



# MARINE CARE

## CARECLEAN COMBI-FLUSH

**Inhibited pH neutral liquid for combined action: removal of grease, rust deposits and passivation of systems with a variety of alloys.**

### DESCRIPTION

Careclean Combi-Flush is an inhibited pH neutral based degreaser, rust remover and passivation agent. It is used for cleaning and passivation of boilers, condensers, diesel coolingwater systems, evaporators, butterworth heaters, pipe systems and other steel surfaces.

### ADVANTAGE

- pH neutral, non corrosive chemicals.
- Removes iron oxides without acid.
- Inhibits to protect cleaned steel surfaces
- Can be used safely on most common ferro and non-ferro metals or combination of metals.
- Does not form plating on steel surface when copper is present.
- Combines degreasing, pickling and passivation of Carbon Steel surfaces in one flush.
- Forms a passive layer on steel surface

### APPLICATION

- Removal of atmospheric dirt and slight oil/grease.
- Cleaning, rust removal and passivation of carbon steel surfaces.
- Rust removal and passivation from boilers, condensers, evaporators, heat exchangers, diesel cooling water systems, etc

### DIRECTIONS FOR USE

- When a boiler is soiled with oil deposits or if silicates and/or calcium sulphates are present, boiling out with Careclean Alkaline Extra is recommended.
- If heavy mineral oil deposits are present in a boiler or cooling system, a preliminary treatment with an emulsifying cleaner, like Careclean Degreaser GP is recommended.

- Environmental friendly

- Biodegradable

- Neutral pH

- Degreasing, descaling and passivation

- Suitable on most metals



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### *Circulation Method:*

Before cleaning with Careclean Combi-Flush solution, we recommend to thoroughly rinse with water; this will partly or completely remove loose sludge, scale, etc. Depending on the nature of the scale and degree of contamination, it is recommended to use a cleaning solution with a concentration of 10 % Careclean Combi-Flush.

Solutions of Careclean Combi-Flush are normally used at a temperature of 45-55 °C, but may be heated to a maximum of 75 °C, which will result in a quicker cleaning process. The length of the cleaning operation depends on the amount of iron oxides, generally speaking within 10 hours. We recommend to measure the iron concentration during cleaning every 30 minutes. The cleaning is finished when the iron concentration has stabilized for at least one hour.

After cleaning, drain off the solution at elevated temperature. In case rinsing is required, rinse with ammoniated water with low chloride content, (5 l/m<sup>3</sup> NH<sub>3</sub>).

### *Circulating system:*

Marine Care provides a portable circulating pump and tank systems ideal for this product. Please refer to the Marine Care equipment information sheet.

### *Cleaning in immersion baths:*

Fill a plastic or plastic lined bath with a 10 % solution of Careclean Combi-Flush in water. Careclean Combi-Flush is normally used at temperatures of 45-55 °C.

Introduce the components to be cleaned into the bath and let them soak for a maximum of 8-10 hours, depending on the degree of iron oxides present. Remove the components from the bath and rinse them with a powerful water jet. Re-immerses the components in the bath for 15-45 minutes then remove the components and let them dry, this will form a passive protective layer on the steel components.

### **CAUTION:**

Suitable for most common ferro and non-ferro metals, except zinc and galvanized materials.

### **DOSAGE**

Circulation	10 % solution
Immersion bath	10 % solution

### **PROPERTIES**

pH	5,5 - 6,5
Density	1,15 g/cm <sup>3</sup>
Flashpoint	Not applicable
Physical state	Liquid

For detailed information on safety and health, please refer to the Material Safety Data Sheet MSDS and/or product label.

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