perpendiculars (LBP)  
2.3 Distance bow to bridge  
2.4 Distance bridge front - mid point manifold  
2.5 Distance bow to mid-point manifold  
2.6 Extreme breadth  
2.7 Extreme depth  
2.8 Summer draught  
2.9 Corresponding Summer deadweight  
2.10 Light displacement  
2.11 Loaded displacement (Summer deadweight)  
2.12 Cargo tanks cubic capacity - 100%  
2.12.1 Deck tank(s) cubic capacity - 100%  
2.12.2 Cargo tanks cubic capacity - 98%  
2.12.3 Deck tank(s) cubic capacity - 98%  
2.13 Distance from keel to highest point  
2.14 Air draught (normal ballast condition)

147,06	Metres
139	Metres
117,62	Metres
48	Metres
69,62	Metres
22,6	Metres
12,6	Metres
9,214	Metres
14911	Tonnes
6950	Tonnes
21861	Tonnes
12164,6	Cubic metres
123,3	Cubic metres
11921,3	Cubic metres
120,8	Cubic metres
45,1	Metres
38,37	Metres

3.1 TPC - in normal ballast condition  
 TPC - in loaded condition (summer deadweight)

24,92	5,57
29,64	9,214

**A4 LOADED PARTICULARS**

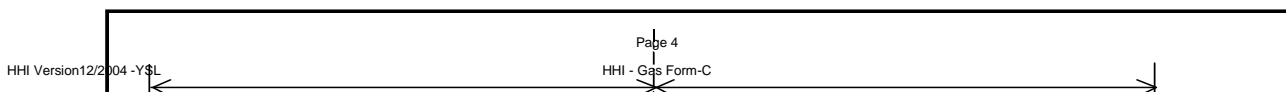
	Butane	Propane	
4.1 Cargo grade	0,6	0,58	
4.2 Density			
4.3 Cargo loadable	7153	6914	Tonnes
4.4 Bunkers - FO	1006	1006	Tonnes
4.5 Bunkers - DO	282	282	Tonnes
4.6 Fresh water	266	266	Tonnes
4.7 Stores & spares	34	34	Tonnes
4.8 Lub oil	54	54	Tonnes
4.9 Ballast	1157	1157	Tonnes
4.10 Deadweight	9952	9713	Tonnes
4.11 Draught - forward	6,48	6,34	Metres
Draught - aft	8,39	8,36	Metres
Draught - mean	7,44	7,35	Metres

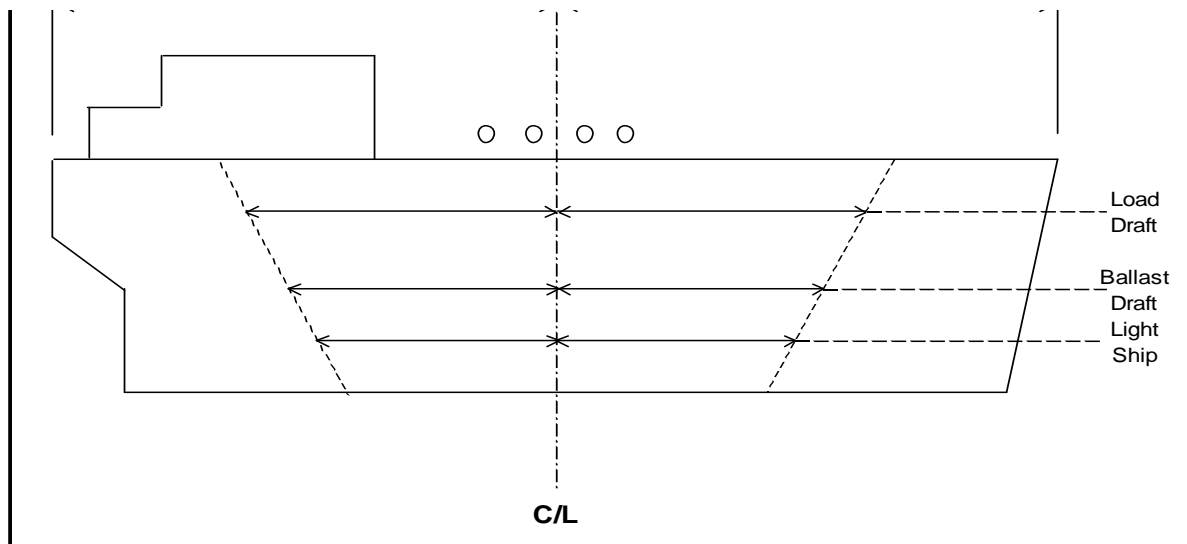
	Butadiene	Propylene	
Cargo grade	0,65	0,6	
Density			
Cargo loadable	7749	7153	Tonnes
Bunkers - FO	1006	1006	Tonnes
Bunkers - DO	282	282	Tonnes
Fresh water	266	266	Tonnes
Stores & spares	34	34	Tonnes
Lub oil	54	54	Tonnes
Ballast	1157	1157	Tonnes
Deadweight	10548	9952	Tonnes
Draught - forward	6,84	6,48	Metres
Draught - aft	8,48	8,39	Metres
Draught - mean	7,66	7,44	Metres

	Ethylene	Ammonia	
Cargo grade	0,57	0,68	
Density			
Cargo loadable	6795	8106	Tonnes
Bunkers - FO	1006	1006	Tonnes
Bunkers - DO	282	282	Tonnes
Fresh water	266	266	Tonnes
Stores & spares	34	34	Tonnes
Lub oil	54	54	Tonnes
Ballast	1157	1157	Tonnes
Deadweight	9594	10905	Tonnes
Draught - forward	6,27	7,06	Metres
Draught - aft	8,34	8,53	Metres
Draught - mean	7,31	7,79	Metres

	VCM	Propylene Oxide	
Cargo grade	0,97	0,82	
Density			
Cargo loadable	11564	7380	Tonnes
Bunkers - FO	1006	1006	Tonnes
Bunkers - DO	282	282	Tonnes
Fresh water	266	266	Tonnes
Stores & spares	34	34	Tonnes
Lub oil	54	54	Tonnes
Ballast	1599	1157	Tonnes
Deadweight	14805	10179	Tonnes
Draught - forward	9,18	6,49	Metres
Draught - aft	9,24	8,48	Metres
Draught - mean	9,21	7,52	Metres

**A5 PARALLEL MID-BODY DIMENSIONS**





5.1	Light ship	<b>29,28</b>	Metres
5.2	Forward to mid-point manifold - light ship	<b>10,01</b>	Metres
5.3	Aft to mid-point manifold - light ship	<b>19,27</b>	Metres
5.4	Normal ballast	<b>52,43</b>	Metres
5.5	Forward to mid-point manifold - normal ballast	<b>25,76</b>	Metres
5.6	Aft to mid-point manifold - normal ballast	<b>26,67</b>	Metres
5.7	Loaded SDWT	<b>74,19</b>	Metres
5.8	Forward to mid-point manifold - loaded SDWT	<b>38,50</b>	Metres
5.9	Aft to mid-point manifold - loaded SDWT	<b>35,69</b>	Metres

**A6 BUNKER CAPACITIES**

Main engine, Auxiliary engine(s)

Grade	Capacity M <sup>3</sup> @ 100%
<b>No 1 P</b>	<b>102,3</b>
<b>No 2 P</b>	<b>272,7</b>
<b>No 3 P</b>	<b>102,3</b>
<b>No 1 S</b>	<b>102,3</b>
<b>No 2 S</b>	<b>272,7</b>
<b>No 3 S</b>	<b>102,3</b>
<b>No 1 Settling</b>	<b>18,1</b>
<b>No 1 Service</b>	<b>18,1</b>
<b>No 2 Settling</b>	<b>29,2</b>
<b>No 2 Service</b>	<b>17,6</b>
<b>MDO</b>	<b>319,8</b>

Other: Storage (P + S)//Service Tanks

**A7 FUEL CONSUMPTION DETAILS PLEASE SEE CHARTER PARTY**

Note: based on shop test ISO ambient condition, HFO of 9,700 Kcal/kg

- 7.1 At sea - normal service speed (About 15.0 Knots)
- 7.2 At sea - normal service speed - while conditioning cargo (cooling down of cargo - 3 Cargo Compressors)
- 7.3 In port - loading based on three (3) diesel generator 24 hours running
- 7.4 In port - discharging based on three (3) diesel generator 24 hours running
- 7.5 In port - idle

Grade		
Fuel oil		Tonnes/day
Diesel oil		Tonnes/day
Gas oil		Tonnes/day
Fuel oil		Tonnes/day
Diesel oil		Tonnes/day
Gas oil		Tonnes/day
Fuel oil		Tonnes/day
Diesel oil		Tonnes/day
Gas oil		Tonnes/day
Fuel oil		Tonnes/day
Diesel oil		Tonnes/day
Gas oil		Tonnes/day
Fuel oil		Tonnes/day
Diesel oil		Tonnes/day
Gas oil		Tonnes/day

Copies of the vessel's Speed and Consumption Graph for both Laden and Ballast conditions are enclosed?

NO
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**A8 MAIN ENGINE PARTICULARS**

8.1	Main engine make and type	<b>Hyundai-B&amp;W</b>	
		<b>6S46ME-B8.3</b>	
8.2	Number of units	One(1)	
8.3	Maximum continuous rating (MRC) per engine	kW @ RPM	
		<b>6,430 kW</b>	<b>125 RPM</b>
8.4	Total available power	6.430 HP	
8.5	Normal service power	5.144 HP	

**A9 AUXILIARY PLANTS**

9.1	Make and type of auxiliary generators / engines	<b>Hyundai HiMSEN</b>	
		<b>6H21/32</b>	
9.2	Number of units	Three(3)	
9.3	Maximum generator output per unit	RPM	Kilowatts
	Unit no. 1	900	1.250
	Unit no. 2	900	1.250
	Unit no. 3	900	1.250
	Unit no. 4		
9.4	Shaft generator	N/A	
9.5	Total available power	3750	
9.6	Emergency generator	1800	120
9.7	Emergency fire pump - type	Vertical Centrifugal	
	Delivery pressure	10(total head) Bar	
	Motive power	Electrical	
	If electrical, - indicate power required	55 Kilowatts	
9.8	Steering gear - type	Rotary vane	
	Indicate power required to steer the vessel with one pump unit	22 Kilowatts	

**A10 POWER/SPEED INFORMATION**

10.1	Trial data	BHP	6039	
		MRC	128,9	SHP
		Speed	18,32	Knots
		Draught	5,14	Metres
10.2	Normal service speed	BHP	5144	
		MRC	116	SHP
		Speed	16	Knots
		Draught	7,3	Metres

**A11 THRUSTERS**

11.1	Make and type	<b>HHI-HSC-1550S / Controllable Pitch</b>	
11.2	Bow thruster	(output)	750 Kilowatts
11.3	Stern thruster	(output)	NA Kilowatts

**A12 FRESH WATER**

12.1	Capacity of distilled tanks	0 Tonnes	
12.2	Capacity of domestic tanks	266,6 Tonnes	
12.3	Daily consumption	Distilled	5 Tonnes
		Domestic	9 Tonnes
12.4	Daily evaporator capacity	20 Tonnes	

**A13 BALLAST CAPACITIES AND PUMPS**

	Tank	Capacity (m3)	Number
13.1	Fore peak	307,6	1
13.2	Wing and or side tanks	753	2
13.3	Double bottom tanks	3918,4	17
13.4	Aft peak	212,7	1
13.5	Other:		
13.6	Total	5191,7	21

- 13.7 Ballast pump make and type
- 13.8 Number of pumps
- 13.9 Total capacity
- 13.10 Location
- 13.11 Control location

SHIN SHIN / C200 VIC MDVC - CENTRIFUGAL ELECTRIC DRIVEN	
	2
	300
E/room (Floor)	
PUMP SIDE / CCR / ECR	

M3/hour

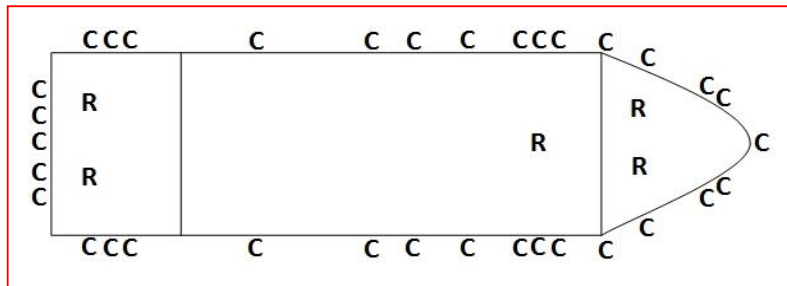
**A14 MOORING EQUIPMENT**

**14.1 ROPES**

Indicate on the diagram below the position of:

- Winch Mounted Ropes (R)
- Open Fairleads (O)
- Closed Fairleads (C) **\_ APPLICATION OF CLOSED CHOCK**

Alternatively enclosed copy of vessel's Mooring arrangements in A4 format.



**MOORING ROPES (ON DRUMS)**

**Mooring Ropes (On Drums) Forecastle - Number**

Diameter

Material

Length

Breaking Strength

4	
38	mm.
50% POLYESTER - 50 % POLYSTEEL	
200	Metres
38,5	Tonnes

**Mooring Ropes (On Drums) Forward Main Deck - Number**

Diameter

Material

Length

Breaking Strength

2	
38	mm.
50% POLYESTER - 50 % POLYSTEEL	
200	Metres
38,5	Tonnes

**Mooring Ropes (On Drums) Aft Main Deck - Number**

Diameter

Material

Length

Breaking Strength

	mm.
	Metres
	Tonnes

**Mooring Ropes (On Drums) Poop - Number**

Diameter

Material

Length

Breaking Strength

4	
38	mm.
50% POLYESTER - 50 % POLYSTEEL	
200	Metres
38,5	Tonnes

**OTHER MOORING LINES**

**Mooring Ropes not on Drums - Number**

Diameter

Material

Length

Breaking Strength

8	
38	mm.
50% POLYESTER - 50 % POLYSTEEL	
220	Metres
38,5	Tonnes

**Emergency Towing Wires / Fire Wires - Number**

Diameter

Material

Length

Breaking Strength

2	
28	mm.
FIRE WIRES : GALVANIZED STEEL	
45	Metres
3,425.0 N	Tonnes

**14.2 MOORING WINCHES**

**Forecastle - Number**

Single Drum or Double Drums

Split Drums Y/N

2
Double
YES



Motive Power	<b>El-Hydraulic</b>	
Heaving Power	<b>12,5</b>	Tonnes
Brake Capacity	<b>38,5</b>	Tonnes
Hauling Speed	<b>15</b>	Metres/Min.
<b>Forward Main Deck - Number</b>	<b>1</b>	
Single Drum or Double Drums	<b>Double</b>	
Split Drums Y/N	<b>YES</b>	
Motive Power	<b>El-Hydraulic</b>	
Heaving Power	<b>12,5</b>	Tonnes
Brake Capacity	<b>38,5</b>	Tonnes
Hauling Speed	<b>15</b>	Metres/Min.
<b>Aft Main Deck - Number</b>	<b>N/A</b>	
Single Drum or Double Drums		
Split Drums Y/N		
Motive Power		
Heaving Power		Tonnes
Brake Capacity		Tonnes
Hauling Speed		Metres/Min.
<b>Poop - Number</b>	<b>2</b>	
Single Drum or Double Drums	<b>Double</b>	
Split Drums Y/N	<b>YES</b>	
Motive Power	<b>El-Hydraulic</b>	
Heaving Power	<b>12,5</b>	Tonnes
Brake Capacity	<b>38,5</b>	Tonnes
Hauling Speed	<b>15</b>	Metres/Min.

14.3 **ANCHORS AND WINDLASS**

Windlass motive power(e.g. steam, hydraulic)	<b>Electro-Hydraulic</b>	
Hauling power	<b>16,3</b>	Tonnes
Brake holding power	<b>119,2</b>	Tonnes
Anchor type	<b>Stockless, High Holding Power, AC-14</b>	
Weight	<b>4,33</b>	Tonnes
Is spare anchor carried	<b>NO</b>	
Cable diameter	<b>58</b>	mm.
Number of shackles port cable	<b>11</b>	
Number of shackles starboard cable	<b>10</b>	

14.4 **TOWING ARRANGEMENTS**

Is the vessel fitted with a Towing Bracket Aft?	<b>N/A</b>	
If Yes, state SWL		Tonnes
Is Towing chain provided	<b>N/A</b>	
Dimensions of Towing wire		
Diameter		mm.
Length		Metres

14.5 **WINDAGE**

Windage on ballast draught	<b>End-on</b>	<b>530</b>	Squaremetres
	<b>Lateral</b>	<b>1936</b>	Squaremetres

**A15 NAVIGATIONAL EQUIPMENT**

15.1	Magnetic compass		<b>YES/NO</b>
15.2	Off Course Alarm - Magnetic compass		<b>YES/NO</b>
15.3	Gyro compass		<b>YES/NO</b>
		Number of Units	<b>2</b>
15.4	Off Course Alarm - Gyro compass		<b>YES/NO</b>
15.5	Gyro (Bridge) Repeaters		<b>YES/NO</b>
		Number of Units	<b>5</b>
15.6	Radar 3cm		<b>YES/NO</b>
15.7	Radar 10cm		<b>YES/NO</b>
15.8	Are radars gyro stabilised?		<b>YES/NO</b>
15.9	Radar plotting equipment		<b>YES/NO</b>
15.10	ARPA		<b>YES/NO</b>
15.11	ECDIS		<b>YES/NO</b>
15.12	Depth sounder with recorder		<b>YES/NO</b>

15.13	Depth sounder without recorder	YES/NO
15.14	Speed/distance indicator	YES/NO
15.15	Doppler log	YES/NO
15.16	Docking approach Doppler	YES/NO
15.17	Rudder angle indicator	YES/NO
15.18	Rudder angle indicator on Each Bridge Wing	YES/NO
15.19	RPM indicator	YES/NO
15.20	RPM indicator on Each Bridge Wing	YES/NO
15.21	Controllable pitch propeller indicator	YES/NO/NA
15.22	Thruster(s) indicator	YES/NO
15.23	Rate of turn indicator	YES/NO
15.24	Radio direction finder	YES/NO
15.25	Navtex receiver	YES/NO
15.26	GPS	YES/NO
15.26.1	DGPS	YES/NO
15.27	Transit SATNAV	YES/NO
15.28	Decca navigator	YES/NO
15.29	Omega	YES/NO
15.30	Loran C	YES/NO
15.31	Weather fax	YES/NO
15.32	Sextant(s)	YES
15.33	Signal lamp ALDIS	YES/NO
15.34	Anemometer	YES/NO
15.35	Engine order recorder	YES/NO
15.35.1	VDR (Voyage Data Recorder)	YES/NO
15.36	Course recorder	YES/NO
15.37	Are steering motor controls and engine controls fitted on bridge wings?	YES/NO
15.38	Is bridge equipped with a 'Dead-Man' alarm?	YES/NO/NA
15.39	What chart outfit coverage is provided	World-wide Limited YES/NO
	If limited, - please indicate area(s) covered	N/A
15.40	Formal chart correction system in use	YES/NO
15.41	Electronic Chart system in use	YES/NO

**A16 COMMUNICATIONS AND ELECTRONICS**

16.2	What GMDSS areas is the vessel classed for? A1 A2 A3 A4	A1+A2+A3
16.3	Transponder (SART)	YES/NO
16.4	EPIRB	YES/NO
16.5	How many VHF radios are fitted on the bridge?	2
16.6	Is vessel fitted with VHF in the cargo control room (CCR)?	YES/NO
16.7	Is the CCR connected to the vessel's internal communication system?	YES/NO
16.8	How many intrinsically safe walkie talkies are provided for cargo handling?	11
16.9	Is vessel fitted with an INMARSAT satellite communications system?	YES/NO
16.10	Does vessel carry at least three survival craft two-way radio telephones?	YES/NO
16.11	Inmarsat satellite system	YES/NO
	Specify system type A, B or C	C / FBB 500
16.12	2182kHz bridge auto alarm	YES/NO
16.13	Radio telephone distress frequency watch receiver	YES/NO
16.14	Emergency lifeboat transceiver	YES/NO
16.15	Can vessel transmit the helicopter homing signal on 410 kHz?	YES/NO
16.16	Full set of Radio List publications	YES/NO

**SECTION B  
CARGO SYSTEMS**

1.1 List products which the ship is Certified to carry

Ethylene, Ethane, Propylene, Propane, Commercial Propane ( max ethane content 5% ),
Propane/Butane mix, Anhydrous ammonia, Vinyl chloride monomer (VCM),
Butadiene, n-Butane, i-Butane, Commercial butane (n-Butane/i-Butane mix),
Methyl Chloride, Mixed C4, Acetaldehyde, Dimethylamine, Ethyl Chloride,
Diethyl Ether, Ethylene Oxide/Propylene Oxide (max 30 % wt E.O.),
Propylene Oxide, Isoprene (monomer), Pentane, Pentene, Isopropylamine,
Monoethylamine, Vinylethylether

**Transport and Carriage Conditions**

1.2	Minimum allowable tank temperature	-104	Deg. Celsius
1.3	Maximum Permissible tank pressure	5	Bar g
1.4	List Number of grades that can be loaded/discharged simultaneously and completely segregated without risk of contamination?	2	
1.5	List the Number of grades that can be carried simultaneously and completely segregated without risk of contamination?	2	
1.6	What is the Number of Products that can be conditioned by reliquefaction simultaneously?	2	
1.7	State the number of natural segregation's (NB: Separation must be by the removal of spools or the insertion of blanks)	2	

**B2 CARGO TANKS**

2.1	Type and materials of cargo tanks	Independent Type C (cylindrical)	Low temperature, 5% Ni-steel, X12Ni5
2.2	Maximum allowable relief valve setting	5	Bar gauge
2.2.1	IMO Setting	5	Bar gauge
2.2.2	USCG Setting	5	Bar gauge
2.3	Safety valve set pressure, - if variable stipulate range of pilot valves	5	Bar gauge
2.4	Maximum allowable vacuum	0,75	Bar abs
2.5	Maximum cargo density at 15 deg Celsius	972	kg/m³
2.6	Maximum rate of cool-down	10	Deg Cel / Hour
2.7	State any limitations regarding partially filled tanks	no	

<b>Diethylether, Etylene Oxide/Propylene Oxide, Isopropylamine, Monoethylamine, Vinylethylether max. 3000 m³ per cargo tank</b>

2.8	State allowable combinations of filled and empty tanks	No.1 (2+3 empty); No.2(1+3 empty); No.3 (1+2 empty); Nos. 1+2 (No. 3 empty); Nos. 1+3 (No. 2 empty); Nos. 2+3 (No 1 empty)
		There are no limitations for partial filling ratio

**B3 CARGO TANK CAPACITIES**

**Tank number / location**

	Tank 1/ Fore	
Capacity m3 (100%)	4057	m3
Capacity 98%	3976	m3
Butane capacity	2385	Tonnes
Butane temperature	0	Deg. C
Propane capacity	2306	Tonnes
Propane temperature	-42	Deg. C
Butadiene capacity	2584	Tonnes

Butadiene temperature	-4	Deg. C
Propylene capacity	2385	Tonnes
Propylene temperature	-48	Deg. C
Vinyl Chloride Monomer capacity	3856	Tonnes
Vinyl Chloride Monomer temperature	-14	Deg. C
Ethylene capacity	2266	Tonnes
Ethylene temperature	-103,4	Deg. C
Propylene Oxide capacity	2460	Tonnes
Propylene Oxide temperature	24	Deg. C
Ammonia capacity	2703	Tonnes
Ammonia temperature	-33,5	Deg. C

**Tank number / location**

Capacity m3 (100%)	4051	m3
Capacity 98%	3970	m3
Butane capacity	2382	Tonnes
Butane temperature	0	Deg. C
Propane capacity	2303	Tonnes
Propane temperature	-42	Deg. C
Butadiene capacity	2580	Tonnes
Butadiene temperature	-4	Deg. C
Propylene capacity	2382	Tonnes
Propylene temperature	-48	Deg. C
Vinyl Chloride Monomer capacity	3851	Tonnes
Vinyl Chloride Monomer temperature	-14	Deg. C
Ethylene capacity	2263	Tonnes
Ethylene temperature	-103,4	Deg. C
Propylene Oxide capacity	2460	Tonnes
Propylene Oxide temperature	24	Deg. C
Ammonia capacity	2700	Tonnes
Ammonia temperature	-33,5	Deg. C

<b>Tank 2/ Mid.</b>		
	4051	m3
	3970	m3
	2382	Tonnes
	0	Deg. C
	2303	Tonnes
	-42	Deg. C
	2580	Tonnes
	-4	Deg. C
	2382	Tonnes
	-48	Deg. C
	3851	Tonnes
	-14	Deg. C
	2263	Tonnes
	-103,4	Deg. C
	2460	Tonnes
	24	Deg. C
	2700	Tonnes
	-33,5	Deg. C

**Tank number / location**

Capacity m3 (100%)	4057	m3
Capacity 98%	3976	m3
Butane capacity	2385	Tonnes
Butane temperature	0	Deg. C
Propane capacity	2306	Tonnes
Propane temperature	-42	Deg. C
Butadiene capacity	2584	Tonnes
Butadiene temperature	-4	Deg. C
Propylene capacity	2385	Tonnes
Propylene temperature	-48	Deg. C
Vinyl Chloride Monomer capacity	3856	Tonnes
Vinyl Chloride Monomer temperature	-14	Deg. C
Ethylene capacity	2266	Tonnes
Ethylene temperature	-103,4	Deg. C
Propylene Oxide capacity	2460	Tonnes
Propylene Oxide temperature	24	Deg. C
Ammonia capacity	2703	Tonnes
Ammonia temperature	-33,5	Deg. C

<b>Tank 3/ Aft</b>		
	4057	m3
	3976	m3
	2385	Tonnes
	0	Deg. C
	2306	Tonnes
	-42	Deg. C
	2584	Tonnes
	-4	Deg. C
	2385	Tonnes
	-48	Deg. C
	3856	Tonnes
	-14	Deg. C
	2266	Tonnes
	-103,4	Deg. C
	2460	Tonnes
	24	Deg. C
	2703	Tonnes
	-33,5	Deg. C

Total Capacity of all cargo tanks (100%)	12165	m3
Total Capacity of all cargo tanks (98%)	11921	m3
Total Capacity of Butane	7153	Tonnes
Total Capacity of Propane	6914	Tonnes
Total Capacity of Butadiene	7749	Tonnes
Total Capacity of Propylene	7153	Tonnes
Total Capacity of Vinyl Chloride Monomer	11564	Tonnes
Total Capacity of Ethylene	6795	Tonnes
Total Capacity of Propylene Oxide	7380	Tonnes
Total Capacity of Ammonia	8106	Tonnes

Material of tank(s)  
Maximum allowable relief valve setting

<b>X12 Ni5</b>	
<b>18</b>	Bar gauge

**Deck tank number 1** - capacity (100%)  
Capacity 98%  
Propane Capacity, sat @ +45°C  
Butane Capacity, sat @ +45°C  
Propylene capacity, sat @ +45°C  
Ethylene capacity, sat @ -31°C  
Ammonia Capacity, sat @ +45°C

<b>123,3</b>	m3
<b>120,8</b>	m3
54	Tonnes
64	Tonnes
55	Tonnes
52	Tonnes
67	Tonnes

## B4 LOADING RATES

### 4.1 From Refrigerated Storage (Fully Refrigerated at Vessel's Manifold)

Butane - with vapour return  
Butane - without vapour return  
Propane - with vapour return  
Propane - without vapour return  
Butadiene - with vapour return  
Butadiene - without vapour return  
Propylene - with vapour return  
Propylene - without vapour return  
Ethylene - with vapour return  
Ethylene - without vapour return  
Ammonia - with vapour return  
Ammonia - without vapour return  
Vinyl Chloride Monomer - with vapour return  
Vinyl Chloride Monomer - without vapour return  
Propylene Oxide - with vapour return  
Propylene Oxide - without vapour return

<b>1200</b>	m <sup>3</sup> /Hr.
720	Tonnes/Hr.
<b>1200</b>	m <sup>3</sup> /Hr.
696	Tonnes/Hr.
780	Tonnes/Hr.
780	Tonnes/Hr.
<b>1200</b>	m <sup>3</sup> /Hr.
730	Tonnes/Hr.
<b>1200</b>	m <sup>3</sup> /Hr.
680	Tonnes/Hr.
<b>1200</b>	m <sup>3</sup> /Hr.
816	Tonnes/Hr.
1164	Tonnes/Hr.
1164	Tonnes/Hr.
<b>1200</b>	m <sup>3</sup> /Hr.
987	Tonnes/Hr.

### 4.8 From Pressure Storage

**Butane** 0 deg C - with vapour return  
0 deg C - without vapour return  
10 deg C - with vapour return  
10 deg C - without vapour return  
20 deg C - with vapour return  
20 deg C - without vapour return

720	Tonnes/Hr.
720	Tonnes/Hr.
720	Tonnes/Hr.
720	Tonnes/Hr.
720	Tonnes/Hr.
720	Tonnes/Hr.

**Propane** minus 30 deg C - with vapour return  
Minus 30 deg C - without vapour return  
Minus 20 deg C - with vapour return  
Minus 20 deg C - without vapour return  
Minus 10 deg C - with vapour return  
Minus 10 deg C - without vapour return  
0 deg C - with vapour return  
0 deg C - without vapour return  
10 deg C - with vapour return  
10 deg C - without vapour return  
20 deg C - with vapour return  
20 deg C - without vapour return

696	Tonnes/Hr.
696	Tonnes/Hr.
696	Tonnes/Hr.
696	Tonnes/Hr.
696	Tonnes/Hr.
696	Tonnes/Hr.
696	Tonnes/Hr.
696	Tonnes/Hr.
696	Tonnes/Hr.
696	Tonnes/Hr.
500	Tonnes/Hr.
400	Tonnes/Hr.
200	Tonnes/Hr.

**Butadiene** 0 deg C - with vapour return  
0 deg C - without vapour return  
10 deg C - with vapour return  
10 deg C - without vapour return  
20 deg C - with vapour return  
20 deg C - without vapour return

780	Tonnes/Hr.
780	Tonnes/Hr.
780	Tonnes/Hr.
700	Tonnes/Hr.
780	Tonnes/Hr.
500	Tonnes/Hr.

**Propylene** minus 30 deg C - with vapour return  
Minus 30 deg C - without vapour return  
Minus 20 deg C - with vapour return  
Minus 20 deg C - without vapour return  
Minus 10 deg C - with vapour return  
Minus 10 deg C - without vapour return

<b>1200</b>	m <sup>3</sup> /hr.
<b>1200</b>	m <sup>3</sup> /hr.
<b>1200</b>	m <sup>3</sup> /hr.
<b>1200</b>	m <sup>3</sup> /hr.
<b>1200</b>	m <sup>3</sup> /hr.
<b>350</b>	m <sup>3</sup> /hr.

0 deg C - with vapour return	1200	m <sup>3</sup> /hr.
0 deg C - without vapour return	200	m <sup>3</sup> /hr.
10 deg C - with vapour return	1200	m <sup>3</sup> /hr.
10 deg C - without vapour return	150	m <sup>3</sup> /hr.
20 deg C - with vapour return	1200	m <sup>3</sup> /hr.
20 deg C - without vapour return	100	m <sup>3</sup> /hr.

<b>Ethylene</b> minus 100 deg C - with vapour return	1200	m <sup>3</sup> /hr.
Minus 100 deg C - without vapour return	1200	m <sup>3</sup> /hr.
Minus 95 deg C - with vapour return	1200	m <sup>3</sup> /hr.
Minus 95 deg C - without vapour return	500	m <sup>3</sup> /hr.
Minus 90 deg C - with vapour return	800	m <sup>3</sup> /hr.
Minus 90 deg C - without vapour return	300	m <sup>3</sup> /hr.
Minus 85 deg C - with vapour return	200	m <sup>3</sup> /hr.
Minus 85 deg C - without vapour return	100	m <sup>3</sup> /hr.

<b>Ammonia</b> minus 20 deg C - with vapour return	1200	m <sup>3</sup> /hr.
Minus 20 deg C - without vapour return	1200	m <sup>3</sup> /hr.
Minus 10 deg C - with vapour return	N/A	m <sup>3</sup> /hr.
Minus 10 deg C - without vapour return	N/A	m <sup>3</sup> /hr.
0 deg C - with vapour return	N/A	m <sup>3</sup> /hr.
0 deg C - without vapour return	N/A	m <sup>3</sup> /hr.

<b>VCM</b> minus 10 deg C - with vapour return	1200	m <sup>3</sup> /hr.
Minus 10 deg C - without vapour return	1200	m <sup>3</sup> /hr.
0 deg C - with vapour return	1200	m <sup>3</sup> /hr.
0 deg C - without vapour return	1200	m <sup>3</sup> /hr.
10 deg C - with vapour return	1200	m <sup>3</sup> /hr.
10 deg C - without vapour return	100	m <sup>3</sup> /hr.
20 deg C - with vapour return	1200	m <sup>3</sup> /hr.
20 deg C - without vapour return	750	m <sup>3</sup> /hr.

4.14

**Special remarks:**

1) Above figures are basis all tanks pre-cooled close to product's boiling point.
2) Butane refers to n-Butane
3) Propane refers to n-Propane, not the commercial grade of the product.
4) AMMONIA SHOULD NOT BE LOADED HOTTER THAN -20 C

**B5 DISCHARGING - GENERAL**

**Cargo Pumps**

5.1	Type of Pumps	Deepwell, vertical, centrifugal, multistage
5.2	Number of pumps per tank	1
5.3	Rate per Pump	400 m <sup>3</sup> /hr
5.4	At Delivery Head mlc	120 mlc
5.5	Maximum density	972 Kg/m <sup>3</sup>

**Booster Pump**

5.6	Type of Booster Pumps	Horizontal, centrifugal, single stage
5.7	Number of pumps	2
5.8	Rate per Pump	400 m <sup>3</sup> /hr
5.9	At Delivery Head mlc	120 mlc
5.10	Maximum density	680 Kg/m <sup>3</sup>

**Copies of pumping curves for cargo and booster pumps are enclosed?**

NO
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**B6 DISCHARGE PERFORMANCE**

Full Cargo Discharge Times (using all cargo pumps)

**Fully Refrigerated**

Page 13

Manifold Back Press 1 bar g, with vapour return

12	Hours
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Manifold Back Press 1 bar g, without vapour return	12	Hours
Manifold Back Press 5 bar g, with vapour return	14	Hours
Manifold Back Press 5 bar g, without vapour return	14	Hours
Manifold Back Press 10 bar g, with vapour return	42	Hours
Manifold Back Press 10 bar g, without vapour return	42	Hours

**Pressurised**

Manifold Back Press 1 bar g, with vapour return	12	Hours
Manifold Back Press 1 bar g, without vapour return	12	Hours
Manifold Back Press 5 bar g, with vapour return	14	Hours
Manifold Back Press 5 bar g, without vapour return	14	Hours
Manifold Back Press 10 bar g, with vapour return	42	Hours
Manifold Back Press 10 bar g, without vapour return	42	Hours

**B7 UNPUMPABLES**

- 7.1 Tank number / location
- Tank number / location
- Tank number / location
- Tank number / location
- Tank number / location
- Tank number / location
- Tank number / location
- Tank number / location
- Tank number / location
- Total

Tank 1/ fore	0,2	m3
Tank 2/ mid	0,2	m3
Tank 3/ aft	0,2	m3
		m3
		m3
		m3
		m3
		m3
		m3
		m3
	0,6	m3

**B8 VAPORISING UNPUMPABLES**

- 8.1 Process used
- Time to vaporise liquid unpumpables remaining after full cargo discharge of:

Hot gassing

8.2 Butane	12	Hours
8.3 Propane	9	Hours
8.4 Butadiene	12	Hours
8.5 Propylene	9	Hours
8.6 Ethylene	9	Hours
8.7 Ammonia	9	Hours
8.8 Vinyl Chloride Monomer	12	Hours
8.9 Propylene Oxide	N/A	Hours

**B9 RELIQUEFACTION PLANT**

- 9.1 Plant Design Conditions - air temperature
- 9.3 Plant Design Conditions - sea temperature

45	Deg. C
32	Deg. C

**Plant Type**

- 9.4 Is the plant single stage/direct?
- 9.5 Is the plant two stage/direct?
- 9.6 Is the plant simple cascade?
- 9.7 Coolant type

YES
YES
YES

Seawater and propylene

**Compressors**

- 9.8 Compressor type
- 9.8.1 Compressor makers name
- 9.9 Number of compressors
- 9.10 Capacity per unit
- 9.11 Are they Oil Free?

Two cylinder double acting, oil free, reciprocating	
Burckhardt- Compression	
3	
1200	m3/hr
YES	

**B11 CARGO TEMPERATURE LOWERING CAPABILITY (AT SEA WITH SEA TEMPERATURE +15C)**

**Time taken to lower the temperature of:**

11.1 Propane from -5 deg C to - 42 deg C	186	Hours
11.2 Propane from -20 deg C to - 42 deg C	144	Hours
11.3 Propane from -38 deg C to - 42deg C	36	Hours
Propane from +20 deg C to 0 deg C	50	Hours

11.5	<b>Propane</b> from 0 deg C to -20 deg C	62	Hours
11.6	<b>Butane</b> from +20 deg C to 0 deg C	100	Hours
11.7	<b>Butane</b> from +10 deg C to 0 deg C	55	Hours
11.8	<b>Butane</b> from +10 deg C to -5 deg C	80	Hours
11.9	<b>Butadiene</b> From +20 deg C to -5 deg C	100	Hours
11.10	<b>Propylene</b> From -20 deg C to -47 deg C	144	Hours
11.11	<b>Ethylene</b> From -100 deg C to -104 deg C	70	Hours
11.12	<b>Ammonia</b> From -20 deg C to -33 deg C	168	Hours
11.13	<b>Vinyl Chloride Monomer</b> From -5 deg C to -14 deg C	50	Hours

## B12 INERT GAS AND NITROGEN

<b>Main IG Plant</b>		<b>PSA - Nitrogen Plant</b>	
12.1	Type of system	N2 - 99,5%	1000 Nm3/hr
12.2	Capacity		
12.3	Type of fuel used	N/A	
12.4	Composition of IG - oxygen	N/A	%
	Composition of IG - CO2	N/A	%
	Composition of IG - Nox	N/A	%
	Composition of IG - N2	N/A	%
12.5	Lowest dewpoint achievable	-50	Deg. C
12.6	Used for	N2 purging/Inerting	
<b>Auxiliary IG or Nitrogen plant</b>		<b>PSA - Nitrogen Plant</b>	
12.7	Type of System	N2 - 99,5%	1000 m3/hr
12.8	Capacity		
12.9	Composition of IG - oxygen	N/A	
	Composition of IG - CO2	N/A	%
	Composition of IG - Nox	N/A	%
	Composition of IG - N2	N/A	%
12.10	Lowest dewpoint achievable	N/A	Deg. C
12.11	Used for	-50	
		N2 purging/Inerting	
<b>Nitrogen</b>		N/A	m3
12.12	Liquid storage capacity	N/A	m3
12.13	Daily boil-off loss	N/A	Bar g
12.14	Maximum supply pressure	N/A	m3/hr
12.15	Supply capacity	N/A	
12.16	Used for	N/A	

## B13 CARGO TANK INERTING/DE-INERTING

13.1	Time taken to inert from fresh air to under 5% O2 at minus 25 degree C?	24	Hours
13.2	Time taken to inert from cargo vapour to fully inert at minus 25 degrees dewpoint when IG density is <b>less</b> than product?	24	Hours
	Time taken to inert from cargo vapour to fully inert at minus 25 degrees dewpoint when IG density is <b>greater</b> than product?	30	Hours



- 14.1 Plant used  
 14.2 Time taken from fully inert condition to fully breathable fresh air?

PSA Plant in Dry Air Mode	
	12

Hours

**B15 CHANGING CARGO GRADES**

**Indicate number of hours needed to change grades from the removal of pumpables to tanks fit to load and the estimated quantity of Inert Gas and or Nitrogen consumed during the operation:**

	Hours	Inert Gas (Nm <sup>3</sup> /hr)	Nitrogen (Nm <sup>3</sup> )
From Propane to Butane	10		0
From Propane to Butadiene	56		24.000
From Propane to Ethylene	64		30000
From Propane to Ammonia ( * )	50		24.000
From Propane to Vinyl Chloride Monomer ( * )	78		30.000
From Propane to Propylene Oxide	114		54000
From Butane to Propane	12		0
From Butane to Butadiene	50		24.000
From Butane to Ethylene	96		54000
From Butane to Ammonia ( * )	50		24.000
From Butane to Vinyl Chloride Monomer	108		54.000
From Butane to Propylene Oxide	108		54000
From Butadiene to Propane	12		0
From Butadiene to Butane	12		0
From Butadiene to Ethylene	122		54000
From Butadiene to Ammonia	76		24.000
From Butadiene to Vinyl Chloride Monomer	136		54.000
From Butadiene to Propylene Oxide	136		54000
From Ethylene to Propane	24		0
From Ethylene to Butane	36		0
From Ethylene to Butadiene	96		36000
From Ethylene to Ammonia	82		36000
From Ethylene to Vinyl Chloride Monomer	112		36000
From Ethylene to Propylene Oxide	142		66000
From Ammonia to Propane ( * , # )	108		54000
From Ammonia to Butane ( * , # )	108		54000
From Ammonia to Butadiene	132		54.000
From Ammonia to Ethylene	118		54000
From Ammonia to Vinyl Chloride Monomer	132		54.000
From Ammonia to Propylene Oxide	132		54000
From Vinyl Chloride Monomer to Propane	114		54000
From Vinyl Chloride Monomer to Butane	114		54000
From Vinyl Chloride Monomer to Butadiene	138		54.000
From Vinyl Chloride Monomer to Ammonia	78		24.000
From Vinyl Chloride Monomer to Ethylene	120		54000
From Vinyl Chloride Monomer to Propylene Oxide	138		54000
From Propylene Oxide to Propane	154		66000
From Propylene Oxide to Butane	154		66000
From Propylene Oxide to Butadiene	160		66000
From Propylene Oxide to Ethylene	160		66000
From Propylene Oxide to Vinyl Chloride Monomer	166		66000
From Propylene Oxide to Ammonia	116		36000

(\*) means to include air purging and inerting (#) means for condition of less than 15ppm ammonia.

**Loading cargoes of ammonia or after ammonia is often subject to specific terminal requirements.**

Cargo Grade Change Operations that cannot be carried out at sea:

N/A

**B17 PRE-LOADING COOLDOWN**

The following questions ask the Time and Quantity of coolant required to cooldown cargo tanks from ambient temperature to fully gassed up state sufficient to allow loading to commence.

17.1	<b>Propane</b> - Quantity of Coolant Required	100	m3
	<b>Propane</b> - Time required to cooldown cargo tanks from ambient temperature with vapour return line	8	Hours
	<b>Propane</b> - Time required to cooldown cargo tanks from ambient temperature without vapour return line	12	Hours
17.2	<b>Butane</b> - Quantity of Coolant Required	100	m3
	<b>Butane</b> - Time required to cooldown cargo tanks from ambient temperature with vapour return line	4	Hours
	<b>Butane</b> - Time required to cooldown cargo tanks from ambient temperature without vapour return line	6	Hrs.
17.3	<b>Butadiene</b> - Quantity of Coolant Required	80	m3
	<b>Butadiene</b> - Time required to cooldown cargo tanks from ambient temperature with vapour return line	3	Hours
	<b>Butadiene</b> - Time required to cooldown cargo tanks from ambient temperature without vapour return line	4	Hours
17.4	<b>Propylene</b> - Quantity of Coolant Required	80	m3
	<b>Propylene</b> - Time required to cooldown cargo tanks from ambient temperature without vapour return line	8	Hours
	<b>Propylene</b> - Time required to cooldown cargo tanks from ambient temperature with vapour return line	12	Hours
17.5	<b>Ethylene</b> - Quantity of Coolant Required	80	m3
	<b>Ethylene</b> - Time required to cooldown cargo tanks from ambient temperature with vapour return line	12	Hours
	<b>Ethylene</b> - Time required to cooldown cargo tanks from ambient temperature without vapour return line	16	Hrs.
17.6	<b>Ammonia</b> - Quantity of Coolant Required	70	m3
	<b>Ammonia</b> - Time required to cooldown cargo tanks from ambient temperature with vapour return line	6	Hours
	<b>Ammonia</b> - Time required to cooldown cargo tanks from ambient temperature without vapour return line	8	Hours
17.7	<b>VCM</b> - Quantity of Coolant Required	60	m3
	<b>VCM</b> - Time required to cooldown cargo tanks from ambient temperature without vapour return line	4	Hours
	<b>VCM</b> - Time required to cooldown cargo tanks from ambient temperature with vapour return line	4	Hours

**B18 CARGO HEATER/VAPORISER (acting as vaporiser)**

		Shell and tube	
18.1	Type of Vaporiser	1	
18.2	Number of Vaporisers fitted	1400	m3/hr Vap
18.3	Capacity per unit - <b>Propane</b>	5,16	m3/hr Liq
18.4	Liquid Supply Rate	-42	Deg. C
18.5	Delivery Temperature	1500	m3/hr Vap
18.6	Capacity per unit - <b>Ammonia</b>	1,78	m3/hr Liq
18.7	Liquid Supply Rate	-33	Deg. C
18.8	Delivery Temperature	N/A	m3/hr Vap
18.9	Capacity per unit - <b>Nitrogen</b>	N/A	m3/hr Liq
18.10	Liquid Supply Rate	N/A	Deg. C
18.11	Delivery Temperature		

**B19 BLOWER**

		Centrifugal fans (3 OFF)	
19.1	Type of Blower	3000	Nm3/hr
19.2	Rated Capacity	1200	mm H2O
19.3	Delivery Pressure		

**B20 CARGO HEATER/VAPORISER (acting as heater)**

- 20.1 Type of Re-Heater
- 20.2 Number Fitted
- 20.3 Heating Medium
- 20.4 Discharge rates with sea water at 15 degrees C to raise product temperature of **Propane** from -42 degrees C to 0 degrees C
- 20.5 Discharge rates with sea water at 15 degrees C to raise product temperature of **Ammonia** from -33 degrees C to 0 degrees C

<b>Shell and tube</b>	
	1
	Sea water
	400
	260

m3/hr  
m3/hr

**B21 HYDRATE CONTROL**

- 21.1 Type of Depressant?
- 21.1.1 Freezing point temperature?
- 21.2 Quantity of Depressant Carried?
- 21.3 Location of injection?
- Name any other system used

Ethanol	
	-114,1
	200
Outlet cgo receiver	At pump discharge
N/A	

Deg. C  
Ltr.

**B22 CARGO MEASUREMENT**

**Level Gauges**

- 22.1 Are level gauges local or remote?
- 22.2 Name of manufacture
- 22.3 Type
- 22.4 Rated Accuracy
- 22.5 Certifying Authority

	Both
Henri System Holland BV	
	Float
	+/- 2
	SGS

mm.

**Temperature Gauges**

- 22.6 Name of manufacture
- 22.7 Type
- 22.8 Rated Accuracy
- 22.9 Certifying Authority

WIKA	
TR 95 Pt100	
	<0,27
	SGS

deg C

**Pressure Gauges**

- 22.10 Name of manufacture
- 22.11 Type
- 22.12 Rated Accuracy
- 22.13 Certifying Authority

Rosemount	
82234 Wessling	
	0,01
	SGS

bar

**Oxygen Analyser**

- 22.14 Name of manufacture
- 22.15 Type
- 22.15.1 What is the lowest level measurable?

Bernt, Dusseldorf, Germany	
Crowcon, Txgard-IS+	
	0

%

**Fixed Gas Analyser**

- 22.16 Name of manufacture
- 22.17 Type
- 22.18 Are Cargo tank calibration tables available?
- 22.19 Name of Measuring Company
- 22.20 Name of Certifying Authority
- 22.21 Calibration calculated to cm?
- 22.21.1 Calibration calculated to 1/2 cm?
- 22.22 Tables established to cm?
- 22.22.1 Tables established to mm?
- 22.22.2 Tables established to "other" (state what other)
- 22.23 Are trim and list corrections available?
- 22.24 Are temperature corrections available?
- 22.25 Are float gauge tape corrections available?

Autronica	
Flammable analyser	OGS 3,11/16
	YES/NO
	SGS
	LRS
	YES/NO
	YES/NO
	YES/NO
	YES/NO
	YES/NO
	YES/NO
	YES/NO
	YES/NO

**B23 CARGO SAMPLING**

- 23.1 May cargo samples be obtained from the levels; top, middle and bottom in all cargo tanks?

YES
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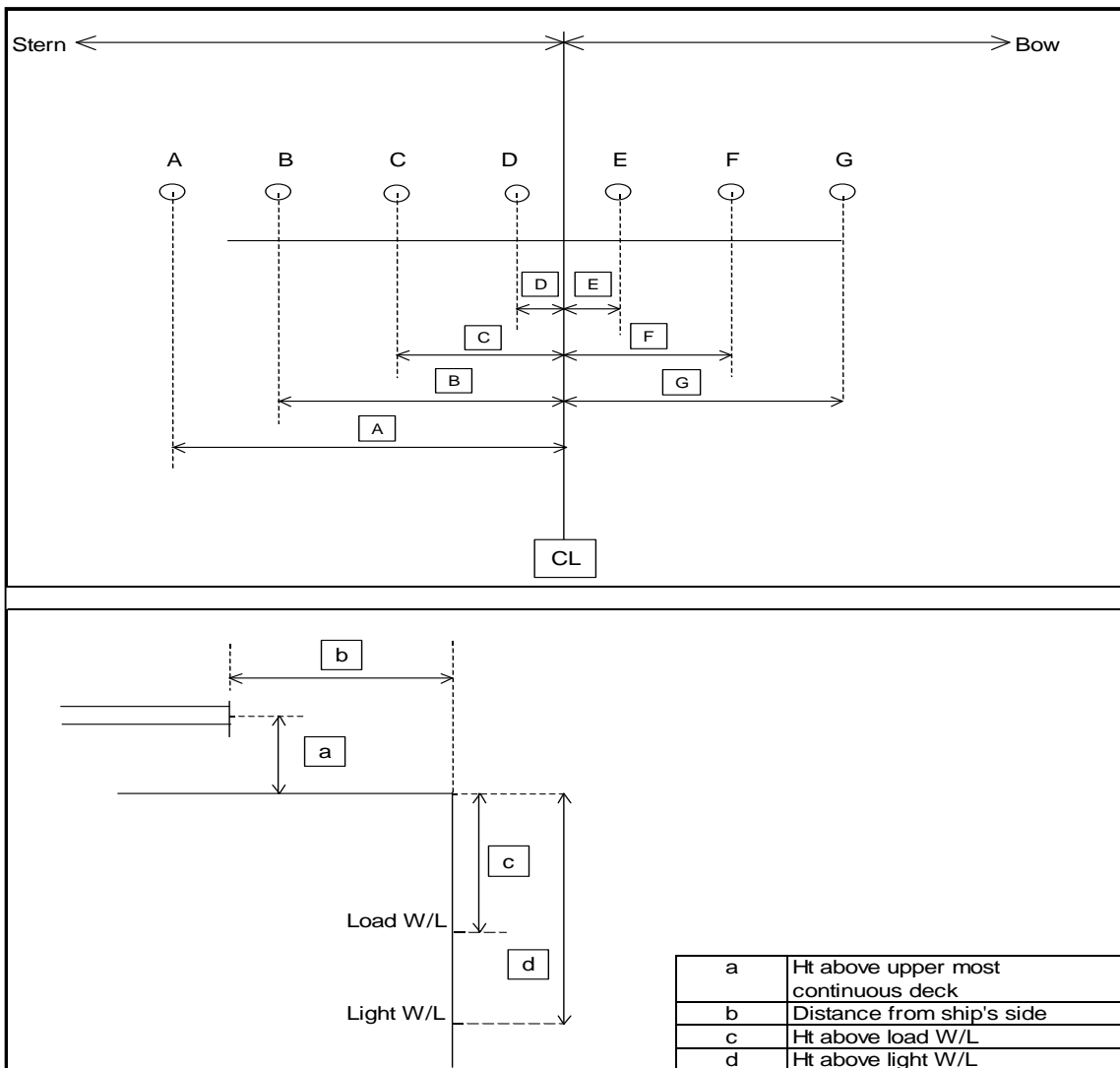
If no, - the arrangement for sampling is limited to:


23.2	Can samples be drawn from tank vapour outlet?	YES
	Can samples be drawn from manifold liquid line?	YES
	Can samples be drawn from manifold vapour line?	YES
	Can samples be drawn from pump discharge line?	YES
23.3	State sample connection type	BALL VALVE NPT(F)
	Size of sample connection	1/2" BSPP

**B24 CARGO MANIFOLD**

TBA

Manifold arrangement diagram



Center of manifold to bow	69,62	M.
Center of manifold to stern	77,44	M.
Dimension A	4700	mm.
Dimension B	3950	mm.
Dimension C	1950	mm.
Dimension D	650	mm.
Dimension E	650	mm.
Dimension F	1950	mm.
Dimension G	2700	mm.
Dimension H	3950	mm.
Height a	2850	mm.
Distance b	2004	mm.
Height c	3411	mm.

Height d	9125	mm.
Pipe Flange A - duty	Fuel oil (D.O.)	
Pipe Flange A - rating	3,3	bar
Pipe Flange A - size	100A	mm.
Pipe Flange A raised or flat face	Raised	
Pipe Flange B - duty	Fuel oil	
Pipe Flange B - rating	3,3	bar
Pipe Flange B - size	150A	mm.
Pipe Flange B raised or flat face	Raised	
Pipe Flange C - duty	Liquid System II	
Pipe Flange C - rating	30	bar
Pipe Flange C - size	10"	
Pipe Flange C raised or flat face	Raised	
Pipe Flange D - duty	Vapour System II	
Pipe Flange D - rating	18,6	bar
Pipe Flange D - size	6"	
Pipe Flange D raised or flat face	Raised	
Pipe Flange E - duty	Vapour System I	
Pipe Flange E - rating	18,6	bar
Pipe Flange E - size	4"	
Pipe Flange E raised or flat face	Raised face	
Pipe Flange F - duty	Liquid System I	
Pipe Flange F - rating	30	bar
Pipe Flange F - size	8"	
Pipe Flange F raised or flat face	Raised face	
Pipe Flange G - duty	Nitrogen	
Pipe Flange G - rating	6	bar
Pipe Flange G - size	3"	mm.
Pipe Flange G raised or flat face	Raised face	
Pipe Flange H - duty	Fuel oil	
Pipe Flange H - rating	3,3	bar
Pipe Flange H - size	150A	mm.
Pipe Flange H raised or flat face	Raised face	
Height above uppermost continuous deck	2850	mm.
Distance from ship side	2517	mm.
Height above load waterline	6261	mm.
Height above light waterline	11975	mm.

**Manifold Arrangement Located on Top of Compressor**

Distance from rail of compressor room/platform to presentation flanges	N/A	mm.
Distance from deck of compressor room/platform/try to centre of manifold	N/A	mm.

**B25 CARGO MANIFOLD REDUCERS**

25.1	Number of ANSI Class 300 reducers carried onboard	14	
	Flange rating of ANSI Class 300 reducer	30	bar
	Size of ANSI Class 300 reducer	Var	mm.
	Length of ANSI Class 300 reducer	500	mm.
25.2	Number of ANSI Class 300 to Class 150 reducers carried onboard	14	
	Flange rating of ANSI Class 300 to Class 150 reducer	18,6	bar
	Size of ANSI Class 300 to Class 150 reducer	Var	mm.
	Length of ANSI Class 300 to Class 150 reducer	500	mm.
25.3	Number of ANSI Class 150 reducers carried onboard	4 (FO/DO)	
	Flange rating of Class 150 reducer	18,6	bar
	Size of ANSI Class 150 reducer	Var	mm.
	Length of ANSI Class 150 reducer	500	mm.

**B26 CONNECTIONS TO SHORE FOR ESD AND COMMUNICATIONS SYSTEMS**

26.1	Is ESD connection to shore available?	YES
	If yes, is the system pneumatic?	NO
	If yes, is the system electrical?	YES
	If yes, is the system fiber optic?	NO

26.2	What is the type of connection used?	Pendant	
26.3	Are ESD hoses or cables available on board?	YES	
	If yes, length of pneumatic	0	mm.
	If yes, length of electrical	30	m
	If yes, length of fiber optic	0	mm.
26.4	Is there a connection available for a telephone line?	NO	
26.5	Are ESD connections available on both sides of vessel?	YES	
	Are ESD Fusible plugs fitted at tank domes?	YES	
	Are ESD Fusible plugs fitted at manifolds?	YES	
	Is the link compatible with the SIGTTO guidelines?	YES	
	Type of manifold valve	Actuated Butterfly	
	Closing time in seconds	28	secs
	Is closing time adjustable?	YES	
	Is Independent high level shut down system fitted(overflow control)?	YES	
	If yes, does the independent high level shutdown system also switch off running cargo pumps?	YES	
	Shut down level %	98	%

**B27 MANIFOLD DERRICK/CRANE**

27.1	Is manifold derrick provided	NO	
27.2	Is manifold crane provided	YES	
27.3	Is lifting equipment same for port and starboard?	Yes	
	If no, then stipulate details	-	
27.4	State SWL at maximum outreach	5	Tonnes
27.4.1	Maximum outreach of lifting equipment	7.7	Metres

**B28 STORES DERRICK/CRANE**

28.1	State location	Accommodation AFT STB'D sides	
	SWL	4	Tonnes

**B29 SISTER VESSEL(S)**

29.1	Name of vessel	Othoni
		Astipalea
		Paros