



**MARINE
CARE**

COOLING & BOILER WATER TREATMENT PROGRAM

All the care you need for optimal performance of boiler and cooling systems with a comprehensive range of products.

At Marine Care we have many years of experience in water treatment of steam boiler and cooling water systems. All of this experience comes back in our comprehensive range of boiler and cooling water products, that ensures your installation runs smooth and continuous.

PRODUCT RANGE

Our cooling and boiler water treatment range consists out of 10 products:

- | | | |
|-----|-------------------------------------|---|
| 1. | Caretreat 1 Evaporator | scale prevention for seawater evaporators |
| 2. | Caretreat 2 Diesel | corrosion and scale inhibitor for cooling water |
| 3. | Caretreat 3 Boiler | corrosion and scale inhibitor for boiler water |
| 4. | Caretreat 4 Condensate | corrosion inhibitor for condensate and steam |
| 5. | Caretreat Oxygen Control | oxygen scavenger for all boiler types |
| 6. | Caretreat Alkalinity Control | alkalinity correction for boiler water |
| 7. | Caretreat Hardness Control | hardness correction for boiler water |
| 8. | Caretreat Oxygen Scavenger | oxygen scavenger for low/medium pressure boiler |
| 9. | Caretreat Boiler Coagulant | coagulant for boiler water |
| 10. | Caretreat Bacteria | bacteria growth control for cooling water |

On the next pages an overview is given where the products are dosed in cooling and boiler water systems.

LOGGING AND DOSING SUPPORT

As our customer, you can rely on the traditional log and dosing forms that help you to keep boiler and cooling water circuits in the right conditions. For ship managers and owners, Marine Care also offers a digital (online) logging system; E-Care, where the reports from multiple vessels can be displayed in a convenient dashboard with custom escalation settings.

No matter what log system you are using, our support lab is at your assistance in case of unsolved challenges for both in depth advice and thorough water analysis.

- Environmentally friendly range of products
- Comes with easy to use log and dosing advise software
- Simple testing
- Suitable for all types of boilers



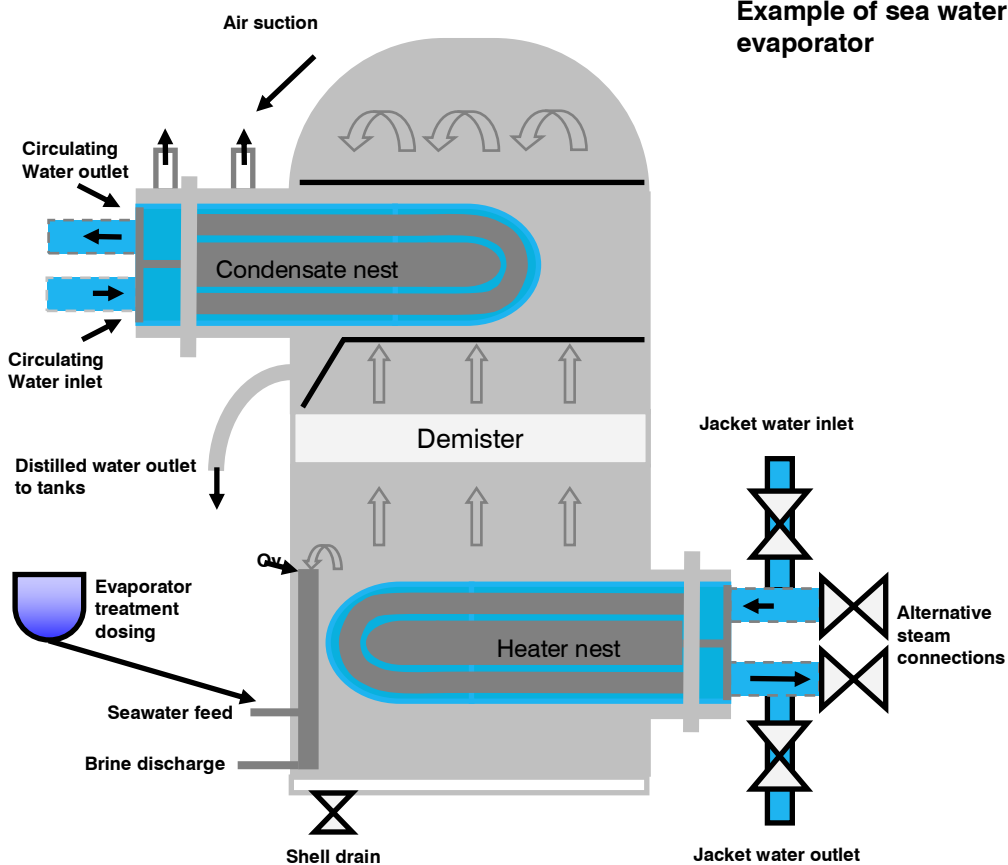
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CARETREAT EVAPORATOR TREATMENT

Foam and scale decrease the efficiency and output of the seawater evaporator systems. **Caretreat 1 Evaporator** is used in seawater evaporators and prevents scale from being build up at temperatures up to 160 °C. It also reduces foam formation. The product is direct dosed at the feed line or in the evaporator shell.



Example of sea water evaporator

BOILER AND COOLING WATER PROGRAM

- Environmentally friendly range of products
- Comes with easy to use log and dosing advise software
- Simple testing
- Suitable for all types of boilers

CARETREAT COOLING WATER TREATMENT

For the cooling water of (diesel engine) systems Marine Care provides **Caretreat 2 Diesel**, a product with combined functionality protecting the system both against scale build up and corrosion. In some cases cooling systems can be affected by bacterial growth, causing slime and biofilms that can be initiators of pitting corrosion that can not be prevented by only dosing Caretreat 2 Diesel. If bacterial growth is detected, it is required to dose **Caretreat Bacteria**.

COOLING WATER CONTROL

Daily monitoring of the most important parameters of the cooling water is required to determine the exact dosing of Caretreat 2 Diesel and Bacteria. To support crews in this process, Marine Care supplies (digital) log sheets with clear instructions and 2 types of test kits:

- Caretech Cooling Water Test Kit for pH, chloride and nitrite concentrations
- Caretech Bacteria dip slides for bacterial count testing



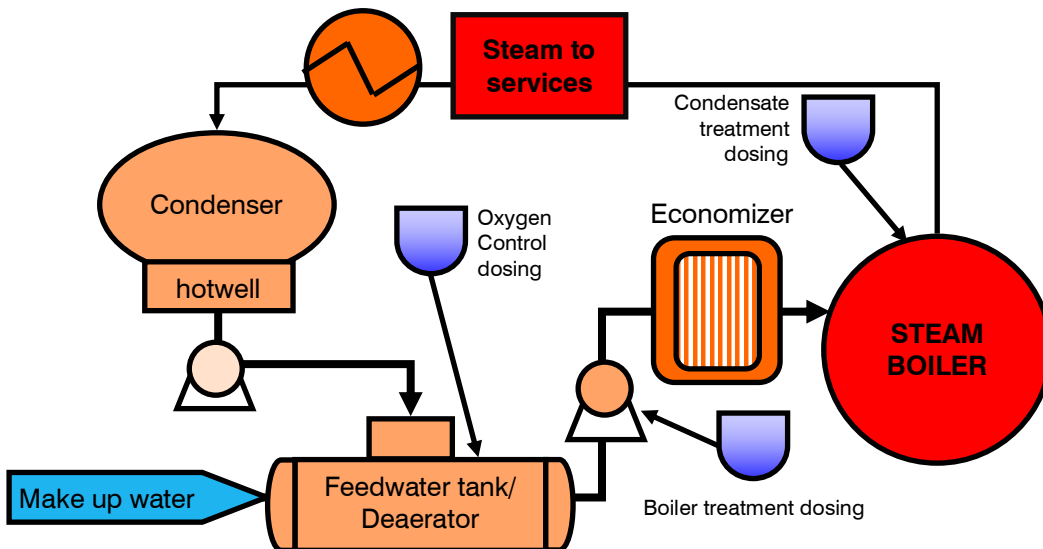
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Schematic example of steam boiler system

BOILER WATER TREATMENT - LOW TO HIGH PRESSURE

For all types of boilers, Marine Care offers a program consisting out of individual products to condition the boiler feed water to desired standards. **Caretreat 4 Condensate** is directly dosed in the boiler, **Hardness and Alkalinity control** are dosed in the feed water line. **Caretreat Oxygen Control** is dosed in the hotwell or deaerator. All products at their own required dosing. The boiler water should be analyzed daily with the Marine Care boiler water test kits. The results of these analysis, reported in the log sheets, lead users to proper dosing instructions.

When the boiler suffers from sludge, **Caretreat Boiler Coagulant** penetrates the sludge deposits and disperses the particles, which are then easier removed with a boiler Blow Down.

BOILER WATER CONTROL

Daily monitoring of the most important parameters of the boiler water is required to determine the exact dosing of our boiler water products. To support crews in this process, Marine Care supplies (digital) log sheets with clear instructions and 3 types of test kits:

- Caretech Boiler Water Test Kit for pH, chloride and alkalinity concentrations
- Caretech DEHA Test Kit to determine Caretreat Oxygen Control concentration
- Caretech Phosphate Test Kit to determine Caretreat Hardness Control concentration



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