

## SCRUBBER WATER

HPA 20.08.2019

### Definition

Ship exhaust gas cleaning systems (also EGCS or scrubber) are used to remove sulphur oxides from ship exhaust gas. Scrubbers are either installed directly on new buildings or can be retrofitted.

There are different systems of exhaust gas cleaning. The most common option are wet-scrubbers, where seawater is used for scrubbing. It becomes sprayed into the exhaust gas flow which absorbs the emissions and generates wash water. The wet-scrubbers are differentiated into open-loop and closed-loop-systems. While open-loop-scrubbers discharge the contaminated wash water directly back into the ocean, the closed-loop-systems circulate and store the wash water on board in order to process it in a chemical or physical treatment unit and to dispose it in dedicated port reception facilities.

In June 2019, there are about 550 seagoing vessels using a scrubber system. The majority are cruise ships and tankers. Within the next year it is predicted that 3500 vessels are going to be equipped with a scrubber due to retrofitting and new buildings. Then, the main users of EGCS are expected to be bulk carriers and container ships.

### Regulations

An explanation for the increasing trend for the usage of scrubber is the IMO Global Sulphur Cap for marine fuel coming into force by January 1st, 2020. It defines an upper limit of 0.5% sulphur content in marine fuel. Thus, the use of heavy fuel oil will only be possible with running a scrubber.

In general, both open-loop- and closed-loop-systems can be used to comply. The global limits for pH values, turbidity, nitrate and PAHs (Polycyclic Aromatic Hydrocarbons) of scrubber wash water are regulated by the Marine Environment Protection Committee (MEPC).

### Which ports ban wash water discharge (open-loop-scrubbers)?

**Belgien:** All ports

**China:** All ports and inland waterways

**Germany:** Rostock, Bremen, Bremerhaven, Minden, Cuxhaven, Brunsbüttel, Hamburg und Nordhafen Kiel

**Estonia:** Sillamae

**Finland:** Porvoo

**France:** Port Jérôme-sur-Seine, Seine, Le Havre, Ambès Montoir, Bordeaux

**Gibraltar**

**United Kingdom:** Finnart, Hull, Immingham, Avonmouth und Cardiff

**Ireland:** Dublin

**Italy:** Ravenna

**Latvia:** Ventpils

**Lithuania:** Klaipeda

**Norway:** Glomfjord und Heroya

**Portugal:** Lisbon, Sines, Leixoes und Aveiro

**Russia:** Primorsk, St. Petersburg

**Singapore:** (effective from January 1st 2020)

**Sweden:** Brofjorden, Gavle, Norrköping, Umea, Sundsvall, Skelleftehamn

**United States of America:** California, Connecticut und Hawaii

**United Arab Emirates:** Fujairah

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### Usage of Scrubber in the Port of Hamburg

The convention on the collection, deposit and reception of waste generated during navigation on the rhine and other inland waterways (CDNI) regulates the discharge of wash water from scrubber in inland waterways by clearly defining a prohibition of it.

Therefore, the discharge of wash water from a scrubber into the river Elbe and in the Port of Hamburg is **strictly prohibited**.

According to the national water rights (Federal Water Act) an exemption from the prohibition is not possible. The contamination of wash water from scrubber systems is too high that a discharge approval cannot be permitted.

It is possible to dispose closed-loop wash water and solid scrubber waste for a fee at the port reception facilities in Hamburg. The scrubber waste can be declared with the ship's waste notification form (<https://www.hamburg.de/marpol/info/>) before arriving at the Port of Hamburg. Beforehand the first disposal in Hamburg, a wash water sample can be requested in order to determine the toxicity and the type of disposal accordingly. The waste can be disposed from either water or land side. Depending on the toxicity, the scrubber waste becomes incinerated or recycled in a processing plant.

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