



MARINE CARE



COOLING WATER TESTKIT



Nitrite, Chloride and pH Test

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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**.

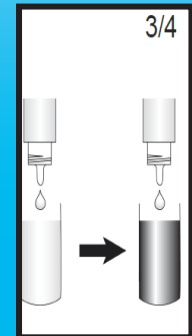
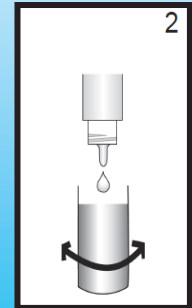
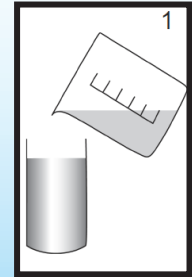
In addition please note and observe the Risk and Safety phrases on each reagent container and follow handling guidelines as instructed.

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

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



Drops of BC2 Reagent	Chloride as mg/l Cl ⁻
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 Chlorides levels:

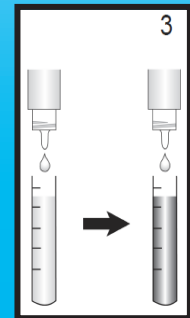
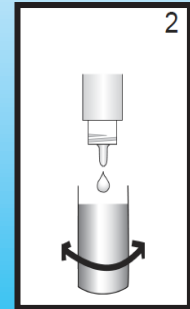
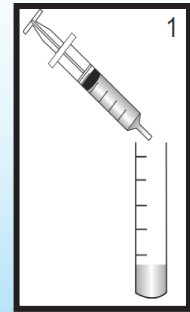
- ⇒ Low + middle speed engines : 100 mg/l
- ⇒ High speed engines : 50 mg/l

In case the chloride level is too high, reduce the amount of chlorides by partly refreshing the coolingwater 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 10 ml test tube.
2. Add 4 drops of Reagent N1. The sample will turn orange.
3. Add drop by drop Reagent N2, until a pale 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 Reagent	Nitrite as mg/l NO ₂
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
Low speed	< 50	1200-1600	4
Middle speed	< 50	1600-2000	5
High speed	< 50	2000-2400	6
Low speed	50 - 100	1600-2000	5
Middle speed	50 - 100	2000-2400	6
High speed	50 - 100	2400-3000	8

Notes:

Maximum Chloride levels:

- ⇒ Low + middle speed engines : 100 mg/l
- ⇒ High speed engines : 50 mg/l

In case of too low Nitrite level dose Caretreat 2 Diesel. 2 liters per m³ gives 750 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 (4,0 - 10,0) or (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		
4,5	Highly corrosive	See fault finding chart
5,0		
5,5		
6,0		
6,5	Corrosive	
7,0		
7,5		
8,0	Slightly corrosive	
8,5		
9,0	Non corrosive	
9,5		
10,0		
10,5	Corrosive on Copper and Aluminium	See fault finding chart
11,0		
11,5		
12,0		
12,5	Corrosive on Iron, Copper and Aluminium	
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, for example leaking cylinder head gaskets
	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 de-mineralized or evaporated water

Partslist Coolingwater Testkit		11910
Description	Amount	Article number
pH strips (100 ea.) 7,0 - 14,0	1	11932
or		
pH strips (100 ea.) 4,0 - 10,0	1	11933
Reagent BC1	2	11934
Reagent BC2	1	11935
Reagent N1	1	11936
Reagent N2	1	11937
Syringe, 2,5 ml	1	11981
Syringe, 20 ml	1	11980
Test jar, 50 ml	1	11982
Test tube with screwed cap 10 ml	1	11983



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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