Wilhelmsen Ships Service

Ships Service Report

Date	Order No.	Vessel Type	Vessel Name	IMO Number	Customer name
30-06-2016		BULK	NENITA	9304289	SPRING MARINE

Chief Engineer	WSS Service Engineer	Place of Service
[redacted]	[redacted]	SINGAPORE - AESPA

ONBOARD LOG REVIEW							
From		To		Waterproof in use	☐ Yes ☐ No	Other test logs	☑ Spreadsheet ☐ Logbook
Comment							

BOILER WATER SYSTEMS

Equipment Manufacturer	MIURA			Boiler Type	GIC						
Drum press [bar]	7	Steaming rate [kg/hr]		Boiler water volume [ton]					Makeup quality		☑ Distilled ☐ Mixed ☐ Shore
Hotwell Temperature [°C]	78-82	Hotwell pH		Deareator vent to atmosphere ☐ Yes ☐ No		Makeup volume [m³/day]					
System Name	P.Alkalinity	Chloride	pH	Conductivity /TDS	Phosphate	DEHA	Sulphite	Hydrazine			
BLR	150	200	10.5								
Control Limits	150-300	200 MAX	9.5-11.5								
Condensate Water		<20	7.4			0.08					
Control Limits		20 MAX	8.3-9.5			0.08-0.3					
Blowdown ok:	☐ Yes ☐ No				Sample Appearance:		☐ Clear ☐ Cloudy ☐ Coloured				
Products in use and dosing point:		AUTOTREAT & OSP									
Dosing method	☑ Manual ☐ Dosing system										

COOLING WATER SYSTEMS

System Name	Capacity [m3]	Make up [ltr/day]	Engine Manufacturer	kW	Dosing Method (Man. or DS)	Product in Use	Nitrite / Sodium Nitrite (ppm)	Chloride (ppm)	pH	P Alkalinity (ppm)	Cooltreat AL content %
M/E			MITSUI		☑M ☐DS	ROCOR	900	40	8.3		
			MAN B	KW	☐M ☐DS	MB					
			7S50MC-C		☐M ☐DS						
				9230	☐M ☐DS						
					☐M ☐DS						
					☐M ☐DS						
					☐M ☐DS						
Control Limits							1000-2400	50 MAX	8.3-9.5		

SEAWATER SYSTEM	
Pump Capacity [ton/hr]	
Product in use	
Dosing method	☐ Manual ☐ Dosing System
Consumption [ltr /day]	
Comments	

EVAPORATOR SYSTEM	
Capacity [ton/day]	12
Product in use	VAPTREAT
Dosing method	☐ Manual ☑ Dosing System
Consumption [ltr/day]	0.3
Comments	

M.V. NENITA IMO 9304289 MAJURO

[redacted]
Chief Engineer

(1)

[redacted]
Service Engineer Wilhelmsen Ships Service

Part No. 806001

Wilhelmsen Ships Service

Ships Service Report

Vessel Name:	NEHITA	Company Name:	9304289
Date:	30-06-16	IMO Number	SPRING MARINE

COMMENTS

BOILER-

All readings within recommended limit. Chloride level has reached max limit. Recommend more blowdown.

Recommend to keep chloride as low as possible

CONDENSATE-

Chloride & DEHA within recommended limit. PH slightly below recommended limit. Need to dose more Autotreat & OSP to boost Condensate PH.

Recommend VDL acquire dosing pump for the boiler water chemicals treatment.

Oxygen Scavenger Plus (OSP) need to maintain daily dosage.

M/E Cooling

Nitrite slightly below recommended limit, Chloride & PH within recommended limit. Need to dose more Rocor NB liquid, to boost Nitrite reserve to 1000-2400ppm.

Test kit 315- Alkalinity : 03/2017 313-DEHA Test kit: 02/2017
Chloride : 12/2016 DEHA Solution: 05/2016

Elog checked. Used chemicals ROB.

[redacted]
Chief Engineer

M.T. NEHITA IMO 9304289 MAJURO

[redacted]
Service Engineer Wilhelmsen Ships Service

Part No. 806001

(2)

Wilhelmsen Ships Service

Ships Service Report

Vessel Name:	HENITA	Company Name:	SPRING MARINE
Date:	30-06-16	IMO Number	9304289

COMMENTS

Explain to 3IE on the respective parameters to be maintain for P.Alkalinity, chloride, PH, DEHA & Nitrite.

Explain about the dosing rates for Acrotreat, OSP, & Rocor NB.

Highlight about the difference between Rocor NB & Diesilguard NB.

SPRING MARINE just took over this VSL in May 2016.

M.V. NENITA IMO 9304289 MAJURO

[redacted]
Chief Engi...

[redacted]
Service Engineer Wilhelmsen Ships Service

Part No. 806001

UNITOR
CHEMICALS
P.O. BOX 49
3163 Borgheim, Norway

Cooling Water Treatment Programme
Shipboard Log Pad

SHIP M/V NENITA

OWNER SPRING MARINE

IMO / LLOYDS NO. 9 3 0 4 2 8 9

MAIN ENGINE MANUFACTURER TYPE S50 MC - C

Make up ☐ Shore ☐ Distilled ☐ Mixed

YEAR 2016 Month

J	F	M	A	M	J	J	A	S	O	N	D
										X	

PRODUCT ☐ Dieselguard NB ☒ Rocor NB Liquid

Jackets ☒ HT ☐

Pistons ☐ LT ☐

CAPACITY tons

Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
>/= 2700								
2520								
2340								
Nitrite as ppm NO_2 2160								
1980								
Normal level 1800								
1200-2400 1620								
ppm 1440		X		X				
1260					X			X
1080								
900								
</= 720								
Chloride >/= 100								
ppm Cl 80								
60								
Normal level 40								
max 50 ppm 20		X		X	X			X
0								
pH								
Diesel guard NB kg								
Rocor NB liquid ltr								
Make up ltr								

Fuel valves

CAPACITY 7 tons

Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
>/= 2700								

CAPACITY tons

Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
>/= 2700								
2520								
2340								
Nitrite as ppm NO_2 2160								
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ppm 1440								
1260								
1080								
900								
</= 720								
Chloride >/= 100								
ppm Cl 80								
60								
Normal level 40								
max 50 ppm 20								
0								
pH								
Diesel guard NB kg								
Rocor NB liquid ltr								
Make up ltr								

CAPACITY tons

Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
>/= 2700								
2520								
2340								
Nitrite as ppm NO_2 2160								
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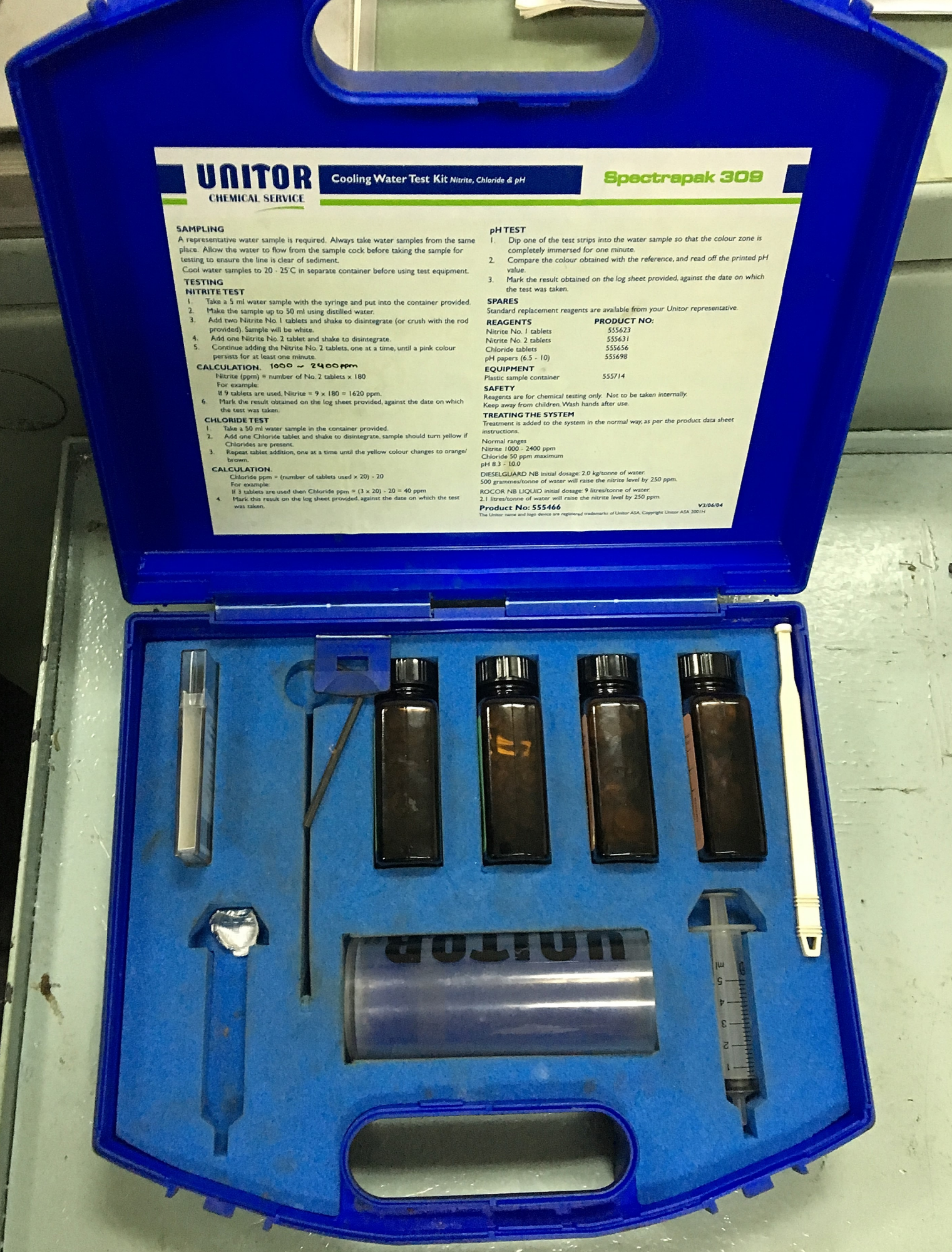
ppm 1440								
1260								
1080								
900								
</= 720								
Chloride >/= 100								
ppm Cl 80								
60								
Normal level 40								
max 50 ppm 20								
0								
pH								
Diesel guard NB kg								
Rocor NB liquid ltr								
Make up ltr								

Comments:


UNITOR
CHEMICAL SERVICE
Cooling Water Test Kit Nitrite, Chloride & pH
Spectrapak 309
SAMPLING
A representative water sample is required. Always take water samples from the same place. Allow the water to flow from the sample cock before taking the sample for testing to ensure the line is clear of sediment.
Cool water samples to 20 - 25°C in separate container before using test equipment.
TESTING
NITRITE TEST
1. Take a 5 ml water sample with the syringe and put into the container provided.
2. Make the sample up to 50 ml using distilled water.
3. Add two Nitrite No. 1 tablets and shake to disintegrate (or crush with the rod provided). Sample will be white.
4. Add one Nitrite No. 2 tablet and shake to disintegrate.
5. Continue adding the Nitrite No. 2 tablets, one at a time, until a pink colour persists for at least one minute.
CALCULATION. 1000 ~ 2400ppm
Nitrite (ppm) = number of No. 2 tablets x 180
For example:
If 9 tablets are used, Nitrite = 9 x 180 = 1620 ppm.
6. Mark the result obtained on the log sheet provided, against the date on which the test was taken.
CHLORIDE TEST
1. Take a 50 ml water sample in the container provided.
2. Add one Chloride tablet and shake to disintegrate, sample should turn yellow if Chlorides are present.
3. Repeat tablet addition, one at a time until the yellow colour changes to orange/brown.
CALCULATION.
Chloride ppm = (number of tablets used x 20) - 20
For example:
If 3 tablets are used then Chloride ppm = (3 x 20) - 20 = 40 ppm
4. Mark this result on the log sheet provided, against the date on which the test was taken.
pH TEST
1. Dip one of the test strips into the water sample so that the colour zone is completely immersed for one minute.
2. Compare the colour obtained with the reference, and read off the printed pH value.
3. Mark the result obtained on the log sheet provided, against the date on which the test was taken.
SPARES
Standard replacement reagents are available from your Unitor representative.
REAGENTS PRODUCT NO:
Nitrite No. 1 tablets 555623
Nitrite No. 2 tablets 555631
Chloride tablets 555656
pH papers (6.5 - 10) 555698
EQUIPMENT
Plastic sample container 555714
SAFETY
Reagents are for chemical testing only. Not to be taken internally.
Keep away from children. Wash hands after use.
TREATING THE SYSTEM
Treatment is added to the system in the normal way, as per the product data sheet instructions.
Normal ranges
Nitrite 1000 - 2400 ppm
Chloride 50 ppm maximum
pH 8.3 - 10.0
DIESELGUARD NB initial dosage: 2.0 kg/tonne of water.
500 grammes/tonne of water will raise the nitrite level by 250 ppm.
ROCOR NB LIQUID initial dosage: 9 litres/tonne of water.
2.1 litres/tonne of water will raise the nitrite level by 250 ppm.
Product No: 555466
V3/06/04
The Unitor name and logo device are registered trademarks of Unitor ASA. Copyright Unitor ASA 2001H
UNITOR
ml
5
4
3
2
1

UNITOR
CHEMICAL SERVICE

Cooling Water Test Kit *Nitrite, Chloride & pH*

Spectrapak 309

SAMPLING

A representative water sample is required. Always take water samples from the same place. Allow the water to flow from the sample cock before taking the sample for testing to ensure the line is clear of sediment.

Cool water samples to 20 - 25°C in separate container before using test equipment.

TESTING

NITRITE TEST

1. Take a 5 ml water sample with the syringe and put into the container provided.
2. Make the sample up to 50 ml using distilled water.
3. Add two Nitrite No. 1 tablets and shake to disintegrate (or crush with the rod provided). Sample will be white.
4. Add one Nitrite No. 2 tablet and shake to disintegrate.
5. Continue adding the Nitrite No. 2 tablets, one at a time, until a pink colour persists for at least one minute.

CALCULATION. 1000 ~ 2400 ppm

Nitrite (ppm) = number of No. 2 tablets x 180

For example:

If 9 tablets are used, Nitrite = 9 x 180 = 1620 ppm.

6. Mark the result obtained on the log sheet provided, against the date on which the test was taken.

CHLORIDE TEST

1. Take a 50 ml water sample in the container provided.
2. Add one Chloride tablet and shake to disintegrate, sample should turn yellow if Chlorides are present.
3. Repeat tablet addition, one at a time until the yellow colour changes to orange/ brown.

CALCULATION.

Chloride ppm = (number of tablets used x 20) - 20

For example:

If 3 tablets are used then Chloride ppm = (3 x 20) - 20 = 40 ppm

4. Mark this result on the log sheet provided, against the date on which the test was taken.

pH TEST

1. Dip one of the test strips into the water sample so that the colour zone is completely immersed for one minute.
2. Compare the colour obtained with the reference, and read off the printed pH value.
3. Mark the result obtained on the log sheet provided, against the date on which the test was taken.

SPARES

Standard replacement reagents are available from your Unitor representative.

REAGENTS	PRODUCT NO:
Nitrite No. 1 tablets	555623
Nitrite No. 2 tablets	555631
Chloride tablets	555656
pH papers (6.5 - 10)	555698

EQUIPMENT	
Plastic sample container	555714

SAFETY

Reagents are for chemical testing only. Not to be taken internally.
Keep away from children. Wash hands after use.

TREATING THE SYSTEM

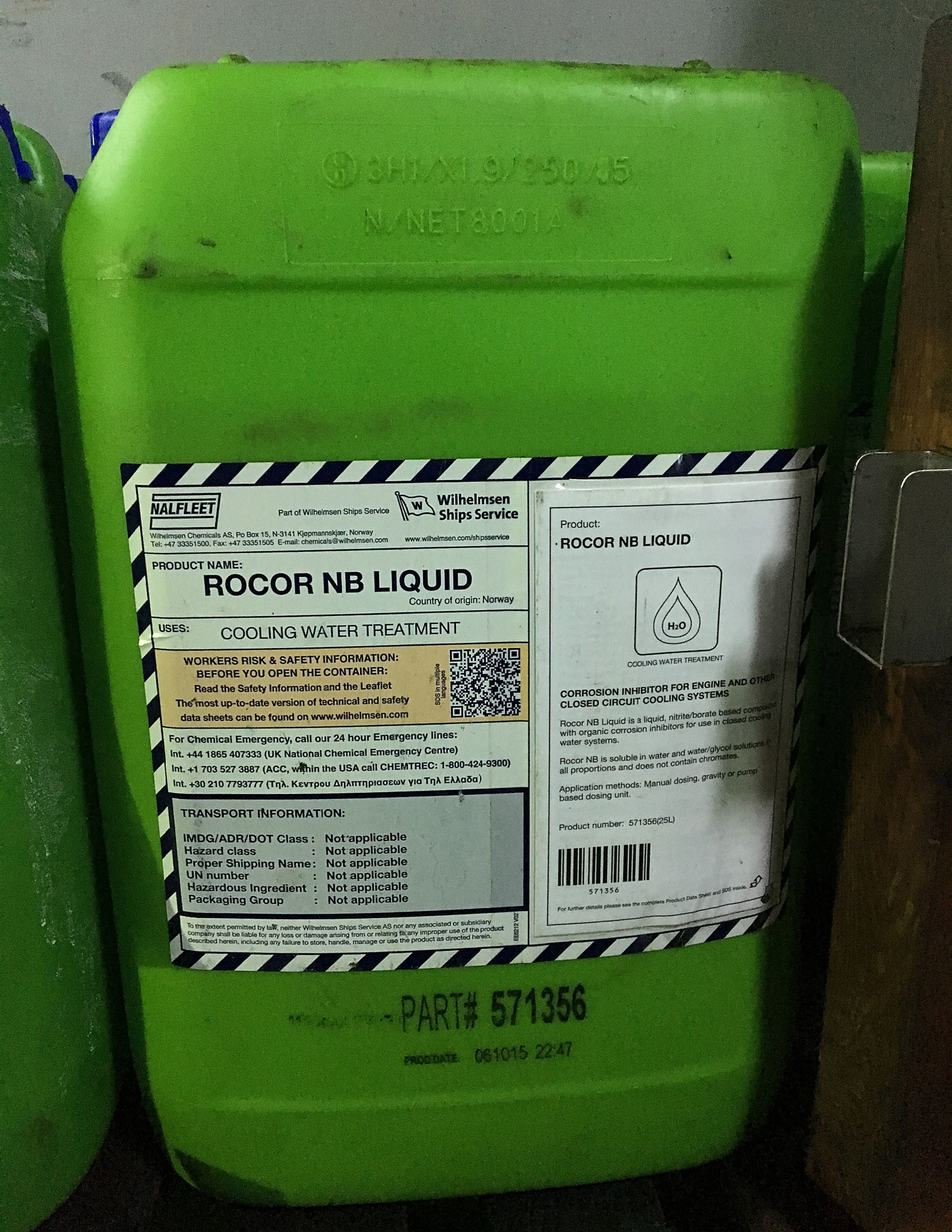
Treatment is added to the system in the normal way, as per the product data sheet instructions.

Normal ranges
Nitrite 1000 - 2400 ppm
Chloride 50 ppm maximum
pH 8.3 - 10.0

DIESELGUARD NB initial dosage: 2.0 kg/tonne of water.
500 grammes/tonne of water will raise the nitrite level by 250 ppm.

ROCOR NB LIQUID initial dosage: 9 litres/tonne of water.
2.1 litres/tonne of water will raise the nitrite level by 250 ppm.

Product No: 555466 V3/06/04


3H1/X1.9/250/05
N/NET8001A
NALFLEET
Part of Wilhelmsen Ships Service
Wilhelmsen Ships Service
Wilhelmsen Chemicals AS, Po Box 15, N-3141 Kjøpmannskjær, Norway
Tel: +47 33351500, Fax: +47 33351505 E-mail: chemicals@wilhelmsen.com
www.wilhelmsen.com/shipsservice
PRODUCT NAME:
ROCOR NB LIQUID
Country of origin: Norway
USES:
COOLING WATER TREATMENT
WORKERS RISK & SAFETY INFORMATION:
BEFORE YOU OPEN THE CONTAINER:
Read the Safety Information and the Leaflet
The most up-to-date version of technical and safety data sheets can be found on www.wilhelmsen.com
SDS in multiple languages
For Chemical Emergency, call our 24 hour Emergency lines:
Int. +44 1865 407333 (UK National Chemical Emergency Centre)
Int. +1 703 527 3887 (ACC, within the USA call CHEMTREC: 1-800-424-9300)
Int. +30 210 7793777 (Τηλ. Κεντρου Δηλιπτηριασεων για Τηλ Ελλαδα)
TRANSPORT INFORMATION:
IMDG/ADR/DOT Class : Not applicable
Hazard class : Not applicable
Proper Shipping Name : Not applicable
UN number : Not applicable
Hazardous Ingredient : Not applicable
Packaging Group : Not applicable
To the extent permitted by law, neither Wilhelmsen Ships Service AS nor any associated or subsidiary company shall be liable for any loss or damage arising from or relating to any improper use of the product described herein, including any failure to store, handle, manage or use the product as directed herein.
EE6212 V02
Product:
ROCOR NB LIQUID
H2O
COOLING WATER TREATMENT
CORROSION INHIBITOR FOR ENGINE AND OTHER CLOSED CIRCUIT COOLING SYSTEMS
Rocor NB Liquid is a liquid, nitrite/borate based compound with organic corrosion inhibitors for use in closed cooling water systems.
Rocor NB is soluble in water and water/glycol solutions in all proportions and does not contain chromates.
Application methods: Manual dosing, gravity or pump based dosing unit.
Product number: 571356(25L)
571356
For further details please see the complete Product Data Sheet and SDS inside.
PART# 571356
PRODDATE 061015 22:47

Rocor NB Liquid™ 25LTR

653 571356

NALFLEET™ Rocor NB Liquid is a highly effective corrosion inhibitor for the common ferrous and non-ferrous metals found in engine cooling water systems.

Features

- Liquid product, easy to use
- By forming an oxide film on the metal surfaces electrolytic corrosion is prevented
- Effective against cavitation and erosion
- Compatible with hoses, gaskets and seals

Benefits

- Approved by major diesel engine manufacturers
- Simple control test

The product can be used for corrosion inhibition in many types of closed recirculation systems such as:

- Diesel engine cooling water systems
- Compressor cooling water systems
- Centralised cooling systems
- Hot water heating systems
- Auxiliary machinery cooling systems

Ordering information

Product number	Product name
571356	ROCOR NB LIQUID 25 LTR

Accessories

Test Kit for Nitrite, Chloride and pH.

Product Number	Product name
739466	SPECTRAPAK 309

Approvals

- Approved by all major engine manufacturers

Directions for use

NALFLEET™ Rocor NB Liquid is a highly effective corrosion inhibitor for the common ferrous and non-ferrous metals in cooling water systems. The stable oxide film that is formed prevents corrosion caused by electrolytic action between dissimilar metals used in the system. NALFLEET™ Rocor NB Liquid has been field tested and found to have no detrimental effects on non metallic substances such as seals, glands, packing, hoses, gaskets etc., normally used in these systems. The compound is alkaline and so will suppress acid corrosion, which would otherwise result in corrosion damage such as pitting. However, the

alkalinity control is such that even if the product is accidentally overdosed, the pH of the water will remain within limits. The metals which would be affected by extremes of alkalinity or acidity are protected. In cases where systems are contaminated with oil and/or scale they should be cleaned before starting to apply NALFLEET™ Rocor NB Liquid. There are suitable WSS products to carry out the cleaning. Degreasing should be carried out using UNITOR™ Seaclean Plus and descaling by using UNITOR™ Descalex. Refer to Water Treatment handbook. The use of antifreeze is sometimes required if the vessel is to be laid up in cold areas and so NALFLEET™ Rocor NB Liquid can be used in conjunction with antifreeze products. If the system contains zinc galvanized parts, it is advisory to clean the system with Descalex prior to commencing the treatment.

NALFLEET™ Rocor NB is not suitable for use in cooling systems containing aluminium components.

Dosing method

NALFLEET™ Rocor NB Liquid should be dosed to a suitable point in the system. If the expansion tank is used then adequate circulation must be assured.

Sampling and testing

The Spectrapak Test Kit provides the necessary equipment to carry out the control tests. Obtain a representative sample of the cooling water. Carry out the tests immediately after sampling (following the instructions given in the Test Kit) and log the results in Waterproof. The results should be sent to WSS as stated in the Waterproof instructions. Use the dosage chart overleaf to adjust treatment to obtain the optimum level. It is important that testing is carried out at least once per week, to ensure levels of treatment are correct.

Dosage and Control

Initial dosage for an untreated system is 9 litres of NALFLEET™ Rocor NB Liquid/1000 litres of untreated distilled water. This will bring the treatment up to the minimum level of 1000 ppm nitrite. The dosage chart given below is for convenience in calculating the amount of NALFLEET™ Rocor NB Liquid required to bring the treatment level to the suitable point between the minimum and maximum - this being 1440 ppm nitrite.

Normal nitrite limits: 1000-2400 ppm nitrite (NO2)

Nitrite (as PPM NO2)	0	180	360	540	720	900	1080	1260	1440 - 2400
NALFLEET™ Rocor NB Liquid/1000 ltr	13,0	11,3	9,7	8,1	6,5	4,9	3,3	1,7	0

N.B.Buffering agents in NALFLEET™ Rocor NB Liquid maintain pH values within suitable limits when the product is dosed as recommended. Normal pH should be maintained between 8.3 and 10 by the treatment. The engine manufacturer's recommendations for water quality should always be complied with.

Chloride levels should always be as low as possible. Most engine manufacturers recommend a maximum of 50 ppm chlorides. For this reason, Wilhelmsen Ships Service recommends the use of distilled water as make-up.

Further Technical Data

Form	Liquid
Appearance	Red
Density	1,1
pH	9
Non Compatible	Avoid contact of neat product with zinc and aluminium.

UNITOR ®
CHEMICALS
P.O. BOX 49
3163 Borgheim, Norway

Cooling Water Treatment Programme
Shipboard Log Pad

SHIP M/V NENITA **OWNER** SPRING MARINE **IMO / LLOYDS NO.** 9304289

MAIN ENGINE MANUFACTURER **TYPE** S50 MC - C

Make up ☐ Shore ☐ Distilled ☐ Mixed

YEAR:2017 Month J F M A M J J A S O N D — X

PRODUCT ☐ Dieselguard NB ☒ Rocor NB Liquid

Jackets ☒ HT ☐ Pistons ☐ LT ☐

CAPACITY tons	Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
	>/= 2700								
	2520								
	2340								
Nitrite as ppm NO_2	2160								
	1980								
Normal level	1800								
1200-2400	1620								
ppm	1440								
	1260								X
	1080								
	900								
	</= 720								
Chloride	>/= 100								
ppm Cl	80								
	60								
Normal level	40								
max 50 ppm	20								X
	0								
	pH								
Diesel guard NB kg									
Rocor NB liquid ltr									5
Make up ltr									
Fuel valves									

CAPACITY 7 tons	Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
	>/= 2700								

CAPACITY tons	Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
	>/= 2700								
	2520								
	2340								
Nitrite as ppm NO_2	2160								
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	1080								
	900								
	</= 720								
Chloride	>/= 100								
ppm Cl	80								
	60								
Normal level	40								
max 50 ppm	20								
	0								
	pH								
Diesel guard NB kg									
Rocor NB liquid ltr									
Make up ltr									

CAPACITY tons	Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
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	1260								
	1080								
	900								
	</= 720								
Chloride	>/= 100								
ppm Cl	80								
	60								
Normal level	40								
max 50 ppm	20								
	0								
	pH								
Diesel guard NB kg									
Rocor NB liquid ltr									
Make up ltr									

Comments:

CLEANED & RENEWED WATER OF EXPANSION TK. JAN.2017

M.V. NENITA

[redacted]

UNITOR®
CHEMICALS
P.O. BOX 49
3163 Borgheim, Norway

Cooling Water Treatment Programme
Shipboard Log Pad

SHIP M/V NENITA

OWNER SPRING MARINE

IMO / LLOYDS NO. 9 3 0 4 2 8 9

MAIN ENGINE MANUFACTURER TYPE S50 MC - C

Make up ☐ Shore ☒ Distilled ☐ Mixed

YEAR:2017 Month

J	F	M	A	M	J	J	A	S	O	N	D
	X										

PRODUCT ☐ Dieselguard NB ☒ Rocor NB Liquid

Jackets ☒ HT ☐ Pistons ☐ LT ☐

CAPACITY tons

Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
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2520								
2340								
Nitrite as ppm NO_2 2160								
1980								
Normal level 1800								
1200-2400 1620								
ppm 1440								
1260								
1080		X		X		X		X
900								
</= 720								
Chloride >/= 100								
ppm Cl 80								
60								
Normal level 40				X				X
max 50 ppm 20		X				X		
0								
pH								
Diesel guard NB kg								
Rocor NB liquid ltr		5ltr		6ltr		4ltr		5ltr
Make up ltr								
Fuel valves								

CAPACITY 7 tons

Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
>/= 2700								

CAPACITY tons

Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
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2520								
2340								
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pH								
Diesel guard NB kg								
Rocor NB liquid ltr								
Make up ltr								

CAPACITY tons

Date	1-3	4-7	8-11	12-15	16-19	20-23	24-27	28-31
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Chloride >/= 100								
ppm Cl 80								
60								
Normal level 40								
max 50 ppm 20								
0								
pH								
Diesel guard NB kg								
Rocor NB liquid ltr								
Make up ltr								

Comments:

M.V. NENITA

[redacted]

Ships Service

Ships Service Report

BOILER

Date	Order No	Vessel Type	Vessel Name	IMO Number	Customer name
25/4/17			NENITA	9304289	SPRING MARITIME

Chief Engineer	WSS Service Engineer	Place of Service
	[redacted]	AEBA SINGAPORE

ONBOARD LOG REVIEW

From	To	Waterproof case	☐ Yes ☐ No	Other test logs	☐ Spreadsheet ☐ Logbook	C/O E-LOGS.

Comment

BOILER WATER SYSTEMS

Equipment Manufacturer	MIURA	Boiler Type	CK		
Drum press [bar]	7.0	Steaming rate [kg/hr]	Boiler water volume [ton]	6.5	
Hotwell Temperature [°C]	80	Hotwell pH	Deaerator vent to atmosphere ☐ Yes ☐ No	Makeup volume [m³/day]	Makeup quality ☑ Distilled ☐ Mixed ☐ Shore

System Name	P Alkalinity	Chloride	pH	Conductivity /TDS	Phosphate	DEHA	Sulphite	Hydrazine			
AUX BLR	240	80	11.0								
Control Limits											
Condensate Water		5	8.5			0.08					
Control Limits											
Blowdown ok	☑ Yes ☐ No				Sample Appearance:		☑ Clear ☐ Cloudy ☐ Coloured				

Products in use and dosing point: AUTOTREAT + DSP

Dosing method: ☐ Manual ☐ Dosing system

COOLING WATER SYSTEMS

System Name	Capacity [m3]	Make up [ltr/day]	Engine Manufacturer	kW	Dosing Method (Man. or DS)	Product in Use	Nitrite / Sodium Nitrite (ppm)	Chloride (ppm)	pH	P Alkalinity (ppm)	Cooltreat AL content %
M/E JKT			MITSUI	9230	☑ M ☐ DS	RECOR NB	1260	40	9.0		
			MAN		☐ M ☐ DS						
			B&W		☐ M ☐ DS						
			7S50MC-C		☐ M ☐ DS						
					☐ M ☐ DS						
					☐ M ☐ DS						
					☐ M ☐ DS						
Control Limits											

SEAWATER SYSTEM

Pump Capacity [ton/hr]	
Product in use	
Dosing method	☐ Manual ☐ Dosing System
Consumption [ltr./day]	
Comments	

EVAPORATOR SYSTEM

Capacity [ton/day]	12
Product in use	VAPTREAT
Dosing method	☐ Manual ☐ Dosing System
Consumption [ltr/day]	
Comments	

M.V. NENITA IMO [illegible]

[redacted]
Chief Engineer

[redacted]
Service Engineer Wilhelmsen Ships Service

Part No. 806001

Wilhelmsen Ships Service

Ships Service Report

Vessel Name:	NENITA	Company Name:	SPRING MARITIME
Date:	25/4/17	IMO Number	9304289

COMMENTS

BOILER :
TEST DONE ONBOARD, ALL READINGS ARE WITHIN LIMITS.

M/E JKT :
NITRITES AND CHLORIDES ARE WITHIN LIMITS.

TEST KITS :
CHECK OK, WITH SPARE TABLETS & REAGENTS

CHEMICALS :
HAVE SUFFICIENT ONBOARD.

VSL USING COMPANY E-LOGS.

COOLING WATER NITRITES BEST TO MAINTAIN 1440ppm - 2400ppm FOR BETTER PROTECTION.

M.V. NENITA IMO 9304289 MAJURO

[redacted]

Chief Engineer

[redacted]

Service Engineer Wilhelmsen Ships Service

Part No. 806001

LABORATORY TEST REPORT

Sample date	2017-11-10	**Vessel name**	Nenita
Arrival date	2017-11-28	**IMO number**	9304289
Report issue date	2017-11-29	**Order nmbr**	G10049107
WSS Representative	[redacted]	**Sample name**	Brine
Product in use	Dieselguard NB	**Sample#**	C170371
Sample info	See attached		
	Make up: Mixed		

Analysis	Method	Unit	Guidelines	C170371
Appearance	II6.22			Clear
pH	II6.501		8 - 11	8.7
Conductivity	II6.584	µS/cm		3230
Chloride [Cl]	II6.522	mg/L	0 - 40	38
Nitrite [NO2]	II6.522	mg/L	1000 - 2400	1440
Nitrate [NO3]	II6.522	mg/L	0 - 200	<1
Sulphate [SO4]	II6.522	mg/L	0 - 100	30
Copper [Cu]	II6.526	mg/L	0 - 1	<0.1
Iron [Fe]	II6.526	mg/L	0 - 1	<0.1
Aluminum [Al]	II6.526	mg/L		<0.1
Zinc [Zn]	II6.526	mg/L		<0.1
Silicon [Si]	II6.526	mg/L		4.7
Calcium [Ca]	II6.526	mg/L		31
Magnesium [Mg]	II6.526	mg/L		7.1
Hardness	calc.	°dH	0 - 10	6.0
Hardness [CaCO3]	Calc.	mg/L		107
Bacteria	II6.507			Negative

Comments
This sample was sent in as brine sample, but analysis indicate that this is cooling water sample and will therefore be reported as that.
System within recommended guidelines.

For Wilhelmsen Chemicals,

Evaluated by
[redacted]
Product Engineer

Approved by
[redacted]
Technical Manager

LABORATORY TEST REPORT

Sample date	2017-11-10	**Vessel name**	Nenita
Arrival date	2017-11-20	**IMO number**	9304289
Report issue date	2017-11-29	**Order nmbr**	G10049107
WSS Representative	[redacted]	**Sample name**	Cooling water
Product in use	Dieselguard NB	**Sample#**	C170359
Sample info	SIF: See attached Make up: mixed		

Analysis	Method	Unit	Guidelines	C170359
Appearance	II6.22			Clear
pH	II6.501		8 - 11	8.7
Conductivity	II6.584	µS/cm		3290
Chloride [Cl]	II6.522	mg/L	0 - 40	35
Nitrite [NO2]	II6.522	mg/L	1000 - 2400	1360
Nitrate [NO3]	II6.522	mg/L	0 - 200	<1
Sulphate [SO4]	II6.522	mg/L	0 - 100	26
Copper [Cu]	II6.526	mg/L	0 - 1	<0.1
Iron [Fe]	II6.526	mg/L	0 - 1	<0.1
Aluminum [Al]	II6.526	mg/L		<0.1
Zinc [Zn]	II6.526	mg/L		<0.1
Silicon [Si]	II6.526	mg/L		3.9
Calcium [Ca]	II6.526	mg/L		39
Magnesium [Mg]	II6.526	mg/L		8.3
Hardness	calc.	°dH	0 - 10	7.3
Hardness [CaCO3]	Calc.	mg/L		131
Bacteria	II6.507			Negative

Comments
System within recommended guidelines.

For Wilhelmsen Chemicals,

Evaluated by
[redacted]
Product Engineer

Approved by
[redacted]
Technical Manager