



**MARINE
CARE**

COOLING WATER TESTKIT

Nitrite, Chloride and pH Test

MARINE CARE BV
Oude Maasweg 35
Port # 4005
3197 KJ Rotterdam (Botlek)
T. +31 (0)10 2950342
F. +31 (0)10 2950345
E. supply@marinecare.nl
W. www.marinecare.nl

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Type : Instruction Manual

HEALTH & SAFETY

Some reagents required for tests shown in this booklet are classed as hazardous and as such, a minimum protection of gloves (rubber or plastic) and safety goggles/spectacles or facemask **MUST BE WORN**.

In addition please note and observe the Risk and Safety phrases on each reagent container and follow handling guidelines as instructed.

GENERAL NOTES

- ⇒ Avoid contact with skin or eyes
- ⇒ In case of contact with skin or eyes rinse immediately with plenty of running tap water, and seek medical attention
- ⇒ Seek attention if irritation persists
- ⇒ In case of ingestion, wash the mouth out thoroughly with water, try to vomit and seek medical attention

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Chloride Test

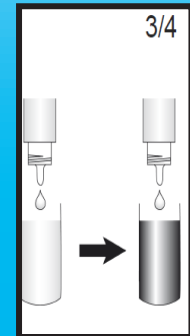
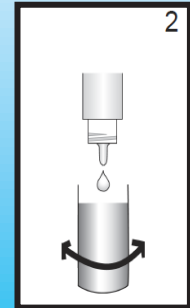
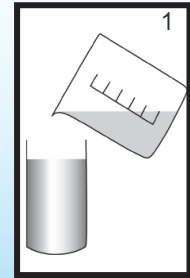
1. Take 20 ml of cold coolingwater sample with the 20 ml syringe. Spray the 20 ml in the clean test jar.



2. Add 12 drops of Reagent BC1. The sample will turn orange / yellow.



3. Add drop by drop Reagent BC2, until a **turbid** dark orange to brown colour appears. Count the numbers of drops used.
4. Each drop is equivalent to 20 mg/l or ppm Chlorides



Drops of BC2	Chloride as
1	20
2	40
3	60
4	80
5	100
6	120
7	140
8	160
9	180
10	200
11	220
12	240
13	260
14	280
15	300
16	320
17	340
18	360
19	380
20	400

Notes:

Maximum Chloride levels:

- ⇒ LT systems : 100 mg/l
- ⇒ HT systems : 50 mg/l

Above 50 mg/l Chloride concentration; raise the nitrite level 100 ppm for every 10 mg/l chloride.

In case the chloride level is too high, reduce the amount of chlorides by partly refreshing the cooling-water with demineralized or evaporated water. After refreshing, repeat the Nitrite test.

- ⇒ 1 mg/l is 1 ppm

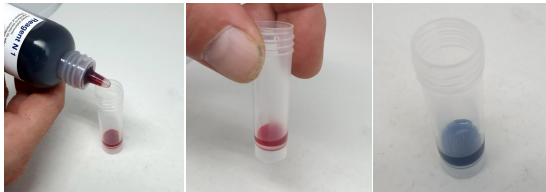
Nitrite Test

1. Take 0,5 ml of cold coolingwater sample with the 2,5 ml syringe. Spray the 0,5 ml in the clean small test tube.

2.

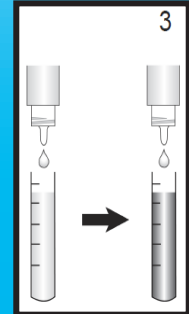
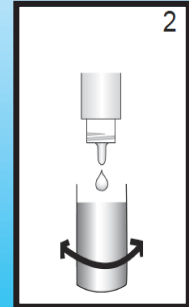
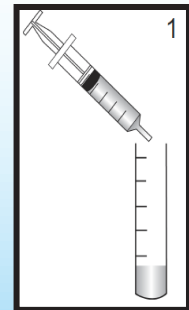


2. Add 4 drops of Reagent N1. The sample will turn orange/red.



3. Add drop by drop Reagent N2, until a blue colour appears. Count the numbers of drops used.

4. Each drop is equivalent to 200 mg/l or ppm Nitrite (NO_2)



Drops of N2	Nitrite as mg/
1	200
2	400
3	600
4	800
5	1000
6	1200
7	1400
8	1600
9	1800
10	2000
11	2200
12	2400
13	2600
14	2800
15	3000
16	3200
17	3400
18	3600
19	3800
20	4000

Engine type	Chloride as mg/l Cl ⁻	Nitrite as mg/l NO ₂ ⁻	Initial Dosing rate in l/m ³
HT Systems	< 50	1500-2500	6 - 10
LT Systems	< 50	1500-2500	6 - 10
LT Systems	50 - 100	1750-3000	7 - 12

Notes:

Maximum Chloride levels:

- ⇒ LT Systems : 100 mg/l
- ⇒ HT Systems : 50 mg/l

In case of too low Nitrite level dose Caretreat 2 Diesel. 1 liter per m³ gives 250 mg/l NO₂⁻.

In case of too high Nitrite level partly refresh the coolingwater with demineralized or evaporated water. After refreshing, repeat the Nitrite test.

Coolingwater pH Test (7,0 - 14,0)

1. Take 50 ml of cold coolingwater sample in the clean test jar.
2. Dip test strip for 1 second in the sample.
3. Shake off excess sample solution.
4. Compare with colour scale and read off the corresponding pH value.

pH value		
< 6,5	Corrosive to highly corrosive	See fault finding chart
7,0		
7,5		
8,0	Slightly corrosive	
8,5		
9,0	Non corrosive	Well treated
9,5		
10,0		
10,5	Corrosive on Copper and Aluminium	See fault finding chart
11,0		
11,5		
12,0	Corrosive on Iron, Copper and Aluminium	
12,5		
13,0		
13,5		
14,0		

Fault Finding Chart	Cause(s)	Solution(s)
Chlorides far too high	Low quality feed water	Only use demineralized or evaporated water
	Sea coolingwater leakage	Search for leakage(s)
Nitrites low	Coolingwater leakage	Add Caretreat 2 Diesel
	Coolingwater (partly) refreshed	Add Caretreat 2 Diesel
Nitrites remain low	Air intake in the system	Check coolingwater pumpseals
		Check header/expansion tank
	Exhaust gasses in the system	Check for leakages,
	Bacteria in the system	Check for slime deposits
		Add a non corrosive biocide, Caretreat Bacteria
Product drum used for other chemical	Check Nitrite level of the product or take a new product drum	

pH Coolingwater too low	Bacteria in the system	Check for slime deposits Add a non corrosive biocide, Caretreat Bacteria
	Low Caretreat 2 Diesel dosage	Check dosingpump / increase dosage
pH Coolingwater too high	High Caretreat 2 Diesel dosage	Check dosingpump / decrease dosage Refresh the system partly with demineralized or evaporated water

Partslist Coolingwater Testkit		
Description	Amount	
pH strips (100 ea.) 0,0 - 14,0	1	
or		
pH strips (100 ea.) 7,0 - 14,0	1	
Reagent BC1	1	
Reagent BC2	1	
Reagent N1	1	
Reagent N2	1	
Syringe, 1 ml	1	
Syringe, 20 ml	1	
Test jar with cap	1	
Test tube with screwed cap	1	

WHEN IN DOUBT

- ⇒ Read the engines manual regarding the coolingwater systems treatment
- ⇒ Contact us for advise
- ⇒ E-mail us all test figures over a period of at least 3 months
- ⇒ Send us a coolingwater and make-up water sample
 - ⇒ Take a sample in a clean bottle at least 0,5 liter per sample
 - Fill the bottle(s) to the top

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Water sampling Lab

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