

**TRIBOMAR**<sup>®</sup>  
Oil Management Solutions

## POTABLE WATER TEST CASE

### Potable Water Test Case

- Complete testing station
- Robust storage box
- Simple step-by-step guide
- All accessories included
- Bacteria Tests
- Disinfectant (Chlorine) Tests
- Temperature Meter
- pH Meter
- ILO/MLC/WHO compliant
- Dehydrated media (no refrigeration required)



Potable Water Test Case

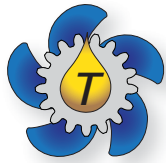


**TRIBOMAR** GmbH  
Biedenkamp 3e  
21509 Glinde/Hamburg  
GERMANY

© 2013 TRIBOMAR GmbH. Changes and errors excepted.

Tel.: +49.40.73 09 13 99-0  
Fax: +49.40.73 09 13 99 33

Email: [info@tribomar.com](mailto:info@tribomar.com)  
[www.tribomar.com](http://www.tribomar.com)



**TRIBOMAR**<sup>®</sup>  
Oil Management Solutions

## POTABLE WATER TEST CASE BACTERIA AND DISINFECTANT TESTS

### Bacteria Tests

- TVC (HPC) plate test  
(aerobic bacteria (0-2000 CFU/ml)  
Simply add water sample to the plate, incubate and count the red colonies
- Coliform/E.Coli Test  
(sensitive to 1 CFU per 100ml sample)
- Enterococci Bacteria Test  
(sensitive to 1 CFU per 100ml sample)
- Pseudomonas Bacteria Test  
(sensitive to 1 CFU per 100ml sample)

For all 3 tests above:

Add a powder sachet to 100ml of water. Incubate and observe the colour change or fluorescence in UV light after 24hrs.



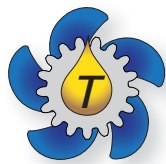
Bacteria Tests

### Disinfectant Tests

- Disinfectant (Chlorine) Tests  
(outlet and tank chlorine levels)  
0-1mg/l disc: For testing water outlets  
0-4mg/l disc: For testing holding tanks
- Disinfectant (Chlorine) Test  
(super-chlorination)  
10-300mg/l disc for sterilization



- Fill a comparator cell with water
- Add a DPD No.1 tablet and crush
- Place cell into the comparator
- Rotate disc and match colour
- Read off the concentration (mg/l)



**TRIBOMAR**<sup>®</sup>  
Oil Management Solutions

## POTABLE WATER TEST CASE TEMPERATURE MONITORING

ILO178: Hot water should be stored at a temperature of at least 60°C and delivered at tap outlet at a temperature no higher than 50°C to avoid scalding.

WHO – Guide to Ship Sanitation (3rd edition): Cold water should be maintained at less than 25°C throughout the system to provide effective control.

## Digital Thermometer

- Contact and immersion probe
- Fast, accurate and reliable
- Cold water services < 25°C
- Hot water services > 60°C



Digital Thermometer

Test	SUPERCHLORINATION	CHLORINE TESTING	HPC (TVC) Ecoli/coliform	TEMPERATURE TESTING	BUNKERING
<b>WATER TANKS</b>	<b>Annually</b> May require up to 5 Chlorine HR Tests to determine the correct superchlorination levels per tank; tank volumes are large, so more adjustment/testing is necessary to achieve 100ppm or 50ppm. The superchlorinated water should be purged through all outlets. A confirmatory Chlorine HR test should be performed at all outlets to ensure that the correct superchlorine level has reached all outlets.	<b>Weekly</b> All Tanks	<b>3 Months</b> All Tanks		<b>Upon Water Bunkering</b> All tanks should be checked for chlorine levels, HPC and coliforms, immediately upon vessel's bunkering water. Chlorine levels should be between 0.2mg/l and 5mg/l
<b>POTABLE WATER OUTLETS</b>	After leaving for the correct time, the water should be drained from the tank and replaced with fresh potable water. The tank chlorine level should be checked to achieve 1-5mg/l (5 chlorine LR tests). The outlets should be purged with this fresh water and all outlets tested (chlorine LR test) to ensure that the chlorine levels have reduced to between 0.2 and 5mg/l	<b>Weekly</b> Nearest outlet Furthest outlet Random selection of remaining outlets	<b>3 Months</b> Nearest outlet Furthest outlet Random selection of remaining outlets	<b>Monthly</b> Temperature monitoring should be performed on the Sentinel hot and cold water outlets. <i>Note:</i> Cold water should be delivered to the outlet (after flushing for 2 minutes) at less than 20°C. Hot water should be delivered to the outlet (after flushing for 1 minute) at more than 50°C. Sentinel outlet - means the first and last tap on the recirculating hot water system and the nearest and furthest outlet on the cold water network. Best practice is strongly recommended. Measure hot and cold temperatures on shower outlets at the same time because they represent the greatest legionella infection risk.	
<b>SHOWERS</b>	<b>3 Months</b> All Showers <i>Note:</i> Removing each showerhead and place it in a bucket containing 100ppm chlorine (for 2 hours) or 50ppm (for 12 hours). All shower heads can fit into one bucket. This can require 2 chlorine HR tests to determine chlorine level. One test to approx check level magnitude, then adjust, and finally retest to confirm. It is sufficient to refit the shower heads and turn water supply on for 5 minutes to purge all chlorine from the showerhead. No post testing required.	<i>Note:</i> this random selection should include 1/12th the remaining outlets, including the showers, so that all outlets have been tested in a 3 month period	<i>Note:</i> this random selection should include 1/4th the remaining outlets, including the showers, so that all outlets have been tested in a 12 month period		
<b>POTABLE WATER HOSES</b>	<b>6 Months</b> All Hoses Chlorine HR test (2 tests per hose)				
<b>HVAC</b>	<b>3 Months</b> water filters, air conditioning system filters, humidifiers, coolers, inlet arrangements				

Potable Water Quality  
Monitoring Onboard

# MLC 2006 – Water Hygiene and Testing onboard

The MLC 2006 is aimed at the flag states and port states as so-called ILO member states.

These parties must implement the requirements of the convention and have to transfer it to national right. This is the basis for the ship operators to implement the MLC 2006 rules in accordance with the corresponding flag of the vessel – in force from August 2013.

One of the requirements for member states is to ensure that on each ship regular checks are undertaken on the cleanliness and hygiene of the food, including water quality!

Where the flag state does not specifically prescribe how and by what criteria & guidelines the implementation has to be handled, it is the responsibility of the ship owner to what extent he performs this method.

Port states are member states of the ILO and possibly have more specific requirements than the flag state of the vessel, such as to the control of drinking water! If the flag state does not ask for testing onboard, the port state can override and demand frequent hygiene testing of the potable water system onboard a vessel.

Often the frequency, type and extent of testing the drinking water - which is required by the member states to varying degrees - is combined with a reference to the recommendations of the WHO (Guide to ship sanitation).

To be prepared for all possible situations and of controls by the port states it is recommended to issue a water safety plan (WSP) and to name a person in charge who is responsible to manage the quality of water hygiene onboard.

The tool for proving the good water quality is the TRIBOMAR POTABLE WATER TEST CASE containing all standard tests listed in the "Guide to Ship Sanitation" of the WHO as reference.

The main parameters are regularly to be checked:

- Coliforms & Coli
- Enterococci
- Pseudomonas
- TVC - Total Viable Count of aerobic bacteria
- pH value (indicates the presence of bacteria)
- Chlorine (HR and LR)
- Temperature (Hot and Cold Water monitoring)

