

Ballast Water Test Kit



The Ballast Water Management Convention was adopted on the 13th February 2004 and ratified on the 8th of September 2016. The aim of this convention was to prevent the spread of invasive aquatic species and pathogens, carried in the ballast water and sediments of ships, being discharged into the sea where they could harm local species and human health. This convention will enter into force on the 8th of September 2019.

Under the convention, all ships in international traffic are to manage their ballast water and sediments to a certain standard, according to the ship-specific ballast water management plan. All ships will also have to carry a ballast water record book and an International Ballast Water Management Certificate (IBWMC).

The convention will apply to the following ships:

1. Ships constructed before 2009 with a ballast water capacity of between 1500 and 5000 m³ must conduct ballast water management that at least meets the ballast water exchange standards or the ballast water performance standards until 2014, after which time it shall at least meet the ballast water performance standard.
2. Ships constructed before 2009 with a ballast water capacity of less than 1500 or greater than 5000 m³ must conduct ballast water management that at least meets the ballast water exchange standards or the ballast water performance standards until 2016, after which time it shall at least meet the ballast water performance standard.
3. Ships constructed in or after 2009 with a ballast water capacity of less than 5000 m³ must conduct ballast water management that at least meets the ballast water performance standard.
4. Ships constructed in or after 2009 but before 2012, with a ballast water capacity of 5000 m³ or more shall conduct ballast water management that at least meets the standard described in regulation D-1 or D-2 until 2016 and at least the ballast water performance standard after 2016.
5. Ships constructed in or after 2012, with a ballast water capacity of 5000 m³ or more shall conduct ballast water management that at least meets the ballast water performance standard.

Regulations

Regulation	Description
D1 – Exchange Standards	Ships performing ballast-water exchange shall do so with an efficiency of 95% volumetric exchange of ballast water. The exchange procedure shall be carried out in an 'open ocean condition' at least 200 nautical miles from the nearest land and in waters at least 200 meters in depth.
D2 – Performance Standards	50 µm or above – less than 10 living organisms per cubic metres (1000 litres) 10 µm – 50 µm – less than 10 living organisms per millilitre
D2 – Human Health Standards	Total Heterotrophic Bacteria: less than 1000 CFU/100ml E.coli: less than 250 CFU/100ml Enterococci: less than 100 CFU/100ml Vibrio Cholera (O1 & O139) – Zero/100ml

VGP 2013 US Coastguard BWTS Requirements

Requirement	Description
Ballast Water System Functionality Monitoring	Ballast water treatment systems use physical and/or chemical processes to achieve reductions in living organisms (i.e. filters, chlorine dioxide, cavitation, UV & hypochlorite). To assess the BWTS functionality, monitoring of the BWTS functionality is required at least once per month for specific parameters that are applicable to your system. Most ballast water treatment systems have control and self-diagnostic equipment such as sensors that continuously measure treatment parameters to verify performance.
Ballast Water Monitoring Equipment Sensor Calibration	All applicable sensors and other equipment must be calibrated annually
Effluent Biological Organism Monitoring	This must be conducted 6 times during the first year the system is installed or used. If the sampling results are within the below parameters for two consecutive events, the vessel may reduce monitoring to 1 time per year after the first year. However if the vessel exceeds the parameters below on any sampling event, they must return to 6 times per year. Monitoring must be conducted at least 14 days apart from different discharge events and records of the sampling/testing results must be retained onboard for a period of 3 years.
Parameters & Limits	Total Heterotrophic Bacteria: less than 1000 CFU/100ml E.coli: less than 250 CFU/100ml Enterococci: less than 100 CFU/100ml
Residual Biocide Monitoring	You must conduct monitoring of the vessel ballast water discharge for any residual biocide used in the treatment process. Initial monitoring is 3 times in the first 10 discharge events (not exceeding a 180 day period), thereafter under maintenance monitoring 2 times per year.
Parameters & Limits	Chlorine Dioxide: maximum 0.2 mg/l or ppm Chlorine: maximum 0.1 mg/l or ppm Ozone: maximum 0.1 mg/l or ppm Peracetic Acid: maximum 0.5 mg/l or ppm Hydrogen Peroxide: maximum 1 mg/l or ppm

Contents

Feature	Ballast Water Test Kit 1	Ballast Water Test Kit 2	Ballast Water Test Kit 3
Marine Heavy Duty Case & Foam Set	•	•	•
Heterotrophic Bacteria Test (0 – 1400 CFU/100ml) – 10 tests	•	•	•
Enterococci Test (0 – 115 CFU/100ml) – 10 tests	•	•	•
E.coli Bacteria Test (0 – 2424 CFU/ml) – 10 tests	•	•	•
Vibrio Cholera (O1 & O139) Presence/Absence CFU/100ml – 10 tests	•	•	•
UV Lamp	•	•	•
Digital Incubator (110v/240v)	•	•	•
Digital Handheld Fluorometer			•
10µm Filter Test – 50 tests		•	
50µm Filter Test – 50 tests		•	
Salinity Refractometer		•	•

The Bruusgaard System



TBS is a unique turnkey portable gas detection solution, giving you increased safety and substantial cost savings through standardised instruments, routines, training and procurement.

Logistic Support

At any given time we know the status of all vessels and sites covered by The Bruusgaard System. We consolidate all shipments and make sure you have everything you need on board until next scheduled delivery. This results in fewer shipments and substantial savings!

- Year round follow up of instruments, spares and consumables
- Handling of all shipments & logistics
- Annual reports per vessel including budgeting



Safety

QA – strict routines and logging

- Crew are able to use instruments and follow routines correctly
- Instruments are in proper working condition at all times
- Instruments are calibrated at correct intervals
- Sensors and other items are replaced at correct intervals
- Usage of instruments is logged, including abnormal observations
- Traceability – instrument history and usage
- Routines and procedures can merge into the overall QA-system

Effective and proven training is an integrated part of The Bruusgaard System.

Instruments

All the equipment used for gas detection and calibration is placed in a custom-made wall cabinet. Including Log & Instruction Manual, which are crucial to maintaining the safety integrity.

- Standardised vessel specific gas detector solutions
- Total solutions including all equipment and routines necessary for efficient and safe use, storage and maintenance

Cost Savings

Some of our customers have been able to go from 8 to 10 suppliers down to 1 – translating into cost savings of up to 40-50%. For one vessel, this could be thousands of dollars annually, and for a whole fleet, the cost savings can be dramatic. This is achieved through:

- One contact for worldwide supply of spares & gases
- All service and calibration can be done on site.
- Reductions of instrument types from 10-12 to 2-3

Reduced maintenance costs through:

- On board calibration
- Fewer instruments on board
- No need for spares on board
- One PO per year
- Increased safety
- Less use of administrative time