Life in water

Our goal is to minimize operational and indirect discharges to sea, and strive for zero spills to the sea. Contributors for possible interactions for life in sea:

Ballast water Biofouling

Bilge water

Organic waste

- Anti-fouling release
- Scrubber washwater
- Garbage/waste handling

MARPOL Annex V covers garbage and waste management. Within "special areas" such as the North Sea, it is prohibited to dispose of anything apart from food waste to the sea. Many types of garbage are produced on-board. A garbage management plan is stated for all vessels. Posters for garbage disposal are also displayed on all

The waste is segregated into different categories and the amount of garbage produced is reported through our vessel reporting system.

Waste management plan

Waste to shore

Plastics Incinerator ashes F-waste Scrubber sludge/waste

Waste to sea

Food waste Operational waste

Domestic waste

Cooking oil

Oil sludge

Seawater – scrubber washwater

The current natural concentration of calcium sulfate in seawater is **2.7 g/l**. If all vessels in the world use fuel oil with scrubber for another 150 years, the concentration of calcium sulfate will rise to approximately 2.701 g/l. This means a seawater scrubber can be regarded as a reactor converting sulfur into sea salt.

Chloride 55% (19,25 g) Sea salt: Calcium Sodium 30,6% (10,7 a) Sulfate 7,7% (2,7 a) Magnesium Potassium **Other** 1,1 % (0,39 g) 0.7% (0,39 g) Calcium $1,2\%(1,42~{\rm g})$ Waste incinerated on board