



Drew Marine®

**Treatment and Testing
Products for Ballast Water
Treatment Systems**



Ballast Water Treatment Chemicals and Testing Products from a Reliable, Proven Partner

To support our customers' critical engine room systems on board their vessels, and as the premier water treatment supplier to the maritime industry for over 90 years, Drew Marine has developed a strong reputation for water treatment expertise. Our technical expertise in water treatment covers scale and corrosion inhibition, microbial control, foam prevention, waste water treatment, and water testing and analysis. Our water applications expertise includes chemical treatments, testing programs, and onboard support for evaporative distillation, high-pressure and auxiliary boilers, heat exchangers, diesel engine cooling systems, seawater cooling, potable water, chilled water systems, wastewater treatment, and reverse osmosis. We are committed to providing our customers programs and products that promote onboard operational efficiencies and asset protection, and our worldwide distribution and technical support networks ensure prompt resupply and service wherever our customers' vessels call.

With Drew Marine as their proven partner, our customers can expect delivery of chemicals and products that have been manufactured to consistent, global standards wherever their vessels call. With the IMO Ballast Water Management Convention having entered into force, our customers can rest assured knowing our commitment to them extends to the supply of ballast water treatment chemicals and testing products to support their operation of onboard Ballast Water Treatment Systems (BWTS). For these systems, our treatment chemicals and testing products include:

- Neutralizing Agents
- Total Chlorine Reagent Kit for Online Residual Chlorine Monitors
- Mud and Silt Treatment for Ballast Tanks
- Onboard Test Kit to Monitor Performance of BWTS



Neutralizing Agents

For Ballast Water Treatment Systems employing electro-chlorination or direct chlorination technologies to eradicate living organisms in the ballast water, the level of discharged residual chlorine is to comply with allowable discharge limits. When it is discharged with treated ballast water, chlorine can be harmful to indigenous aquatic species. Because of chlorine's possible negative impact on indigenous aquatic species, prior to discharge of chlorinated ballast water, active chlorine levels in the ballast water may require reduction by use of a neutralizing agent.

To support our customers, Drew Marine offers neutralizers most commonly specified by BWTS OEMs. Our inventory is stocked in major ports and includes sodium bisulfite liquid, sodium metabisulfite (solid), sodium thiosulfate liquid, sodium thiosulfate pentahydrate (solid), and sodium sulfite (solid). As a global supplier, Drew Marine has established product specifications for each neutralizer. Neutralizing agents delivered by Drew Marine ensure our customers have access to an accountable supplier with inventory stocked in key ports.

Product Name	PCN	Container
Disodium Sulfite Anh Gran (sodium sulfite)	2086123	22 kg bag (powder)
Disodium Sulfite Anh Gran (sodium sulfite)	2086107	25 kg bag (powder)
Sodium Thiosulfate Pentahydrate	2805127	22 kg bag (crystals)
Sodium Thiosulfate Pentahydrate	2805101	25 kg bag (crystals)
Sodium Metabisulfite	2305135	25 kg bag (powder)
Sodium Bisulfite Liquid	2306422	200 L drum (liquid)
Sodium Bisulfite Liquid	2306265	208 L drum (liquid)
Sodium Thiosulfate Liquid	2805424	200 L drum (liquid)
Sodium Thiosulfate Liquid	2805267	208 L drum (liquid)



Total Chlorine Reagent Kit-HF

When chlorine is employed to treat ballast water, online Total Residual Oxidant (TRO) analyzers are often utilized to monitor total chlorine levels in water being treated during ballasting or during discharge. To ensure an accurate measurement of the total chlorine residual, these TRO analyzers consume specific reagents, and the reagents can be difficult to procure globally. Drew Marine stocks a 12-month reagent kit in major ports for HF Scientific's CLX-XT and CLX-EX Online Residual Chlorine Monitors for Ballast Water. Based on operational cy-

cles, **Total Chlorine Reagent Kit-HF, PCN 1AB5909**, contains about a twelve month supply of reagents.



Total Chlorine Reagent Kit-HF
(PCN 1AB5909)

Sediment and Silt in Ballast Tanks

Because sediment or silt accumulations in ballast tanks can also harbor invasive aquatic species, the Ballast Water Management Convention addresses the management of sediment in ballast tanks. Under the Convention, all ships shall remove and dispose of sediments from designated ballast tanks. The volume of the sediment in the ballast tanks should be monitored on a regular basis, and removal should preferably be done under controlled conditions in port with sediments discharged at a sediment reception facility. However, if sediment is removed from the ship's ballast tanks and disposed of by that ship at sea, then disposal shall

only take place in areas at least 200 nautical miles from land and in water at least 200 meters deep.

To treat sediment and silt in ballast tanks, Drew Marine offers MUD CONDITIONER, PCN 9531402, which can be used to remove existing mud accumulations in ballast tanks. Use of MUD CONDITIONER minimizes the expense and time required to manually muck out ballast tanks. MUD CONDITIONER is a high molecular weight, polymer-containing treatment and is specifically designed and tested to react with mud and silt, forming large non-adhering particles that can be pumped out of the tanks.



Before Treatment



After Treatment

Monitoring Performance of Ballast Water Treatment System

Required functional testing on board by the crew verifies that the BWTS is operating according to the manufacturers' operating specifications. Functional testing may include performance monitoring of installed equipment, meters, or sensors. However, functional testing usually does not measure system performance either directly or through testing for biological indicators. Class societies recommend biological efficacy checks be carried out periodically to ensure the BWTS continues to function as designed and as certified. Drew Marine believes onboard testing for biological indicators will complement required functional testing of the system. Onboard testing is a safety net; it provides an additional safeguard to ensure the BWTS continues to operate as designed and may head off Port State scrutiny.

Drew Marine offers a ballast water test kit that detects specific microbial indicators. These indicators are currently required to be monitored by the US EPA in ballast water samples sent ashore under 2013 Vessel General Permit (VGP) requirements. When detected in a sample, these microbial indicators have been determined by US EPA to be reliable indicator organisms for other invasive aquatic organisms and pathogens that may also be in ballast water. The US EPA has stated these particular indicator organisms are practical and economical for the vessel owner/operators to directly evaluate and then to determine whether or not the ballast water discharge from a given vessel is meeting the numeric limitations with the current, validated test methods available. In accordance with EPA's position, Drew Marine's



Ballast Water Test Kit-QC, PCN 1AB5714, monitors for the presence of E.Coli, Enterococci, and Total Heterotrophic Bacteria, which are indeed the indicator organisms specified by the US EPA.

Each test method in Ballast Water Test Kit-QC yields results in MPN/100 ml, and the test methods (E.coli and Enterococci) are US EPA approved for ballast water. The tests are simple to use and are suitable and practical for onboard testing by the crew. The crew can use the results to determine any necessary corrective action, including completing required system maintenance and repairs, calibration, or functional testing. In essence, the responsible crew member will have quick access to test data on which to make an informed decision concerning the effectiveness of the Ballast Water Treatment System.*

*Note: Under the 2013 VGP, EPA requires ballast water samples be monitored for specific indicator organisms, that is E.coli, enterococci, heterotrophic bacteria, by independent third party laboratories. Tests performed on board by the crew using the Drew Marine test kit will not meet the test result reporting requirements by independent third party laboratories under the VGP. Drew Marine offers the test kit for our customers to complement their functional testing required by the OEM in order to monitor the overall performance of the Ballast Water Treatment System.

Why Choose Drew Marine as Your Supplier for BWTS Products?

Customer focused

Accountable supplier

Knowledgeable account manager

Global supply chain

Consistent products

Onboard technical support

Application know-how

Regulatory support

*For more information about any of
these BWTS products, contact your
Drew Marine Representative.*

OUR VISION

Drew Marine is the most trusted brand and preferred global resource for marine solutions that enhance the longevity and operating efficiency of ocean vessels.

OUR MISSION

To sustain the superiority of the Drew Marine brand by bringing environmentally and technologically superior products and services for the benefit of vessel owners and operators while increasing shareholder value.



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