



WASTEWATER TREATMENT TERMS: LET’S GET THEM STRAIGHT!

What is wastewater, sewage, black water, grey water? There are a multitude of definitions of these terms, which sometimes differ more, sometimes less. These definitions are given by the INTERNATIONAL MARITIME ORGANISATION (IMO), the U.S. ENVIRONMENTAL PROTECTION AGENCY or classification societies. Here you can find out what is meant and what it is all about!

WHAT IS WASTEWATER?

Wastewater is to be understood as a generic term that can include many different substances. Ballast water, bilge water, wash water from exhaust gas cleaning systems, residual water from food waste, drainage from toilets, showers, wash basins, etc. – all this basically falls under the term wastewater. The term wastewater is therefore not very selective.

When we speak of wastewater in our field of activity, we mean sewage. Both terms are often used as synonyms, although this is not very accurate.

WHAT IS SEWAGE?

HAMANN AG defines Sewage as follows:

- Drainage and other wastes from any form of toilets, urinals and WC scuppers
- Drainage from medical premises (dispensary, sick bay, etc.) via wash basins, wash tubs and scuppers located in such premises
- Drainage from spaces containing living animals
- Grey water when mixed with the drainages defined above

Sewage therefore contains black water in any case and can also contain grey water. The technology of HAMANN sewage treatment plants is designed to always process a mixture of black water and grey water – i.e. sewage in its entirety.

Different definitions of the term sewage come from e.g. the IMO, the EPA and classification societies. Our definition above is largely congruent with that of the IMO. The IMO, however, formulates the last point more openly and speaks of “other waste waters when mixed with the drainages defined above”. We are more specific here by limiting this point to grey water. One reason for this is, for example, that mixing black water with residual water from food waste (which would fall under “other waste water”) would mean that the rules of MARPOL Annex IV (Sewage) would no longer apply to this mixture, but those of MARPOL Annex V (Food Waste).

WHAT IS BLACK WATER?

The term blackwater is not officially used by regulatory authorities such as the IMO, but it is used by the industry and classification societies. As with the term sewage, the definitions of black water also differ depending on the source.

HAMANN AG defines blackwater as follows:

- Drainage containing faecal matter, e.g. from toilets
- Drainage from medical premises if present

Black water is therefore a subcategory of sewerage. The terms blackwater and sewage are often used synonymously, as they both contain faecal matter. However, HAMANN AG distinguishes between the two due to the higher concentration of faeces, pathogens and other potentially hazardous substances in black water.

WHAT IS GREY WATER?

First of all this term is spelled in two different ways: Graywater with an “a” is mostly used in American English and greywater with an “e” is used in British English.

HAMANN AG defines greywater as follows:

- Drainage free from faecal matter or fat, e.g. from dishwashers, showers, wash basins, laundry, etc.
- Galley water after it has been processed in a grease separator.

The IMO (International Maritime Organization) resolution MEPC.227(64) point 2.7 also includes galley water in its definition of grey water, without making the treatment in a grease separator a requirement. However, due to the high fat content in galley water, separate treatment in a grease trap is important not only for the performance of sewage treatment plants, but e.g. for the entire piping system for sewage and greywater on board, which can otherwise quickly become clogged by fat deposits.

WHAT IS GALLEY WATER?

At HAMANN AG, we distinguish between grey water and galley water – unlike IMO, for example. The reason for this is the high fat content in galley water. Fat impairs the performance of sewage treatment plants and can, for example, clog the piping system for sewage and greywater on board due to deposits. That is why we require galley water to be treated in a grease separator so that it can subsequently be considered greywater and processed further in our wastewater treatment plants.

HAMANN AG defines kitchen wastewater as follows:

- Drainage from kitchen premises via sinks and scuppers located in such premises as it likely contains fat

WHAT IS SLUDGE?

Sludge, or sewage sludge, is an unavoidable byproduct of sewage treatment. Sewage treatment plants always generate two output streams:

- Treated sewage, also referred to as effluent
- Sewage sludge

Treated sewage (effluent) can be discharged into the sea (local/regional discharge bans such as in no-discharge areas must be complied).

Sewage sludge mus first be kept on board in holding tanks. There are two options for the discharge of sludge:

- Sludge can be discharged in ports via appropriate fixed facilities or by specialised service providers using tankers to land-based receiving stations
- Sludge can be discharged at sea at a distance of at least 12sm from the nearest shore. The requirements of IMO Resolution MEPC.157(55) (Recommendation on standards for the rate of discharge of untreated sewage from ships) shall be observed.

WASTEWATER IS NOT GARBAGE!

Solid garbage is to be considered separately from wastewater. Garbage is defined in MARPOL Annex V as follows:

“1.1 Garbage means all kinds of victual, domestic and operational waste excluding fresh fish and parts thereof, generated during the normal operation of the ship and liable to be disposed of continuously or periodically except those substances which are defined or listed in other Annexes to the present Convention.”

Garbage also includes food waste. Important: If garbage as defined in MARPOL Annex V, e.g. food waste from the galley, is mixed with sewage as defined in MARPOL Annex IV, i.e. mainly from the toilets, the stricter requirements of MARPOL Annex V apply to the treatment of the mixture.

HAMANN sewage treatment plants are exclusively designed for the treatment of sewage according to MARPOL Annex IV and grey water according to IMO resolution MEPC.227(64) and are not suitable for the treatment of garbage according to MARPOL Annex V.

To find out more on HAMANN sewage and wastewater technology, click here!



WHICH TERM MEANS WHAT? LET’S GET IT STRAIGHT!

There are several terms around that are used in the context of wastewater treatment. Some of them are very specific while others aren’t specific at all. Let’s dive into it and get it straight!

WHAT IS WASTEWATER?

“Wastewater” is a generic term and can mean either black and grey water together or separately, depending on the context. The term “wastewater” is also used synonymously with the term “sewage”. While “wastewater” is the most commonly used term, it is less selective than “Sewage”, “Black water” or “Grey water”.

WHAT IS SEWAGE?

“Sewage” is the most official among the wastewater treatment terms. It is the term used by the IMO (International Maritime Organization) both in the MARPOL Convention (International Convention for the Prevention of Pollution from Ships; “MARine POLution”) as well as by the IMO’s Marine Environment Protection Committee (MEPC) when dealing with the subject. All IMO resolutions issued by the MEPC on this subject speak of “Sewage” and “Sewage treatment”. Therefore, IMO certificates are issued for “Sewage treatment plants”, they don’t say “Wastewater treatment plants”.

MARPOL Annex IV gives the following definition of “sewage”:

“3. Sewage means:
drainage and other wastes from any form of toilets and urinals;
drainage from medical premises (dispensary, sick bay, etc.) via wash basins, wash tubs and scuppers located in such premises;
drainage from spaces containing living animals; or
other waste waters when mixed with the drainages defined above.”

WHAT IS BLACK WATER?

Among all the wastewater treatment terms, the term black water is not officially used by the regulatory authorities and is therefore not clearly defined. In general, the term black water is used to mean “Sewage” as defined in Annex IV of the MARPOL Convention.

WHAT IS GREY WATER?

First of all this term is spelled in two different ways: Graywater with an “a” is mostly used in American English and greywater with an “e” is used in British English. Grey water is defined in IMO (International Maritime Organization) resolution MEPC.227(64) as follows:

“2.7 Grey water – is drainage from dishwater, galley sink, shower, laundry, bath and washbasin drains and does not include drainage from toilets, urinals, hospitals, and animal spaces, as defined in regulation 1.3 of MARPOL Annex IV and does not include drainage from cargo spaces.”

To find out more on HAMANN sewage and wastewater technology, click here!

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