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# BRISK II

# Cargo analysis

Deliverable 2.4

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This document is developed within the BRISK II project to analyse cargo transport in the Baltic Sea and submitted by the Core Project team on 31.10.2025.

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# APPENDICES

# 1 Introduction

## 1.1 Background

This report is part of the long-term risk analysis for oil and hazardous and noxious substances (HNS) pollution from shipping accidents to the marine environment in the Baltic Sea, in short BRISK II. The BRISK II project comprises the following deliverables on the analyses:

1 Deliverables under work package 1 include project management related reports (e.g. progress reports)

2 Work package 2: Basic analysis
- 2.1 Method note
- 2.2 Data collection note
- 2.3 Traffic analysis
- ***2.4* Cargo analysis *(this report)***
- 2.5 Accident and spill model
- 2.6 Probability of oil release

3 Work package 3: Future damage analysis
- 3.1 Traffic scenarios
- 3.2 Selection of risk reduction scenarios
- 3.3 Impact mapping of spilt oil and HNS
- 3.4 Mapping of environmental vulnerability
- 3.5 Mapping of environmental damage due to oil
- 3.6 Mapping of environmental damage due to HNS

## 1.2 Scope

This report presents the cargo model. The aim of the cargo model is to provide a qualified estimation of the cargo status of a given ship in the Baltic Sea. This means estimating the amount and type of cargo aboard any ship of given location, sailing direction, ship type and ship size. This information is a key input to the accident and spill model (deliverable 2.5).

The sub-report on the cargo analysis is divided into the following chapters:

Chapter 2: Definition of oils and chemicals
Chapter 3: Cargo transport data
Chapter 4: Grouping of oils and chemicals
Chapter 5: Oil compounds selected for modelling
Chapter 6: Hazardous substances selected for modelling
Chapter 7: Cargo groups
Chapter 8: Cargo data analysis and modelling
Chapter 9: Modelling of fuel carried for own propulsion

# 2 Definition of oils and chemicals

The definitions of “oils” and “hazardous substance” given below are used throughout this report and the BRISKI II project.

## 2.1 Oils

An oil is defined as:

- Petroleum in any form including crude oil, fuel oil, sludge, oil refuse and refined products, except petrochemicals which are defined as chemicals. This definition follows the definition of oil in MARPOL Annex I (IMO, 1987a), in which it is said that petrochemicals come under MARPOL Annex II (IMO, 1987b).

- Any form of biofuel resembling mineral oil in terms of fate and environmental hazardousness

Note that animal and vegetable oils are considered as chemicals.

## 2.2 Hazardous substances

Hazardous substances are defined the same way as MARPOL defines chemicals:

- Chemical compounds and products coming under the International Maritime Dangerous Goods (IMDG) code (IMO, 2002) or classified in accordance with the classification system in MARPOL Annex II (IMO 1987b).

Some oils fall under the IMDG rules but are excluded from the definition as chemicals in accordance with what was stated for oils.

The IMDG code contains detailed technical specifications to enable dangerous goods to be transported safely at sea. The code includes rules for packing, handling, loading/unloading and stowage of dangerous goods. The code classifies dangerous goods according to nine classes:

1 Explosives
2 Gases
3 Flammable liquids
4 Flammable solids
5 Oxidizing substances and organic peroxides
6 Toxic and infectious substances
7 Radioactive material
8 Corrosive substances
9 Miscellaneous dangerous substances and articles.

# 3 Cargo transport data

## 3.1 Data quality (granularity)

In general, the obtained cargo transport data can be divided into two groups corresponding to their level of detail:

- Micro data contain information about every single ship arrival/departure, including ship characteristics (type, DWT etc.), last port of call/destination, amount and type of loaded/unloaded cargo.
- Aggregated data indicate the amount of tonnes of each cargo group that arrives or leaves at a port. No information about individual arrivals/departures is included. In some cases, cargo types are aggregated into some main cargo groups, e.g. “chemicals” rather than specific substances.

Ideally, input data should be available as micro data.

## 3.2 Cargo transport to and from ports

The experience from the BRISK I project (BRISK, Part 2: Transport, 2012) showed that cargo data can be difficult to obtain from many ports – and if obtained, there can be significant differences with respect to the quality and thus applicability of the data.

Table 3-1 Data received from the ports selected to represent the Baltic Sea cargo transport for the needs of BRISK II.

| No. | Port | Country | Micro data received | Aggregated data received |
|---|---|---|---|---|
| 1 | Kokkola | Finland | x | |
| 2 | Porvoo Sköldvik | Finland | x | |
| 3 | Saaremaa | Estonia | - | - |
| 4-5 | Tallinn incl. Muuga, Paldiski and Saaremaa | Estonia | | x |
| 6 | Riga | Latvia | x | |
| 7 | Ventspils | Latvia | x | |
| 8 | Būtingė | Lithuania | - | - |
| 9 | Klaipėda | Lithuania | - | - |
| 10 | Gdańsk | Poland | - | - |
| 11 | Gdynia | Poland | - | - |
| 12 | Świnoujście | Poland | - | - |
| 13 | Rostock | Germany | - | - |
| 14 | Fredericia | Denmark | - | - |
| 15 | Kalundborg/Statoil-Havnen | Denmark | | x |
| 16 | Aarhus | Denmark | | x |
| 17 | Gothenburg | Sweden | x | |
| 18 | Gävle | Sweden | x | |

For the present project, it has thus been agreed to focus on a limited number of selected ports (BRISK II, Data collection note, 2025), see also Table 3-1 and Figure 3-1. The data was received through the data call to HELCOM Contracting Parties.

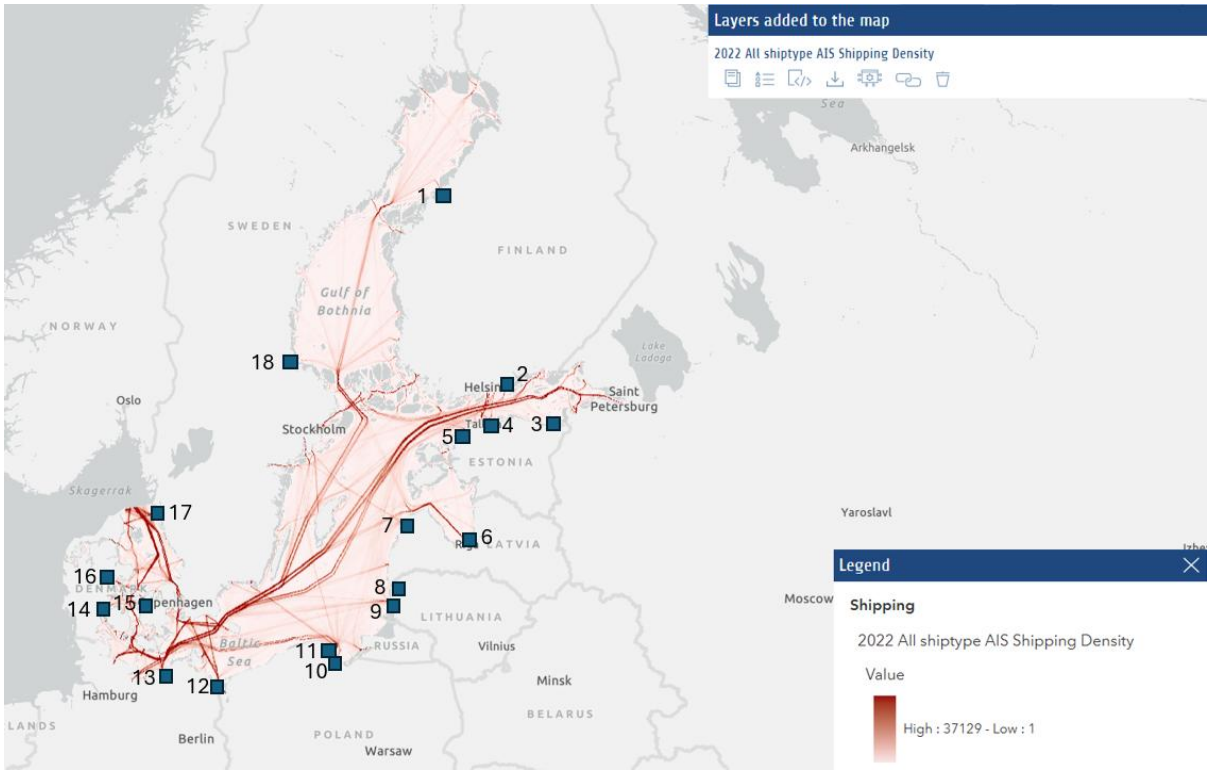


*Figure 3-1* *The 18 ports chosen to represent the cargo traffic in the Baltic Sea (see BRISK II, 2025: Data collection note). The ports of Būtingė, Klaipėda, Gdańsk, Gdynia, Świnoujście, Rostock and Federicia were excluded from the analysis due to challenges with obtaining the data. The data for the Estonian ports of Saaremaa, Muuga and Paldiski were provided merged together, and substituted the information originally requested for Sillamäe (Source: HELCOM map and data service)*

## 3.3 Great Belt VTS

Great Belt VTS registers and contacts every vessel that sails through the Great Belt and collects information about the loaded cargo. These data have a high level of detail (micro data). As the Great Belt is the only pathway for vessels with a draft of over 8 meters to enter or leave the Baltic Sea, the dataset created by the VTS centre provides valuable information that can be applied to the entire Baltic Sea and not just its entrances.

# 4 Grouping of oils and chemicals

## 4.1 Classification of spill behaviour

An important parameter for the analysis of the risk of pollution of the marine environment is the behaviour of the spilled oil or chemical when it meets sea water. This is important to assess both the potentially harmful consequences as well as the chances of limiting the damage.

According to the Standard European Behaviour Classification (SEBC), there are five main behaviour categories: Gases, evaporators, floaters, dissolvers and sinkers (Bonn Agreement et al., 2021). They can be combined into 12 theoretical behaviour classes, as illustrated in Figure 4-1.

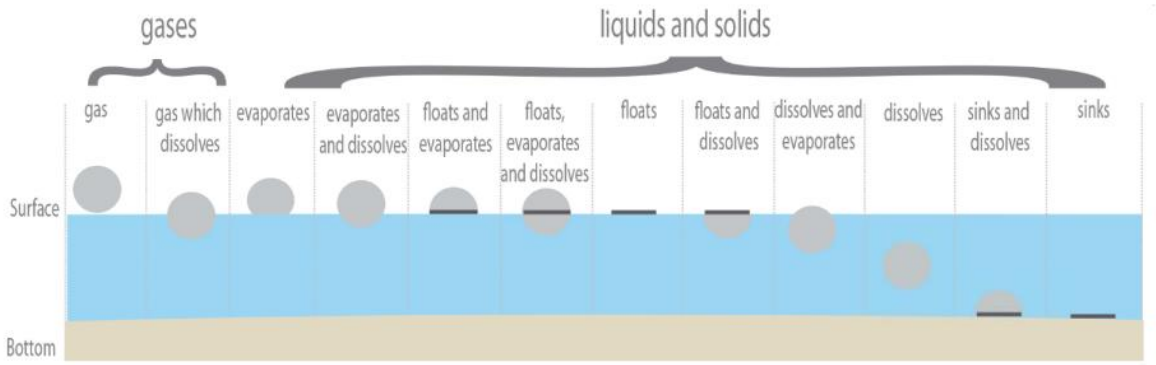


*Figure 4-1* *According to the Standard European Behaviour Classification (SEBC) a substance spilt at sea will behave following one of these 12 theoretical behaviour classes (HNS-MS, 2017).*

For the BRISK II project, the methodology from BRISK I is applied. It is aligned with the SEBC in terms of the main behaviour categories but does use their division into 12 behaviour classes. Moreover, the methodology from BRISK I contains a sixth main category, i.e. sub-surface floaters, which is especially relevant for heavy oil fractions. The resulting behaviour categories are:

1 Evaporates
2 Reacts
3 Floats
4 Floats sub-surface
5 Dissolves
6 Sinks

The behaviour of a spill may be determined from the compound's physical parameters. The grouping in this study has been based on the definitions below. Compounds that react with water are classified according to the nature of the substance resulting from this reaction.

Evaporates: Gaseous compounds at atmospheric pressure and a temperature of 20ºC and rather insoluble in water (see *dissolves*).

Reacts: Compounds reacting chemically with water.

Floats: Compounds rather insoluble in water (see soluble) and having a density of less than 0.9 kg/l.

Floats sub-surface: Compounds aggregating and floating somewhere below the sea surface. The compounds are relatively insoluble in water (see soluble) and have a density between 0.9 kg/l and 1.028 kg/l. True compounds of this nature are only compounds with a density between the actual densities of sea water in the Baltic Sea (In the BRISK II project area, which includes parts of the Skagerrak, densities vary between approximately 1 kg/l and 1.024 kg/l, corresponding to a variation in density of sea water with a salinity of 1 ‰ - 30 ‰ PSU). Outside this interval of density temporary sub-surface floating may occur when fractions of the spill are temperately beaten down in the water by turbulence. This is, however, subject to conditions of wave height, salinity etc.

Dissolves: Compounds soluble in water. Compounds are considered soluble in water if less than 100 parts of water is required to dissolve 1 part of the compound.

Sinks: Compounds insoluble in water (see above) and having a density above 1.028 kg/l.

## 4.2 Hazardous properties

The dangerous properties of the compound include fire hazards, health hazards and hazards to the environment – and any combination of these. Within the rules of IMDG the compounds are classified according to their dominating hazardous properties. Flammable gases are in general classified as group 2. Flammable liquids and solids are classified as group 3 and 4. However, flammable compounds may also be found in other classes.

Environmental harmful compounds and compounds posing a health hazard are found in all classes. Dangerous chemicals classified based on their environmental hazards alone are found in class 9. Noxious liquid substances carried in bulk are categorized based on the rules set in the International Bulk Chemical Code (IBC code) and in the MARPOL Annex II. The new MARPOL Annex II classification, which came into force in 2007 includes four classes:

> Category X: Noxious liquid substances which if discharged into the sea ... are deemed to present a major hazard to either marine resources or human health and, therefore, justify the prohibition of the discharge into the marine environment.
>
> Category Y: Noxious liquid substances which if discharged into the sea ... are deemed to present a hazard to either marine resources or human health or cause harm to amenities or other legitimate uses of the sea and, therefore, justify a limitation on the quality and quantity of the discharge into the marine environment.
>
> Category Z: Noxious liquid substances which if discharged into the sea ... are deemed to present a minor hazard to either marine resources or human health and, therefore, justify less stringent restrictions on the quality and quantity of the discharge into the marine environment.
>
> Other chemicals: Substances which have been evaluated and fall outside Category X, Y and Z because they are considered to present no harm to marine resources or human health.

Oils and chemicals which are floating or sinking (liquid or solid and relatively insoluble in water), and which are not already classified, are in accordance with the MARPOL classification also considered being potentially harmful to the environment.

## 4.3 Interaction of physical properties

When assessing the risk of oil and chemical spills to the sea the interaction between the compound's physical properties, its harmful properties and the sea water is of major importance. In practice it will only be possible to recover spills that float or sink, while recovering water-soluble compounds is primarily possible only in smaller confined areas. Oils and chemicals floating below the sea surface are very difficult to locate and recover and are therefore particularly problematic considering pollution response. Environmentally harmful compounds that evaporate in cannot be combatted in the marine environment as they transfer into the atmosphere too fast.

Oil and chemicals constituting a health or fire hazard are of relevance considering the risk to the response personnel combating the release. Response personnel who are not equipped with protective clothing and breathing apparatus, or other comparable protection, must keep a safe distance to the spill. This safety distance may mean that a spill which could have been effectively mitigated in theory was not.

Several different substances may be spilled at the same time. This means that there will be a chance of simultaneous spills of several hazardous chemicals. The present study does not consider the potential chemical interaction between several simultaneously spilt substances.

## 4.4 Grouping to be applied in this report

### 4.4.1 Classification based on behaviour after a spill in the marine environment

To assess the emergency preparedness, the compounds are grouped considering their behaviour when spilled into the marine environment, as outlined in Section 4.1:

- Evaporates
- Reacts
- Floats
- Floats sub surface
- Dissolves
- Sinks

A representative set of cargos of oil and chemicals is set up and assigned to the ship traffic: the compounds transported, the amounts transported, transport mode etc. is based on a detailed analysis of the actual transportation pattern including routes and types of ship. This serves as input for the risk analysis.

### 4.4.2 Classification of danger

As a basis for further modelling the chemicals are grouped considering their hazardous properties:

- Fire hazard
- Health hazard
- Environmental hazard

For of these hazards, three hazard classifications are applied: Very hazardous, hazardous and not hazardous.

**Fire hazard:**

- Very hazardous: Substances classified as explosive (E), extremely flammable (F+) and highly flammable (F) in the EU regulation 1272/2008 (EU, 2008) fall into this group[1]. The background is that these substances are more ignitable than crude oil.

- Hazardous: Substances that can ignite when released into the sea but that do not qualify as "very hazardous"

- Not hazardous: Substances that do not qualify as very hazardous or hazardous. This also includes substances that are flammable but are very difficult to ignite once released, such as heavy fuel oil.

Crude oil may qualify as very hazardous depending on its content of volatile components. However, it is assumed that the relevant volatile components will have evaporated before response is initiated, thus rendering it (simply) hazardous.

**Health hazard**

- Very hazardous: Substances where the response personnel are required to use more protective equipment than in case of a crude oil falls into this category. This applies to substances classified as "very poisonous" (Tx), "poisonous" (T) or "corrosive" (C) according to EU regulation 1272/2008 (EU, 2008).

- Hazardous: Substances classified as "harmful" (Xn) or "irritant" (Xi) in the directive.

- Not hazardous: Substances that do not qualify as very hazardous or hazardous.

Crude oil may qualify as very hazardous depending on its content of volatile components. However, it is assumed that the relevant volatile components will have evaporated before response is initiated, thus rendering it (simply) hazardous.

**Environmental hazard**

- Very hazardous: Substances listed as category XA or XB according to MARPOL Annex II (IMO, 1987b)

- Hazardous: Substances posing a hazard to marine resources or human health when discharged into the sea that are not classified as "very hazardous"

[1] As a general note, the classifications E, F+, F, Tx, T, C etc. are a legacy system described in Table 3.2 of the regulation. They currently co-exist with a newer system described in Table 3.1 of the regulation.

- Not hazardous: Substances not posing a hazard to marine resources or human health when discharged into the sea

The three classes are appointed a colour visualizing the hazard level: Red = Very Hazardous, Yellow = Hazardous and White = Not Hazardous. These colour codes are applied in the remainder of the report.

Combining fire hazards, health hazards and environmental hazards with three hazard levels (red, yellow, white) gives nine possible combinations. Combining these with the six behaviour categories gives 54 combinations. Not all these combinations are equally relevant and some of those are thus clustered together in Chapter 5 and 6.

# 5 Oil compounds selected for modelling

The methodology applied for BRISK I (BRISK, Part 2: Transport, 2012) selected the following substances to be modelled based on the amounts transported and the physical behaviour in case of a spill to the sea:

- Crude oil
- Diesel
- Petrol
- IFO 380 (possible sub-surface floating)

IFO 380 is representing both IFO 180 and IFO 380. The probability of sub surface floating is set considering this.

For the BRISK II project, it has been decided to add two further substances reflecting the ongoing development towards reduced carbon emissions and reduced air pollution. In the method note (BRISK II, method note, 2025), it was originally decided that these two substances would be co-processed oil and low-sulphur oil. Additional considerations have however made it clear that the majority of all co-processed oil does not differ from conventional diesel in terms of fate, hazardousness and effectiveness of response. At the same time, it became evident that low-sulphur oils can behave very differently and need to be split up into two main classes. As a result, the cargo model (and all subsequent sub-models) operates with the following two additional substances:

- Very low-sulphur fuel oil (VLSFO), low sulphur fuel oil with sulphur content 0,5% or less
- Ultra low-sulphur fuel oil (ULSFO), low sulphur fuel oil with sulphur content 0,1% or less

Both LSFO classes differ significantly from conventional high-sulphur fuel oils, which in the model is represented by IFO 380. The Baltic Sea bunkering data collected by the IMAROS 2 project support the section of IFO 380 as representative HSFO. The difference between conventional and low-sulphur fuel oils lies mainly in the large, mostly unpredictable variations in terms of behaviour (viscosity at given temperature, floating behaviour etc.). In the context of the BRISK II model, these differences mainly affect in the response model, which will be addressed under deliverables D3.2 *Risk-reduction scenarios* and D3.5 *Environmental damage*.

*Table 5-1 Grouping of oil including colour classification of hazards to the environment, health hazard and fire hazard*

| Oil | Behaviour in case of a spill to the sea | Environmental hazard | Health hazard | Fire hazard |
|---|---|---|---|---|
| Crude oil | Floats, possibly sub-surface | | | |
| IFO 380 and 180 | Floats, possibly sub-surface | | | |
| Diesel, jet fuel and heating oil | Floats | | | |
| Petrol | Floats | | | |
| Very low-sulphur fuel oil (VLSFO) | Floats, possibly sub-surface | | | |
| Ultra-low-sulphur fuel oil (ULSFO) | Floats, possibly sub-surface | | | |

# 6 Hazardous substances selected for modelling

Only hazardous substances transported as cargo are considered. Chemicals required for operation and maintenance of the ship are not modelled as they only constitute an insignificant risk to the environment. Hazardous substances may be carried in bulk or in packaged form. Ships may be bulk carriers, specialised chemical tank vessels, container ships or general cargo ships. Further chemicals may be transported on board ferries, Ro-Ro ships etc.

## 6.1 Relative contribution of different chemicals

A vast number of different hazardous substances exist. In the context of environmental protection, it makes sense to group them according to relevant categories, i.e. hazardousness and behaviour after spill (floats, sinks, etc.). Unfortunately, most of the collected data makes it impossible to determine the relative contribution of different hazardous substances. Micro data are available for some locations, such as Great Belt VTS (Table 6-1Table 6-1).

*Table 6-1 Transport of chemicals in bulk through the Great Belt*

| Behaviour when spilt in sea water | Environment | Health | Fire | Entrances of the Baltic Sea (Great Belt VTS) |
|---|---|---|---|---|
| Evaporates | | | | 4.3 % |
| Floats | | | | - |
| | | | | - |
| | | | | 4.6 % |
| | | | | - |
| | | | | - |
| | | | | - |
| Dissolves | XA | | | - |
| | XB | | | - |
| | | | | 23.7 % |
| | | | | 65.8 % |
| Sinks | | | | 0.1 % |
| | | | | 1.4 % |
| | | | | 0.1 % |
| *Total* | | | | *100 %* |

## 6.2 Modelling of hazardous substances

The assessment of the risk to the environment is made considering chemicals transported in bulk. These chemicals are transported in larger quantities than compounds carried in packaged form. The compounds most hazardous to the environment transported in bulk are selected for the modelling.

The model considers the following classes of chemicals (examples are indicated).

Evaporates:

- None

Chemicals evaporating are not considered within BRISK II as they are deemed to have a very limited impact on the marine environment compared to non-evaporating chemicals.

Floats:
*(Note that evaporating substances that do not immediate evaporate are categorised as floating substances – this is a conservative model decision)*

- Hazardous to the environment (yellow), not restricted in response measures (white/yellow in fire hazard): Vegetable and animal oil
- Hazardous to the environment (yellow) and restricted in response measures (red in both health and fire hazard): Benzene
- Hazardous to the environment (yellow) and restricted in response measures (red in fire hazard): Toluene.

Specific chemicals floating sub surface were not identified during the Danish oil spill risk analysis (Danish Ministry of Defence, 2007), that formed the basis for the modelling in the BRISK I model and consequently they are not modelled neither in BRISK I nor BRISK II.

During response measures the personnel may become exposed to hazards due to the nature of the spill. Safeguarding the personnel may affect the efficiency of the efforts and restrict the operation.

Dissolves including reacting chemicals with soluble chemicals as result:

- Very Hazardous to the environment (red), XA (MARPOL class X, former MARPOL class A): Acetone cyanohydrine
- Very Hazardous to the environment (red), XB (MARPOL class X, former MARPOL class B): Acrylonitrile
- Hazardous to the environment (yellow): MTBE (Methyl tert-butyl ether)

Chemicals reacting with water forming water soluble compounds are modelled as soluble.

Sinks:

- Very Hazardous to the environment (red): Tar

- Hazardous to the environment (yellow): Molasses
  *(Note that molasses eventually dissolves. However, it is counted as sinking substance, as molasses released in large quantities will first sink before eventually dissolving. This modelling choice is on the conservative side in terms of environmental consequences.)*

An overview of all representative substances is provided in Chapter 7.

# 7 Cargo groups

The model operates with 24 cargo groups, see Table 7-1. Each cargo group is modelled by a representative substance. Cargo group 1-14 correspond to the substance groups and representative substances identified in Chapter 6 (*Hazardous substances selected for modelling*). Cargo group 18-24 correspond to the oil groups identified in Chapter 5 (*Oil compounds selected for modelling*). The remaining cargo groups 14-16 cover all other cases (ballast, other cargo, unknown cargo).

In the case of cargo group 2, 3, 6, 8 and 9, no transport of matching substances has been reported neither in the data collected for BRISK I nor for BRISK II. These cargo groups are therefore not represented by a specific substance.

*Table 7-1 Cargo groups used for BRISK II*

| Representative substance | Behaviour when spilt in sea water | Environment | Health | Fire | Cargo group |
|---|---|---|---|---|---|
| Vinyl chloride | Evaporates | | | | 1 |
| - | Floats | | | | 2 |
| - | | | | | 3 |
| Vegetable and animal oil | | | | | 4 |
| Benzene | | | | | 5 |
| - | | | | | 6 |
| Toluene | | | | | 7 |
| - | Dissolves | XA | | | 8 |
| - | | XB | | | 9 |
| MTBE | | | | | 10 |
| Methanol | | | | | 11 |
| Tar | Sinks | | | | 12 |
| Molasses | | | | | 13 |
| Bentonite | | | | | 14 |
| Ballast | | - | - | - | 15 |
| Other | | - | - | - | 16 |
| Unknown | | - | - | - | 17 |
| *(Legacy from BRISK I, not used anymore)* | - | - | - | - | 18 |
| Crude oil | Floats | | | | 19 |
| IFO 380 (HSFO) | Floats/floats sub-surface | | | | 20 |
| Diesel | Floats | | | | 21 |
| Petrol | Floats | | | | 22 |
| VLSFO | Floats/floats sub-surface | | | | 23 |
| ULSFO | Floats/floats sub-surface | | | | 24 |

# 8 Cargo data analysis and modelling

## 8.1 Definition of cargo model areas

To analyse the collected cargo data in a meaningful way, it is necessary to define some principal cargo model areas. A cargo model area is understood as a sea area with a more or less homogenous traffic composition. As a main principle, the areas are meant to follow the main traffic corridors and their respective junctions. During BRISK I, 16 cargo model areas were used. For the current project, some of the original areas have been combined into 9 new cargo model areas. The number and extent of these areas is aligned with the number and location of the ports, for which cargo data has been selected, cf. Table 3-1. Using the original 16 areas would thus not add any additional detail to the cargo model.

The shape and number of the defined cargo model areas defined in Figure 8-1 follow the following rationale:

- 1 Bothnian Bay: The Bothnian Bay is a confined by land on three sides. Almost all traffic to the remainder of the Baltic Sea sails via Norra Kvarken, a narrow navigational channel at its southern end. The Bothnian Bay is thus a clearly distinct sea area, not only with respect to traffic patterns. Data from Kokkola play a central role in the cargo model for the area.

- 2 Bothnian Sea and West of Gotland: The Bothnian Sea is located south of the Bothnian Bay. It is connected to the latter by the Norra Kvarken and to the remainder of the Baltic Sea by the Southern Kvarken, both constituting narrow navigational channels. All traffic in the Bothnian Sea either originates from the area itself or from the neighbouring Bothnian Bay. Just to the south, the area west of Gotland is closely linked to the Bothnian Sea in terms of traffic, whereas it is clearly distinct from the traffic originating from the Gulf of Finland. Data from Kokkola and Gävle play a central role in the cargo model for the area.

- 3 Eastern Gulf of Finland: Eastern GOF is chosen in such a way that it includes all Russian GOF ports. As no port data from Russian ports is available, data from Great Belt VTS play a central role for estimating the cargo load state of ships navigating in this area. As most ships in the area are bound to and from ports outside the Baltic Sea, this is a natural choice of data source in lack of local port data.

- 4 Western Gulf of Finland and Klints Bank: The Western part of the Gulf of Finland (GOF) is confined by land both in the north and the south. It is one of the areas of the Baltic Sea with the most intense ship traffic. Almost all traffic is bound to the only exit of the GOF. Most of the remaining traffic is related to the intense ferry traffic between Estonia and Finland, running transverse to the main traffic. Traffic around Klints Bank centrally in the Baltic Proper is predominantly related to the Gulf of Finland. Therefore, Klints Bank and Western Gulf of Finland are treated as one cargo model area. Data from Skjöldvik and the four ports under Port of Tallinn are available, and data from Great Belt VTS is also relevant (cf. Eastern Gulf of Finland).

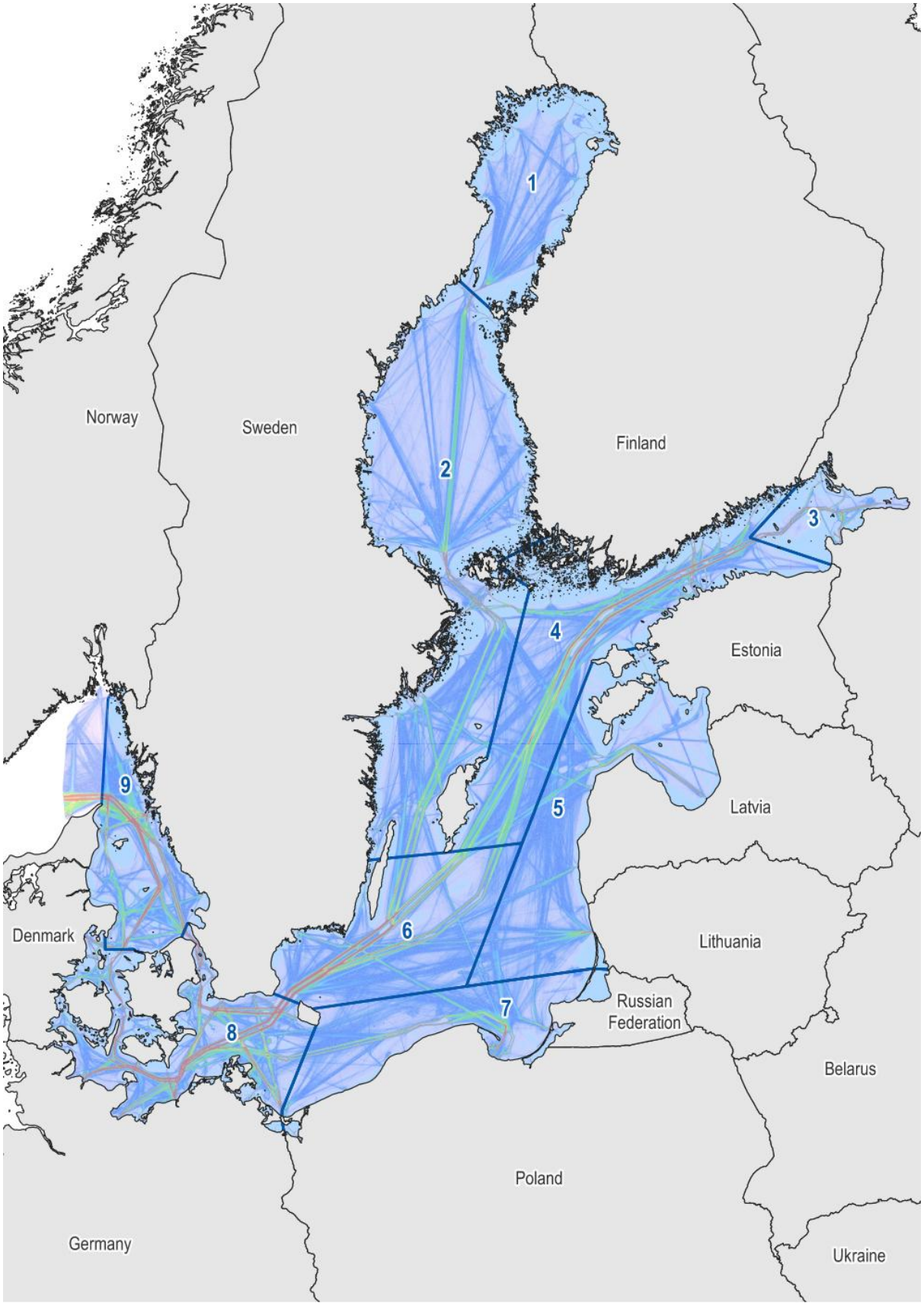


*Figure 8-1* *Borders of the cargo model areas used in the transport model (background: AIS-based ship density plot)*

- 5 Eastern Baltic Proper: This area comprises the ports of Estonia, Latvia and Lithuania (excluding the Estonian GOF coast). Its boarders are defined in such a way that it includes the transit traffic from these ports, before the respective routes merge with the traffic to and from the Gulf of Finland. Port data from Riga and Ventspils play a central role for the cargo model in this area.

- 6 South of Gotland: The cargo model area south of Gotland consists of an almost straight and heavily demanded route with a junction at each end. In the north-eastern end, traffic from cargo areas 2, 4 and 5 and Gulf of Riga merge together. In the south-western end, traffic passes the Bornholmsgat before interchanging with traffic to several other areas in the Arkona Sea. All ports north of this area serve to inform the cargo model, as does data from Great Belt VTS.

- 7 Slupsk Bank: The traffic from Poland and the Russian Kaliningrad exclave towards the exits of the Baltic Sea is clearly distinct from the traffic in the Bornholmsgat (see Figure 8-1). It passes Bornholm via the south before interchanging with Bornholmsgat, Fehmarn Belt and The Sound. No specific port data is available, such that data from Great Belt VTS and from ports in adjacent countries are used as data source for the cargo model.

- 8 Baltic Sea Entrance and Arkona Sea: There are three main entrances to the Baltic Sea: The Kiel Canal, the Great Belt and The Sound, which all are in this cargo model area. It also hosts Denmark's busiest port, Aarhus, as well as Kalundborg, which are both among the selected ports. Great Belt VTS is the main data source and is also located within this cargo model area.

- 9 Kattegat: This is the open sea area between the Jutland peninsula and Sweden. Generally, it is meant to be confined by a straight line, running eastwards from the northern tip of Jutland (The Skaw) to the Swedish coast. Everything north of this line is considered as Skagerrak, which already belongs to the North Sea. For the BRISK II project, it has been decided to include the entire Swedish coast. Therefore, the Kattegat cargo model area in Figure 8-1 also includes the easternmost section of the Skagerrak. Traffic in the Kattegat consists of ships bound to the Great Belt and The Sound, some of the traffic from the Little Belt and the ports of the Kattegat area. Port data from Gothenburg is available and data from Great Belt VTS also play a central role for the cargo model.

## 8.2 Data analysis procedure

### 8.2.1 Introduction

The aim of the cargo transport analysis is to provide an educated estimate of the cargo status of a given ship in the Baltic Sea. All modelling aspects described below are guided by this aim.

The traffic analysis (BRISK II, Traffic analysis, 2025) created a traffic model describing each single movement of vessels of 300 gross tonnage and above based on AIS traffic data. The traffic model contains information about the chosen route, ship type and dead weight tonnage of each ship. However, it does not contain any information about the cargo status.

The purpose of the cargo model is to supplement cargo data to the traffic model by producing tables of the following shape:

*Table 8-1 Shape of the cargo model table*

| Cargo model area | Ship type | DWT class | In/ Out | Fraction of loaded ships | Cargo group (fraction of loaded cargo) 1, 5, 7, ... ..., 21, 22 |
|---|---|---|---|---|---|
| 2 | 4 | 5 | In | 60% | 0 %, 30 %, 20 %, ... ..., 50 %, 0 % |
| ... | ... | ... | ... | | ..., ..., ..., ... ..., ..., ... |

The table is based on the ship types, deadweight tonnage class and sailing directions defined in the traffic model. Each route segment from the traffic model is part of a cargo model area. In this way, the link between traffic model and cargo is created. The actual cargo information is contained in the right part of the table:

- Fraction of loaded ships: Defined as the percentage of the utilised cargo capacity, i.e. sum of cargo going in/out of a port divided by sum of deadweight tonnage of the ships going in/out of the same port (or in/out of the Baltic Sea via the Great Belt).
- Cargo group (fraction of loaded cargo): Defined as the contribution of the individual cargo groups to the total cargo transported in/out of a port (or in/out of the Baltic Sea via the Great Belt).

Both the fraction of loaded ships and the relative contribution of the cargo groups are calculated separately for each combination of ship type, ship size and sailing direction.

Creating tables with the structure shown in Table 8-1 requires four modelling steps:

1 Selection of relevant ship types

2 Analysis of cargo tonnages for each port (or VTS centre)

3 Analysis of cargo percentages for each port (for VTS centre)

4 Creation of cargo percentages for each cargo model area

These steps are outlines in detail on the following pages.

### 8.2.2 Step 1: Selection of relevant ship types

The BRISK II model operates with 9 cargo model areas, 25 ship types, 6 DWT (Deadweight tonnage) classes and 2 directions (in/out). In principle, this means that the cargo model table has 2,700 lines. The traffic analysis (BRISK II, Traffic analysis, 2025) is based on 25 ship types. For the cargo model, it is sufficient only to regard those ship types that are likely to transport oil and hazardous substances in relevant quantities. This excludes ships that are not dedicated to carrying oil and hazardous substances (e.g. general cargo ships, reefers etc.) and packaged good transports (ferries, RoRo ships and container ships), which typically do not carry large amounts of a specific hazardous cargo substance (see also Section 3.3.2 in BRISK II, (Method note, 2025)).

The cargo model operates with the following seven relevant ship types:

- Bulk carrier
- Bulk/oil carrier
- Gas tanker
- Chemical/product tanker
- Chemical tanker
- Product tanker
- Crude oil tanker

### 8.2.3 Step 2: Analysis of cargo tonnages for each port

In order to obtain a data model table as illustrated in Table 8-1, raw cargo transport data need to undergo a series of filtering and conversion steps:

- All cargo types identified from the port and VTS datasets are assigned to a cargo group based on the classification laid out in Table 7-1.

- All vessels carrying oil and/or hazardous substances from the cargo data set need to be allocated to one of the above seven ship types as well as to one of the six DWT classes.

- Finally, cargo tonnages are aggregated for each combination of ship type, DWT class, sailing direction (in/out) and cargo group. This corresponds to a table with 84 lines for each port. Of the 24 cargo types, 18 are used in practice, which corresponds to 18 table columns in the right part of the table.

### 8.2.4 Step 3: Analysis of cargo percentages for each port

In this work step, the total cargo tonnage (per ship type, DWT class, direction and destination/origin) is compared to the number of ships (of same ship type, DWT class, direction). The number of ships at each port and VTS area is known from the traffic model.

The result of this work step is a table indicating a) the percentage of utilised transport capacity (fraction of loaded ships and b) the contribution of each cargo group. The transports capacity of a ship is generally estimated to correspond to 95 % of its DWT (BRISK, Part 2: Transport, 2012). Several data repair strategies have been relevant for some of the received datasets from the selected ports and Great Belt VTS:

- Adjustment of fraction of loaded ships: When adding the fraction of loaded ships in ingoing and outgoing direction for a given combination of ship type and ship size, the result should always be at least 100 %. If the data show lower numbers, the fractions are scaled up to reach 100 % in aggregate. This correction is based on the fact that the same ship will not sail empty both ways. This assumption might be conservative in some cases, i.e. if a ship sails 70 % loaded in one direction and in ballast in the other direction.

- Redistribution of unknown cargo: Cargo of unknown type is assumed to on average resemble cargo of known type and is redistributed it accordingly.

- Combination of ship types: For some ports, it is necessary to make simplifications all depending on the data quality. E.g., if the type of tanker cannot be identified from the data set from a given port, then all tankers need to be combined into one common ship type for that port.

- Extrapolation to different DWT classes: Many ports do not have calls from ships in each DWT class for each ship type. This can both be due to trade patterns and/or to physical limitations of the port itself as well as the sea area connecting the port to the rest of the world's oceans. In these cases, information from adjacent DWT classes is used to fill the gaps in the table. As a matter of principle, all gaps are filled. In this way, it is guaranteed that every ship movement in the traffic model always can be associated with a cargo load state.

- Transfer of data from other ports and VTS centres: For bulk carriers, bulk/oil carriers and gas tankers, data from the analysed ports do not contain much information on transport of oil and hazardous substances. Here, information from Great Belt VTS is used as a proxy.

### 8.2.5 Step 4: Creation of cargo percentages for each cargo model area

The cargo model results from the previous step describe the situation at a singular location, i.e. a port or a VTS area.

In the last modelling step, this information is systematically spread out over the cargo model areas defined in Figure 8-1. This is done by creating weighted averages of the port- and VTS-specific cargo models. Typically, the cargo model in an area is heavily influenced by ports located in the same area. The basic considerations on which ports to consider in which cargo model area (and whether to consider Great Belt VTS) are outlined in Section 8.1 for each area.

## 8.3 Results

The full results of the cargo transport analysis are provided in Appendix A. The main purpose of the cargo analysis is to provide accurate input information to the accident and spill model. Although the individual numbers in the appendix are straightforward to understand, it is relatively difficult to get a full picture by simple viewing, as they are detailed and at the same time affected by several overlayered patterns. Thus, all efforts to summarise the cargo analysis results will necessarily be superficial. Nevertheless, a few generalising observations can be made:

- As in earlier analysis, it is seen that crude oil carriers also carry oil products while oil product tankers also carry crude oil. For both crude oil tankers and oil product tankers, the share of crude oil carried in significantly larger in ships over 100,000 DWT than in smaller ships.

- Chemical tankers relatively often carry oil products, whereas oil product tankers relatively rarely carry chemicals. Combined tankers, so-called chemical/oil product tankers, carry both oil and chemicals without one of the two groups obviously dominating. However, larger chemical/oil product tankers carry a higher proportion of oil than smaller ships.

- As opposed to BRISK I (data from 2008/2009), bulk carriers appear not be carrying chemicals in the reference year 2024. Moreover, bulk/oil carriers are only seen carrying oil into the Baltic Sea but not in the opposite direction.

- Transportation of low-sulphur fuel oil (VLSFO and ULSFO) can be observed (cargo group 23 and 24). However, they are only observed in relatively few ports and only amount to a very small share of all cargo carried by oil tankers, i.e. typically one to two percent. This number is much smaller than the share of low-sulphur fuel oils carried in bunker tanks for own propulsion (almost 50 %, see Chapter 9). It is not known what causes this discrepancy. One hypothesis is lack of detail in the cargo data, such that low-sulphur fuel oil is classified as (conventional) fuel oil. Another hypothesis would be that a significant part of the low-sulphur fuel oil produced might be bunkered from nearby refineries via pipelines or via smaller feeder ships that only operate locally and thus are underrepresented in the collected datasets.

- Regional differences between the individual cargo model areas can be seen. They are governed by the selection of port data used to populate the cargo model in a given area. In areas where no port data has been available (such as Eastern Gulf of Finland and Slupsk Bank), the results are heavily influenced by the situation observed at the Great Belt. Since many ships are entering and leaving the Baltic Sea via Great Belt, it serves as a universal proxy in terms of cargo data.

# 9 Modelling of fuel carried for own propulsion

Fuel for the use of propulsion is stored in the ship's bunker tanks. The capacity of these tanks is typically in the range of between 2,000-10,000 t. For large container vessels the tanks may be as large as 15,000 tons. The bunker tanks constitute a potential source of pollution with oil – and nowadays also with HNS.

Fuel is available in several grades with a rather large difference in price. Typically, larger ships would use heavy (residual) oil which is less costly than refined products (diesel) used by smaller ships. Table 9-1 contains the information collected during BRISK I and BRISK II.

*Table 9-1 Data and estimates on bunkering and bunker tank content from BRISK I and from the BRISK II data collection*

| Substance | Bunkering at sea in Danish EEZ, 2006 | Bunkering at sea in Danish EEZ, 2024 | IMAROS 2 |
|---|---|---|---|
| HSFO | 85 % | 13.4 % | 30 % |
| LSFO<br>*VLSFO*<br>*ULSFO* | | 40.0 % | 48 %<br>*44 %*<br>*4 %* |
| Marine gasoil | 15 % | 44.8 % | 20 % |
| Biofuel | | 1.8 % | 2 % |
| Total | 100 % | 100 % | 100 % |

Between 2006 and 2024, the share of low-sulphur fuel oil (LSFO) rose from 0 to 40 % of all fuel bunkered at sea in the Danish EEZ. The current distribution between HSFO and LSFO is 25:75. The share of conventional diesel increased from 15 to 45 % in the same period. This is not necessarily representative for the ships crossing the Danish EEZ, as it merely describes the quantities that are bunkered locally. Statistics from bunker oil used across Europe gathered by the IMAROS2 project, WP2 Trends and samples, (IMAROS 2) shows a lower proportion of marine gasoil.

For the bunker model, the following assumptions are made:

- The statistics from the IMAROS2 project are used, as they are not biased by what is being sold at a specific location.
- In the future, there might be a significant share of ships running on alternative fuels such as methanol or ammonia. These fuels are generally less hazardous than oil products to the marine environment. The model conservatively assumes that all ships are running on oil also in the future.
- Biofuels are modelled as marine gasoil.

The resulting model is displayed in Table 9-2.

*Table 9-2 Data and estimates on bunkering and bunker tank content from BRISK I and from the BRISK II data collection*

| **Substance** | **Cargo group (representative substance)** | **2024 (excl. shadow fleet)** |
|---|---|---|
| HSFO | 20 (IFO 380) | 30 % |
| VLSFO | 23 (VLSFO) | 44 % |
| ULSFO | 24 (ULSFO) | 4 % |
| Marine gasoil | 21 (Diesel) | 22 % |
| Total | | 100 % |

# 10 Abbreviations

| | |
|---|---|
| AIS | Automatic Identification System |
| DWT | Deadweight tonnage |
| GOF | Gulf of Finland |
| HFO | Heavy fuel oil |
| HSFO | High-sulphur fuel oil |
| IFO | Intermediate fuel oil |
| IMDG code | International Maritime Dangerous Goods code |
| IMO | International Maritime Organization |
| LSFO | Low-sulphur fuel oil |
| MARPOL | The International Convention for the Prevention of Pollution from Ships (*from Marine Pollution*) |
| MTBE | Methyl tert-butyl ether |
| SEBC | Standard European Behaviour Classification |
| SOLAS | International Convention for Safety of Life at Sea |
| ULSFO | Ultra low-sulphur fuel oil |
| VLSFO | Very low-sulphur fuel oil |

# 11 References


| | |
|---|---|
| BRISK, Part 2: Transport, 2012 | Project on sub-regional risk of spill of oil and hazardous substances in the Baltic Sea (BRISK), Model report: Part 2 - Transport of oil and hazardous substances, May 2012. |
| BRISK II, Method note, 2025 | BRISK II, Method note, deliverable D2.1, 2025 |
| BRISK II, Data collection note, 2025 | BRISK II, Data collection note, deliverable D2.2, 2025 |
| BRISK II, Traffic analysis, 2025 | BRISK II, Traffic analysis, deliverable D2.3, 2025 |
| Danish Ministry of Defence, 2007 | Danish Ministry of Defence, *Risikoanalyse: Olie- og kemikalieforurening I danske farvande. Delrapport 5: Olie og kemikalier, klassificering og mængder (Risk analyis: Oil and chemical pollution in Danish waters. Sub-report 5: Oil and chemicals, classification and quantities)*, March 2007 |
| EU, 2008 | European Parliament and the council of the European Union, *Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/200*, 2008 |
| HNS-MS, 2017 | HNS-MS, Final report, part I, 2017 |
| IMO, 1987a | International Maritime Organisation (IMO), *Annex I, Regulations for the Prevention of Pollution by Oil, til International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78)* |
| IMO, 1987b | International Maritime Organisation (IMO), *Annex II, Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk, to International Convention for the Prevention of Pollution from Ships*, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) |
| IMO, 2002 | International Maritime Organisation (IMO), *Amendments to SOLAS chapter VII (Carriage of Dangerous Goods)*, adopted in May 2002 make the IMDG Code mandatory from 1 January 2004 |
| Bonn Agreement et al., 2021 | Bonn Agreement, HELCOM, REMPEC, *Marine HNS response manual*, 2021 |
| IMAROS 2 Project | UCP Knowledge Network, https://civil-protection-knowledge-network.europa.eu/projects/imaros-2 |

# Appendix A Cargo model results

### All areas - Bulk carriers and gas tankers, ingoing ships

• Bulk carrier

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 100.0 | | | | | | | | | | | | 100 | | | | | | |
| 500 | 3,000 | 47.5 | | | | | | | | | | | | 100 | | | | | | |
| 3,000 | 10,000 | 59.5 | | | | | | | | | | | | 100 | | | | | | |
| 10,000 | 25,000 | 58.4 | | | | | | | | | | | | 100 | | | | | | |
| 25,000 | 100,000 | 43.3 | | | | | | | | | | | | 100 | | | | | | |
| 100,000 | - | 96.6 | | | | | | | | | | | | 100 | | | | | | |

• Bulk/oil carrier

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 100.0 | | | | | | | | | | | | 100 | | | | | | |
| 500 | 3,000 | 47.5 | | | | | | | | | | | | 100 | | | | | | |
| 3,000 | 10,000 | 59.5 | | | | | | | | | | | | 100 | | | | | | |
| 10,000 | 25,000 | 58.4 | | | | | | | | | | | | 100 | | | | | | |
| 25,000 | 100,000 | 43.3 | | | | | | | | | | | | 75.0 | | | | 25.0 | | |
| 100,000 | - | 96.6 | | | | | | | | | | | | 75.0 | | | | 25.0 | | |

• Gas tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 55.7 | 100 | | | | | | | | | | | | | | | | | |
| 500 | 3,000 | 55.7 | 100 | | | | | | | | | | | | | | | | | |
| 3,000 | 10,000 | 55.7 | 100 | | | | | | | | | | | | | | | | | |
| 10,000 | 25,000 | 52.1 | 100 | | | | | | | | | | | | | | | | | |
| 25,000 | 100,000 | 32.2 | 100 | | | | | | | | | | | | | | | | | |
| 100,000 | - | 54.9 | 100 | | | | | | | | | | | | | | | | | |

## All areas - Bulk carriers and gas tankers, outgoing ships

• Bulk carrier

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 0.0 | | | | | | | | | | | | 100 | | | | | | |
| 500 | 3,000 | 52.5 | | | | | | | | | | | | 100 | | | | | | |
| 3,000 | 10,000 | 40.5 | | | | | | | | | | | | 100 | | | | | | |
| 10,000 | 25,000 | 41.6 | | | | | | | | | | | | 100 | | | | | | |
| 25,000 | 100,000 | 56.7 | | | | | | | | | | | | 100 | | | | | | |
| 100,000 | - | 3.4 | | | | | | | | | | | | 100 | | | | | | |

• Bulk/oil carrier

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 0.0 | | | | | | | | | | | | 100 | | | | | | |
| 500 | 3,000 | 52.5 | | | | | | | | | | | | 100 | | | | | | |
| 3,000 | 10,000 | 40.5 | | | | | | | | | | | | 100 | | | | | | |
| 10,000 | 25,000 | 41.6 | | | | | | | | | | | | 100 | | | | | | |
| 25,000 | 100,000 | 56.7 | | | | | | | | | | | | 100 | | | | | | |
| 100,000 | - | 3.4 | | | | | | | | | | | | 100 | | | | | | |

• Gas tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 44.3 | 100 | | | | | | | | | | | | | | | | | |
| 500 | 3,000 | 44.3 | 100 | | | | | | | | | | | | | | | | | |
| 3,000 | 10,000 | 44.3 | 100 | | | | | | | | | | | | | | | | | |
| 10,000 | 25,000 | 47.9 | 100 | | | | | | | | | | | | | | | | | |
| 25,000 | 100,000 | 67.8 | 100 | | | | | | | | | | | | | | | | | |
| 100,000 | - | 60.8 | 100 | | | | | | | | | | | | | | | | | |

## Area 1 - Bay of Bothnia, ingoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 500 | 3,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 3,000 | 10,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 10,000 | 25,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 25,000 | 100,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 100,000 | - | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 500 | 3,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 3,000 | 10,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 10,000 | 25,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 25,000 | 100,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 100,000 | - | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 500 | 3,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 3,000 | 10,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 10,000 | 25,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 25,000 | 100,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 100,000 | - | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 500 | 3,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 3,000 | 10,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 10,000 | 25,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 25,000 | 100,000 | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |
| 100,000 | - | 90.3 | | | | | | | 9.1 | | | | | | | 14.8 | 58.6 | 15.7 | 1.5 | 0.2 |

## Area 1 - Bay of Bothnia, outgoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 500 | 3,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 3,000 | 10,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 10,000 | 25,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 25,000 | 100,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 100,000 | - | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 500 | 3,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 3,000 | 10,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 10,000 | 25,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 25,000 | 100,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 100,000 | - | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 500 | 3,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 3,000 | 10,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 10,000 | 25,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 25,000 | 100,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 100,000 | - | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 500 | 3,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 3,000 | 10,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 10,000 | 25,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 25,000 | 100,000 | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |
| 100,000 | - | 10.9 | | | | | | | 72.7 | | | | | | | | 20.5 | 6.8 | | |

## Area 2 - Bothnian Sea and West of Gotland, ingoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 76.4 | | | | | | | 28.8 | 5.7 | | | | | 10.5 | 5.9 | 41.9 | 6.4 | 0.6 | 0.1 |
| 500 | 3,000 | 76.4 | | | | | | | 28.8 | 5.7 | | | | | 10.5 | 5.9 | 41.9 | 6.4 | 0.6 | 0.1 |
| 3,000 | 10,000 | 76.4 | | | | | | | 28.8 | 5.7 | | | | | 10.5 | 5.9 | 41.9 | 6.4 | 0.6 | 0.1 |
| 10,000 | 25,000 | 83.6 | | 0.1 | | | | | 5.3 | 16.0 | | | | | 10.5 | 5.9 | 50.5 | 10.9 | 0.6 | 0.1 |
| 25,000 | 100,000 | 88.6 | | | | | | | 3.6 | | | | | | 10.5 | 5.9 | 72.8 | 6.4 | 0.6 | 0.1 |
| 100,000 | - | 88.6 | | | | | | | 3.6 | | | | | | 10.5 | 5.9 | 72.8 | 6.4 | 0.6 | 0.1 |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 77.3 | | 14.0 | | | | | 3.6 | 26.0 | | | | | 10.5 | 5.9 | 32.8 | 6.4 | 0.6 | 0.1 |
| 500 | 3,000 | 77.3 | | 14.0 | | | | | 3.6 | 26.0 | | | | | 10.5 | 5.9 | 32.8 | 6.4 | 0.6 | 0.1 |
| 3,000 | 10,000 | 74.8 | 4.0 | 3.3 | | | | | 12.4 | 24.0 | | | | | 10.5 | 5.9 | 32.8 | 6.4 | 0.6 | 0.1 |
| 10,000 | 25,000 | 74.8 | | 4.7 | | | | | 10.6 | 22.2 | | | | | 16.7 | 5.9 | 32.8 | 6.4 | 0.6 | 0.1 |
| 25,000 | 100,000 | 74.8 | | 4.7 | | | | | 10.6 | 22.2 | | | | | 16.7 | 5.9 | 32.8 | 6.4 | 0.6 | 0.1 |
| 100,000 | - | 74.8 | | 4.7 | | | | | 10.6 | 22.2 | | | | | 16.7 | 5.9 | 32.8 | 6.4 | 0.6 | 0.1 |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 81.8 | | | | | | | 3.6 | | | | | | 10.5 | 5.9 | 32.8 | 6.4 | 0.6 | 0.1 |
| 500 | 3,000 | 81.8 | | | | | | | 3.6 | | | | | | 10.5 | 28.3 | 50.4 | 6.4 | 0.6 | 0.1 |
| 3,000 | 10,000 | 81.8 | | | | | | | 3.6 | | | | | | 10.5 | 29.9 | 44.4 | 10.8 | 0.6 | 0.1 |
| 10,000 | 25,000 | 56.7 | | | | | | | 3.6 | | | | | | 10.5 | 5.9 | 72.8 | 6.4 | 0.6 | 0.1 |
| 25,000 | 100,000 | 65.4 | | | | | | | 3.6 | | | | | | 10.5 | 5.9 | 72.8 | 6.4 | 0.6 | 0.1 |
| 100,000 | - | 65.4 | | | | | | | 3.6 | | | | | | 10.5 | 5.9 | 32.8 | 6.4 | 0.6 | 0.1 |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 57.7 | | | | | | | 3.6 | | | | | | 10.5 | 24.8 | 38.0 | 22.3 | 0.6 | 0.1 |
| 500 | 3,000 | 57.7 | | | | | | | 3.6 | | | | | | 10.5 | 24.8 | 38.0 | 22.3 | 0.6 | 0.1 |
| 3,000 | 10,000 | 57.7 | | | | | | | 3.6 | | | | | | 10.5 | 24.8 | 38.0 | 22.3 | 0.6 | 0.1 |
| 10,000 | 25,000 | 93.0 | | | | | | | 3.6 | | | | | | 10.5 | 45.9 | 32.8 | 6.4 | 0.6 | 0.1 |
| 25,000 | 100,000 | 87.6 | | | | | | | 3.6 | | | | | | 50.5 | 5.9 | 32.8 | 6.4 | 0.6 | 0.1 |
| 100,000 | - | 87.6 | | | | | | | 3.6 | | | | | | 46.9 | 7.0 | 35.4 | 6.4 | 0.6 | 0.1 |

## Area 2 - Bothnian Sea and West of Gotland, outgoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 23.9 | | 0.2 | | | | 6.6 | 54.3 | 5.7 | | | | | 0.1 | 1.9 | 20.6 | 10.0 | 0.4 | |
| 500 | 3,000 | 23.9 | | 0.2 | | | | 6.6 | 54.3 | 5.7 | | | | | 0.1 | 1.9 | 20.6 | 10.0 | 0.4 | |
| 3,000 | 10,000 | 23.9 | | 0.2 | | | | 6.6 | 54.3 | 5.7 | | | | | 0.1 | 1.9 | 20.6 | 10.0 | 0.4 | |
| 10,000 | 25,000 | 16.7 | | 0.3 | | | | 6.6 | 30.8 | 16.0 | | | | | 0.1 | 1.9 | 29.2 | 14.5 | 0.4 | |
| 25,000 | 100,000 | 11.8 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 1.9 | 51.5 | 10.0 | 0.4 | |
| 100,000 | - | 11.8 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 1.9 | 51.5 | 10.0 | 0.4 | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 23.0 | | 0.2 | | | | 6.6 | 54.3 | 5.7 | | | | | 0.1 | 1.9 | 20.6 | 10.0 | 0.4 | |
| 500 | 3,000 | 23.0 | | 0.2 | | | | 6.6 | 54.3 | 5.7 | | | | | 0.1 | 1.9 | 20.6 | 10.0 | 0.4 | |
| 3,000 | 10,000 | 25.5 | | 0.2 | | | | 6.6 | 54.3 | 5.7 | | | | | 0.1 | 1.9 | 20.6 | 10.0 | 0.4 | |
| 10,000 | 25,000 | 25.5 | | 0.3 | | | | 6.6 | 30.8 | 16.0 | | | | | 0.1 | 1.9 | 29.2 | 14.5 | 0.4 | |
| 25,000 | 100,000 | 25.5 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 1.9 | 51.5 | 10.0 | 0.4 | |
| 100,000 | - | 25.5 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 1.9 | 51.5 | 10.0 | 0.4 | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 18.5 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 1.9 | 11.5 | 10.0 | 0.4 | |
| 500 | 3,000 | 18.5 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 41.9 | 11.5 | 10.0 | 0.4 | |
| 3,000 | 10,000 | 18.5 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 6.9 | 46.5 | 10.0 | 0.4 | |
| 10,000 | 25,000 | 43.7 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 21.4 | 25.2 | 16.9 | 0.4 | |
| 25,000 | 100,000 | 34.9 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 32.7 | 16.1 | 14.6 | 0.4 | |
| 100,000 | - | 34.9 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 1.9 | 11.5 | 10.0 | 0.4 | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 42.7 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 1.9 | 11.5 | 10.0 | 0.4 | |
| 500 | 3,000 | 42.7 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 1.9 | 11.5 | 10.0 | 0.4 | |
| 3,000 | 10,000 | 42.7 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 41.5 | 12.0 | 10.0 | 0.4 | |
| 10,000 | 25,000 | 7.3 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 41.5 | 12.0 | 10.0 | 0.4 | |
| 25,000 | 100,000 | 12.7 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 41.9 | 11.5 | 10.0 | 0.4 | |
| 100,000 | - | 12.7 | | 0.2 | | | | 6.6 | 29.1 | | | | | | 0.1 | 41.9 | 11.5 | 10.0 | 0.4 | |

## Area 3 - Eastern Gulf of Finland, ingoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 46.7 | | 35.0 | | | | | | 65.0 | | | | | | | | | | |
| 500 | 3,000 | 46.7 | | 35.0 | | | | | | 65.0 | | | | | | | | | | |
| 3,000 | 10,000 | 58.0 | 9.8 | 8.3 | | | | | 21.9 | 60.0 | | | | | | | | | | |
| 10,000 | 25,000 | 55.5 | | 11.8 | | | | | 17.3 | 55.4 | | | | | 15.5 | | | | | |
| 25,000 | 100,000 | 46.0 | | 0.9 | | | | | 9.7 | 8.8 | | | | | 1.8 | 0.6 | 65.6 | 12.5 | | |
| 100,000 | - | 57.2 | | 0.9 | | | | | 9.7 | 8.8 | | | | | 1.8 | 0.6 | 65.6 | 12.5 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 60.8 | | 35.0 | | | | | | 65.0 | | | | | | | | | | |
| 500 | 3,000 | 60.8 | | 35.0 | | | | | | 65.0 | | | | | | | | | | |
| 3,000 | 10,000 | 54.5 | 9.8 | 8.3 | | | | | 21.9 | 60.0 | | | | | | | | | | |
| 10,000 | 25,000 | 54.5 | | 11.8 | | | | | 17.3 | 55.4 | | | | | 15.5 | | | | | |
| 25,000 | 100,000 | 54.5 | | 11.8 | | | | | 17.3 | 55.4 | | | | | 15.5 | | | | | |
| 100,000 | - | 54.5 | | 11.8 | | | | | 17.3 | 55.4 | | | | | 15.5 | | | | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 59.3 | | | | | | | | | | | | | | | 74.5 | 25.5 | | |
| 500 | 3,000 | 59.3 | | | | | | | | | | | | | | | 74.5 | 25.5 | | |
| 3,000 | 10,000 | 59.3 | | | | | | | | | | | | | | | 74.5 | 25.5 | | |
| 10,000 | 25,000 | 67.9 | | | | | | | | | | | | | | | 74.5 | 25.5 | | |
| 25,000 | 100,000 | 39.9 | | | | | | | | | | | | | | | 74.5 | 25.5 | | |
| 100,000 | - | 85.9 | | | | | | | | | | | | | 98.6 | | 1.4 | | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 26.4 | | | | | | | | | | | | | 5.6 | | 61.0 | 33.3 | | |
| 500 | 3,000 | 26.4 | | | | | | | | | | | | | 5.6 | | 61.0 | 33.3 | | |
| 3,000 | 10,000 | 26.4 | | | | | | | | | | | | | 5.6 | | 61.0 | 33.3 | | |
| 10,000 | 25,000 | 31.8 | | | | | | | | | | | | | 5.6 | | 61.0 | 33.3 | | |
| 25,000 | 100,000 | 34.4 | | | | | | | | | | | | | 5.6 | | 61.0 | 33.3 | | |
| 100,000 | - | 22.3 | | | | | | | | | | | | | 95.2 | 4.8 | | | | |

## Area 3 - Eastern Gulf of Finland, outgoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 53.3 | | 81.5 | | | | | | 18.5 | | | | | | | | | | |
| 500 | 3,000 | 53.3 | | 81.5 | | | | | | 18.5 | | | | | | | | | | |
| 3,000 | 10,000 | 42.0 | 9.8 | 24.3 | | | | | 29.4 | 28.4 | | 8.2 | | | | | | | | |
| 10,000 | 25,000 | 44.5 | | 6.3 | | | | | 86.3 | 3.6 | | | | | 1.8 | 2.0 | | | | |
| 25,000 | 100,000 | 54.0 | | 6.1 | | | | | 21.2 | 46.2 | | 0.9 | | | 1.2 | 1.0 | 3.5 | 19.8 | | |
| 100,000 | - | 42.8 | | 6.1 | | | | | 21.2 | 46.2 | | 0.9 | | | 1.2 | 1.0 | 3.5 | 19.8 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 39.2 | | 81.5 | | | | | | 18.5 | | | | | | | | | | |
| 500 | 3,000 | 39.2 | | 81.5 | | | | | | 18.5 | | | | | | | | | | |
| 3,000 | 10,000 | 45.5 | 9.8 | 24.3 | | | | | 29.4 | 28.4 | | 8.2 | | | | | | | | |
| 10,000 | 25,000 | 45.5 | | 6.3 | | | | | 86.3 | 3.6 | | | | | 1.8 | 2.0 | | | | |
| 25,000 | 100,000 | 45.5 | | 6.1 | | | | | 21.2 | 46.2 | | 0.9 | | | 1.2 | 1.0 | 3.5 | 19.8 | | |
| 100,000 | - | 45.5 | | 6.1 | | | | | 21.2 | 46.2 | | 0.9 | | | 1.2 | 1.0 | 3.5 | 19.8 | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 40.7 | | | | | | | | | | | | | | 56.7 | | 43.3 | | |
| 500 | 3,000 | 40.7 | | | | | | | | | | | | | | 56.7 | | 43.3 | | |
| 3,000 | 10,000 | 40.7 | | | | | | | | | | | | | | 56.7 | | 43.3 | | |
| 10,000 | 25,000 | 32.1 | | | | | | | | | | | | | | | #### | | | |
| 25,000 | 100,000 | 60.1 | | | | | | | | | | | | | 11.9 | 6.6 | 34.4 | 47.1 | | |
| 100,000 | - | 14.1 | | | | | | | | | | | | | 35.1 | | 14.1 | 50.8 | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 73.6 | | 0.4 | | | | | | | | | | | 1.3 | 4.4 | 69.8 | 24.1 | | |
| 500 | 3,000 | 73.6 | | 0.4 | | | | | | | | | | | 1.3 | 4.4 | 69.8 | 24.1 | | |
| 3,000 | 10,000 | 73.6 | | 0.4 | | | | | | | | | | | 1.3 | 4.4 | 69.8 | 24.1 | | |
| 10,000 | 25,000 | 68.2 | | 0.4 | | | | | | | | | | | 1.3 | 4.4 | 69.8 | 24.1 | | |
| 25,000 | 100,000 | 65.6 | | 0.4 | | | | | | | | | | | 1.3 | 4.4 | 69.8 | 24.1 | | |
| 100,000 | - | 77.7 | | | | | | | | | | | | | 83.0 | 13.1 | 2.5 | 1.5 | | |

## Area 4 - Western Gulf of Finland and Klints Bank, ingoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 61.8 | 0.1 | 21.0 | | | | | | 39.0 | | | | | 21.1 | | 18.7 | 0.2 | | |
| 500 | 3,000 | 61.8 | 0.1 | 21.0 | | | | | | 39.0 | | | | | 21.1 | | 18.7 | 0.2 | | |
| 3,000 | 10,000 | 68.6 | 6.0 | 5.0 | | | | | 13.1 | 36.0 | | | | | 21.1 | | 18.7 | 0.2 | | |
| 10,000 | 25,000 | 67.1 | 0.1 | 7.1 | | | | | 10.4 | 33.3 | | | | | 30.3 | | 18.7 | 0.2 | | |
| 25,000 | 100,000 | 61.4 | 0.1 | 0.5 | | | | | 5.8 | 5.3 | | | | | 22.1 | 0.4 | 58.1 | 7.7 | | |
| 100,000 | - | 68.2 | 0.1 | 0.5 | | | | | 5.8 | 5.3 | | | | | 22.1 | 0.4 | 58.1 | 7.7 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 70.3 | 0.1 | 21.0 | | | | | | 39.0 | | | | | 21.1 | | 18.7 | 0.2 | | |
| 500 | 3,000 | 70.3 | 0.1 | 21.0 | | | | | | 39.0 | | | | | 21.1 | | 18.7 | 0.2 | | |
| 3,000 | 10,000 | 66.5 | 6.0 | 5.0 | | | | | 13.1 | 36.0 | | | | | 21.1 | | 18.7 | 0.2 | | |
| 10,000 | 25,000 | 66.5 | 0.1 | 7.1 | | | | | 10.4 | 33.3 | | | | | 30.3 | | 18.7 | 0.2 | | |
| 25,000 | 100,000 | 66.5 | 0.1 | 7.1 | | | | | 10.4 | 33.3 | | | | | 30.3 | | 18.7 | 0.2 | | |
| 100,000 | - | 66.5 | 0.1 | 7.1 | | | | | 10.4 | 33.3 | | | | | 30.3 | | 18.7 | 0.2 | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 69.4 | 0.1 | | | | | | | | | | | | 21.1 | | 63.4 | 15.5 | | |
| 500 | 3,000 | 69.4 | 0.1 | | | | | | | | | | | | 21.1 | | 63.4 | 15.5 | | |
| 3,000 | 10,000 | 69.4 | 0.1 | | | | | | | | | | | | 21.1 | | 63.4 | 15.5 | | |
| 10,000 | 25,000 | 74.6 | 0.1 | | | | | | | | | | | | 21.1 | | 63.4 | 15.5 | | |
| 25,000 | 100,000 | 57.7 | 0.1 | | | | | | | | | | | | 21.1 | | 63.4 | 15.5 | | |
| 100,000 | - | 85.4 | 0.1 | | | | | | | | | | | | 80.2 | | 19.6 | 0.2 | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 49.6 | 0.1 | | | | | | | | | | | | 24.4 | | 55.3 | 20.2 | | |
| 500 | 3,000 | 49.6 | 0.1 | | | | | | | | | | | | 24.4 | | 55.3 | 20.2 | | |
| 3,000 | 10,000 | 49.6 | 0.1 | | | | | | | | | | | | 24.4 | | 55.3 | 20.2 | | |
| 10,000 | 25,000 | 52.9 | 0.1 | | | | | | | | | | | | 24.4 | | 55.3 | 20.2 | | |
| 25,000 | 100,000 | 54.4 | 0.1 | | | | | | | | | | | | 24.4 | | 55.3 | 20.2 | | |
| 100,000 | - | 47.2 | 0.1 | | | | | | | | | | | | 78.2 | 2.9 | 18.7 | 0.2 | | |

## Area 4 - Western Gulf of Finland and Klints Bank, outgoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 37.9 | 0.1 | 49.3 | | | | 13.2 | | 11.1 | | | | | 0.3 | 3.9 | 6.6 | 14.5 | 0.8 | 0.1 |
| 500 | 3,000 | 37.9 | 0.1 | 49.3 | | | | 13.2 | | 11.1 | | | | | 0.3 | 3.9 | 6.6 | 14.5 | 0.8 | 0.1 |
| 3,000 | 10,000 | 31.1 | 5.9 | 15.0 | | | | 13.2 | 17.6 | 17.0 | | 4.9 | | | 0.3 | 3.9 | 6.6 | 14.5 | 0.8 | 0.1 |
| 10,000 | 25,000 | 32.6 | 0.1 | 4.2 | | | | 13.2 | 51.8 | 2.2 | | | | | 1.3 | 5.1 | 6.6 | 14.5 | 0.8 | 0.1 |
| 25,000 | 100,000 | 38.3 | 0.1 | 4.1 | | | | 13.2 | 12.7 | 27.7 | | 0.5 | | | 1.0 | 4.5 | 8.7 | 26.4 | 0.8 | 0.1 |
| 100,000 | - | 31.6 | 0.1 | 4.1 | | | | 13.2 | 12.7 | 27.7 | | 0.5 | | | 1.0 | 4.5 | 8.7 | 26.4 | 0.8 | 0.1 |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 29.5 | 0.1 | 49.3 | | | | 13.2 | | 11.1 | | | | | 0.3 | 3.9 | 6.6 | 14.5 | 0.8 | 0.1 |
| 500 | 3,000 | 29.5 | 0.1 | 49.3 | | | | 13.2 | | 11.1 | | | | | 0.3 | 3.9 | 6.6 | 14.5 | 0.8 | 0.1 |
| 3,000 | 10,000 | 33.2 | 5.9 | 15.0 | | | | 13.2 | 17.6 | 17.0 | | 4.9 | | | 0.3 | 3.9 | 6.6 | 14.5 | 0.8 | 0.1 |
| 10,000 | 25,000 | 33.2 | 0.1 | 4.2 | | | | 13.2 | 51.8 | 2.2 | | | | | 1.3 | 5.1 | 6.6 | 14.5 | 0.8 | 0.1 |
| 25,000 | 100,000 | 33.2 | 0.1 | 4.1 | | | | 13.2 | 12.7 | 27.7 | | 0.5 | | | 1.0 | 4.5 | 8.7 | 26.4 | 0.8 | 0.1 |
| 100,000 | - | 33.2 | 0.1 | 4.1 | | | | 13.2 | 12.7 | 27.7 | | 0.5 | | | 1.0 | 4.5 | 8.7 | 26.4 | 0.8 | 0.1 |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 30.3 | 0.1 | 0.4 | | | | 13.2 | | | | | | | 0.3 | 37.9 | 6.6 | 40.5 | 0.8 | 0.1 |
| 500 | 3,000 | 30.3 | 0.1 | 0.4 | | | | 13.2 | | | | | | | 0.3 | 37.9 | 6.6 | 40.5 | 0.8 | 0.1 |
| 3,000 | 10,000 | 30.3 | 0.1 | 0.4 | | | | 13.2 | | | | | | | 0.3 | 37.9 | 6.6 | 40.5 | 0.8 | 0.1 |
| 10,000 | 25,000 | 25.2 | 0.1 | 0.4 | | | | 13.2 | | | | | | | 0.3 | 3.9 | 66.6 | 14.5 | 0.8 | 0.1 |
| 25,000 | 100,000 | 42.0 | 0.1 | 0.4 | | | | 13.2 | | | | | | | 7.4 | 7.9 | 27.2 | 42.8 | 0.8 | 0.1 |
| 100,000 | - | 14.4 | 0.1 | 0.4 | | | | 13.2 | | | | | | | 21.3 | 3.9 | 15.1 | 45.0 | 0.8 | 0.1 |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 50.1 | 0.1 | 0.7 | | | | 13.2 | | | | | | | 1.1 | 6.5 | 48.5 | 29.0 | 0.8 | 0.1 |
| 500 | 3,000 | 50.1 | 0.1 | 0.7 | | | | 13.2 | | | | | | | 1.1 | 6.5 | 48.5 | 29.0 | 0.8 | 0.1 |
| 3,000 | 10,000 | 50.1 | 0.1 | 0.7 | | | | 13.2 | | | | | | | 1.1 | 6.5 | 48.5 | 29.0 | 0.8 | 0.1 |
| 10,000 | 25,000 | 46.8 | 0.1 | 0.7 | | | | 13.2 | | | | | | | 1.1 | 6.5 | 48.5 | 29.0 | 0.8 | 0.1 |
| 25,000 | 100,000 | 45.3 | 0.1 | 0.7 | | | | 13.2 | | | | | | | 1.1 | 6.5 | 48.5 | 29.0 | 0.8 | 0.1 |
| 100,000 | - | 52.5 | 0.1 | 0.4 | | | | 13.2 | | | | | | | 50.1 | 11.7 | 8.1 | 15.4 | 0.8 | 0.1 |

## Area 5 - Eastern Baltic Proper, ingoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 73.2 | | | | | | | 3.8 | 12.0 | | | | 2.7 | 13.5 | | 48.7 | 19.3 | | |
| 500 | 3,000 | 73.2 | | | | | | | 3.8 | 12.0 | | | | 2.7 | 13.5 | | 48.7 | 19.3 | | |
| 3,000 | 10,000 | 73.2 | | | | | | | 3.8 | 12.0 | | | | 2.7 | 13.5 | | 48.7 | 19.3 | | |
| 10,000 | 25,000 | 82.0 | | | | | | | 1.1 | 3.4 | | | | | 1.6 | | 50.3 | 43.7 | 0.3 | |
| 25,000 | 100,000 | 87.4 | | | | | | | | 2.1 | | | | 1.1 | | | 55.3 | 41.6 | | |
| 100,000 | - | 87.4 | | | | | | | | 2.1 | | | | 1.1 | | | 55.3 | 41.6 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 69.4 | | | | | | | | 13.4 | | | | | | | 85.3 | 1.3 | | |
| 500 | 3,000 | 69.4 | | | | | | | | 13.4 | | | | | | | 85.3 | 1.3 | | |
| 3,000 | 10,000 | 69.4 | | | | | | | | 13.4 | | | | | | | 85.3 | 1.3 | | |
| 10,000 | 25,000 | 75.3 | | | | | | | | 13.4 | | | | | | | 83.2 | 3.5 | 0.3 | |
| 25,000 | 100,000 | 97.7 | | | | | | | | | | | | | | | 100 | | | |
| 100,000 | - | 97.7 | | | | | | | | | | | | | | | 100 | | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 82.8 | | | | | | | | | | | | | | | 98.7 | 1.3 | | |
| 500 | 3,000 | 82.8 | | | | | | | | | | | | | | | 98.7 | 1.3 | | |
| 3,000 | 10,000 | 82.8 | | | | | | | | | | | | | | | 98.7 | 1.3 | | |
| 10,000 | 25,000 | 73.1 | | | | | | | | | | | | | | | 89.1 | 10.9 | 0.3 | |
| 25,000 | 100,000 | 58.4 | | | | | | | | | | | | | | | 50.0 | 50.0 | | |
| 100,000 | - | 58.4 | | | | | | | | | | | | | | | 50.0 | 50.0 | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 88.4 | | | | | | | | | | | | | | | 48.7 | 51.3 | | |
| 500 | 3,000 | 88.4 | | | | | | | | | | | | | | | 48.7 | 51.3 | | |
| 3,000 | 10,000 | 88.4 | | | | | | | | | | | | | | | 48.7 | 51.3 | | |
| 10,000 | 25,000 | 94.3 | | | | | | | | | | | | | | | 46.5 | 53.5 | 0.3 | |
| 25,000 | 100,000 | 95.3 | | | | | | | | | | | | | | | 50.0 | 50.0 | | |
| 100,000 | - | 95.3 | | | | | | | | | | | | | | | 100 | | | |

## Area 5 - Eastern Baltic Proper, outgoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 40.7 | | | | | | 27.7 | | 8.5 | | | | | 11.1 | | 52.7 | | | |
| 500 | 3,000 | 40.7 | | | | | | 27.7 | | 8.5 | | | | | 11.1 | | 52.7 | | | |
| 3,000 | 10,000 | 40.7 | | | | | | 27.7 | | 8.5 | | | | | 11.1 | | 52.7 | | | |
| 10,000 | 25,000 | 22.9 | | | | | | | | 3.1 | | | | | 18.3 | | 78.6 | | | |
| 25,000 | 100,000 | 13.5 | | | | | | | 0.1 | 0.2 | | | | 2.6 | 1.2 | | 62.4 | 33.4 | | |
| 100,000 | - | 13.5 | | | | | | | 0.1 | 0.2 | | | | 2.6 | 1.2 | | 62.4 | 33.4 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 30.6 | | | | | | 28.6 | | 7.5 | | | | | 8.6 | | 55.4 | | | |
| 500 | 3,000 | 30.6 | | | | | | 28.6 | | 7.5 | | | | | 8.6 | | 55.4 | | | |
| 3,000 | 10,000 | 30.6 | | | | | | 28.6 | | 7.5 | | | | | 8.6 | | 55.4 | | | |
| 10,000 | 25,000 | 38.2 | | | | | | 5.6 | | | | | | | 31.8 | | 62.6 | | | |
| 25,000 | 100,000 | 3.2 | | | | | | | | | | | | 8.7 | | | 50.0 | 41.3 | | |
| 100,000 | - | 3.2 | | | | | | | | | | | | 8.7 | | | 50.0 | 41.3 | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 23.6 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |
| 500 | 3,000 | 23.6 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |
| 3,000 | 10,000 | 23.6 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |
| 10,000 | 25,000 | 39.2 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |
| 25,000 | 100,000 | 54.8 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |
| 100,000 | - | 54.8 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 17.9 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |
| 500 | 3,000 | 17.9 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |
| 3,000 | 10,000 | 17.9 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |
| 10,000 | 25,000 | 17.9 | | | | | | | | | | | | | | | 98.0 | 2.0 | | |
| 25,000 | 100,000 | 17.9 | | | | | | | | | | | | 4.1 | | | 48.0 | 47.9 | | |
| 100,000 | - | 17.9 | | | | | | | | | | | | 4.1 | | | 48.0 | 47.9 | | |

## Area 6 - South of Gotland, ingoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 58.6 | | 21.0 | | | | | 6.0 | 41.9 | | | | 0.4 | 7.3 | 1.1 | 18.1 | 4.1 | 0.1 | |
| 500 | 3,000 | 58.6 | | 21.0 | | | | | 6.0 | 41.9 | | | | 0.4 | 7.3 | 1.1 | 18.1 | 4.1 | 0.1 | |
| 3,000 | 10,000 | 65.4 | 5.9 | 5.0 | | | | | 19.1 | 38.9 | | | | 0.4 | 7.3 | 1.1 | 18.1 | 4.1 | 0.1 | |
| 10,000 | 25,000 | 66.6 | | 7.1 | | | | | 11.6 | 36.8 | | | | | 14.8 | 1.1 | 19.9 | 8.6 | 0.2 | |
| 25,000 | 100,000 | 62.6 | | 0.5 | | | | | 6.5 | 5.6 | | | | 0.2 | 6.3 | 1.5 | 64.3 | 15.0 | 0.1 | |
| 100,000 | - | 69.3 | | 0.5 | | | | | 6.5 | 5.6 | | | | 0.2 | 6.3 | 1.5 | 64.3 | 15.0 | 0.1 | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 66.7 | | 23.6 | | | | | 0.7 | 45.9 | | | | | 5.3 | 1.1 | 21.9 | 1.4 | 0.1 | |
| 500 | 3,000 | 66.7 | | 23.6 | | | | | 0.7 | 45.9 | | | | | 5.3 | 1.1 | 21.9 | 1.4 | 0.1 | |
| 3,000 | 10,000 | 62.5 | 6.7 | 5.6 | | | | | 15.4 | 42.5 | | | | | 5.3 | 1.1 | 21.9 | 1.4 | 0.1 | |
| 10,000 | 25,000 | 63.3 | | 7.9 | | | | | 12.4 | 39.4 | | | | | 15.7 | 1.1 | 21.5 | 1.7 | 0.2 | |
| 25,000 | 100,000 | 66.7 | | 7.9 | | | | | 12.4 | 37.4 | | | | | 15.7 | 1.1 | 24.1 | 1.2 | 0.1 | |
| 100,000 | - | 66.7 | | 7.9 | | | | | 12.4 | 37.4 | | | | | 15.7 | 1.1 | 24.1 | 1.2 | 0.1 | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 68.6 | | | | | | | 0.7 | | | | | | 5.3 | 1.1 | 68.6 | 16.7 | 0.1 | |
| 500 | 3,000 | 68.6 | | | | | | | 0.7 | | | | | | 5.3 | 5.3 | 71.9 | 16.7 | 0.1 | |
| 3,000 | 10,000 | 68.6 | | | | | | | 0.7 | | | | | | 5.3 | 5.6 | 70.8 | 17.5 | 0.1 | |
| 10,000 | 25,000 | 67.6 | | | | | | | 0.7 | | | | | | 5.3 | 1.1 | 74.6 | 18.1 | 0.2 | |
| 25,000 | 100,000 | 50.2 | | | | | | | 0.7 | | | | | | 5.3 | 1.1 | 68.8 | 24.0 | 0.1 | |
| 100,000 | - | 77.9 | | | | | | | 0.7 | | | | | | 64.4 | 1.1 | 17.4 | 8.7 | 0.1 | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 45.2 | | | | | | | 0.7 | | | | | | 8.6 | 4.6 | 54.0 | 31.9 | 0.1 | |
| 500 | 3,000 | 45.2 | | | | | | | 0.7 | | | | | | 8.6 | 4.6 | 54.0 | 31.9 | 0.1 | |
| 3,000 | 10,000 | 45.2 | | | | | | | 0.7 | | | | | | 8.6 | 4.6 | 54.0 | 31.9 | 0.1 | |
| 10,000 | 25,000 | 56.0 | | | | | | | 0.7 | | | | | | 8.6 | 8.6 | 52.7 | 29.2 | 0.2 | |
| 25,000 | 100,000 | 56.6 | | | | | | | 0.7 | | | | | | 16.1 | 1.1 | 53.2 | 28.7 | 0.1 | |
| 100,000 | - | 49.4 | | | | | | | 0.7 | | | | | | 69.2 | 4.2 | 24.6 | 1.2 | 0.1 | |

## Area 6 - South of Gotland, outgoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 43.5 | | 49.0 | | | | 7.5 | 10.2 | 13.4 | | | | | 1.7 | 1.0 | 12.8 | 4.1 | 0.2 | |
| 500 | 3,000 | 43.5 | | 49.0 | | | | 7.5 | 10.2 | 13.4 | | | | | 1.7 | 1.0 | 12.8 | 4.1 | 0.2 | |
| 3,000 | 10,000 | 36.7 | 5.9 | 14.7 | | | | 7.5 | 27.8 | 19.4 | | 4.9 | | | 1.7 | 1.0 | 12.8 | 4.1 | 0.2 | |
| 10,000 | 25,000 | 34.2 | | 3.9 | | | | 3.3 | 57.5 | 5.6 | | | | | 3.9 | 2.2 | 18.3 | 5.0 | 0.2 | |
| 25,000 | 100,000 | 37.6 | | 3.8 | | | | 3.3 | 18.2 | 27.7 | | 0.5 | | 0.4 | 1.0 | 1.6 | 22.2 | 21.1 | 0.2 | |
| 100,000 | - | 30.8 | | 3.8 | | | | 3.3 | 18.2 | 27.7 | | 0.5 | | 0.4 | 1.0 | 1.6 | 22.2 | 21.1 | 0.2 | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 33.4 | | 49.0 | | | | 7.6 | 10.2 | 13.3 | | | | | 1.4 | 1.0 | 13.2 | 4.1 | 0.2 | |
| 500 | 3,000 | 33.4 | | 49.0 | | | | 7.6 | 10.2 | 13.3 | | | | | 1.4 | 1.0 | 13.2 | 4.1 | 0.2 | |
| 3,000 | 10,000 | 37.6 | 5.9 | 14.7 | | | | 7.6 | 27.8 | 19.2 | | 4.9 | | | 1.4 | 1.0 | 13.2 | 4.1 | 0.2 | |
| 10,000 | 25,000 | 38.7 | | 3.9 | | | | 4.1 | 57.5 | 5.2 | | | | | 5.9 | 2.2 | 15.9 | 5.0 | 0.2 | |
| 25,000 | 100,000 | 33.5 | | 3.8 | | | | 3.3 | 18.2 | 27.7 | | 0.5 | | 1.3 | 0.8 | 1.6 | 20.3 | 22.3 | 0.2 | |
| 100,000 | - | 33.5 | | 3.8 | | | | 3.3 | 18.2 | 27.7 | | 0.5 | | 1.3 | 0.8 | 1.6 | 20.3 | 22.3 | 0.2 | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 32.3 | | 0.1 | | | | 3.3 | 5.5 | | | | | | 0.1 | 35.0 | 17.9 | 30.4 | 0.2 | |
| 500 | 3,000 | 32.3 | | 0.1 | | | | 3.3 | 5.5 | | | | | | 0.1 | 42.5 | 17.9 | 30.4 | 0.2 | |
| 3,000 | 10,000 | 32.3 | | 0.1 | | | | 3.3 | 5.5 | | | | | | 0.1 | 35.9 | 24.5 | 30.4 | 0.2 | |
| 10,000 | 25,000 | 34.3 | | 0.1 | | | | 3.3 | 5.5 | | | | | | 0.1 | 4.6 | 80.5 | 5.7 | 0.2 | |
| 25,000 | 100,000 | 51.8 | | 0.1 | | | | 3.3 | 5.5 | | | | | | 7.2 | 10.7 | 39.4 | 33.5 | 0.2 | |
| 100,000 | - | 24.1 | | 0.1 | | | | 3.3 | 5.5 | | | | | | 21.1 | 1.0 | 26.3 | 34.9 | 0.2 | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 55.8 | | 0.4 | | | | 3.3 | 5.5 | | | | | | 0.9 | 3.6 | 59.8 | 18.9 | 0.2 | |
| 500 | 3,000 | 55.8 | | 0.4 | | | | 3.3 | 5.5 | | | | | | 0.9 | 3.6 | 59.8 | 18.9 | 0.2 | |
| 3,000 | 10,000 | 55.8 | | 0.4 | | | | 3.3 | 5.5 | | | | | | 0.9 | 11.0 | 59.9 | 18.9 | 0.2 | |
| 10,000 | 25,000 | 45.9 | | 0.4 | | | | 3.3 | 5.5 | | | | | | 0.9 | 11.0 | 59.9 | 18.9 | 0.2 | |
| 25,000 | 100,000 | 45.4 | | 0.4 | | | | 3.3 | 5.5 | | | | | 0.6 | 0.9 | 11.1 | 52.3 | 25.8 | 0.2 | |
| 100,000 | - | 52.6 | | 0.1 | | | | 3.3 | 5.5 | | | | | 0.6 | 49.9 | 16.3 | 11.9 | 12.2 | 0.2 | |

## Area 7 - Slupsk Bank, ingoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 52.0 | | 28.0 | | | | | 0.8 | 54.4 | | | | 0.5 | 2.7 | | 9.7 | 3.9 | | |
| 500 | 3,000 | 52.0 | | 28.0 | | | | | 0.8 | 54.4 | | | | 0.5 | 2.7 | | 9.7 | 3.9 | | |
| 3,000 | 10,000 | 61.0 | 7.9 | 6.6 | | | | | 18.3 | 50.4 | | | | 0.5 | 2.7 | | 9.7 | 3.9 | | |
| 10,000 | 25,000 | 60.8 | | 9.4 | | | | | 14.1 | 45.0 | | | | | 12.7 | | 10.1 | 8.7 | 0.1 | |
| 25,000 | 100,000 | 54.3 | | 0.7 | | | | | 7.8 | 7.5 | | | | 0.2 | 1.4 | 0.5 | 63.6 | 18.3 | | |
| 100,000 | - | 63.3 | | 0.7 | | | | | 7.8 | 7.5 | | | | 0.2 | 1.4 | 0.5 | 63.6 | 18.3 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 62.5 | | 28.0 | | | | | | 54.7 | | | | | | | 17.1 | 0.3 | | |
| 500 | 3,000 | 62.5 | | 28.0 | | | | | | 54.7 | | | | | | | 17.1 | 0.3 | | |
| 3,000 | 10,000 | 57.5 | 7.9 | 6.6 | | | | | 17.5 | 50.7 | | | | | | | 17.1 | 0.3 | | |
| 10,000 | 25,000 | 58.7 | | 9.4 | | | | | 13.9 | 47.0 | | | | | 12.4 | | 16.6 | 0.7 | 0.1 | |
| 25,000 | 100,000 | 63.2 | | 9.4 | | | | | 13.9 | 44.4 | | | | | 12.4 | | 20.0 | | | |
| 100,000 | - | 63.2 | | 9.4 | | | | | 13.9 | 44.4 | | | | | 12.4 | | 20.0 | | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 64.0 | | | | | | | | | | | | | | | 79.3 | 20.7 | | |
| 500 | 3,000 | 64.0 | | | | | | | | | | | | | | | 79.3 | 20.7 | | |
| 3,000 | 10,000 | 64.0 | | | | | | | | | | | | | | | 79.3 | 20.7 | | |
| 10,000 | 25,000 | 68.9 | | | | | | | | | | | | | | | 77.4 | 22.6 | 0.1 | |
| 25,000 | 100,000 | 43.6 | | | | | | | | | | | | | | | 69.6 | 30.4 | | |
| 100,000 | - | 80.4 | | | | | | | | | | | | | 78.9 | | 11.1 | 10.0 | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 38.8 | | | | | | | | | | | | | 4.5 | | 58.5 | 36.9 | | |
| 500 | 3,000 | 38.8 | | | | | | | | | | | | | 4.5 | | 58.5 | 36.9 | | |
| 3,000 | 10,000 | 38.8 | | | | | | | | | | | | | 4.5 | | 58.5 | 36.9 | | |
| 10,000 | 25,000 | 44.3 | | | | | | | | | | | | | 4.5 | | 58.1 | 37.4 | 0.1 | |
| 25,000 | 100,000 | 46.5 | | | | | | | | | | | | | 4.5 | | 58.8 | 36.7 | | |
| 100,000 | - | 36.9 | | | | | | | | | | | | | 76.2 | 3.8 | 20.0 | | | |

## Area 7 - Slupsk Bank, outgoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 50.8 | | 65.2 | | | | 5.5 | | 16.5 | | | | | 2.2 | | 10.5 | | | |
| 500 | 3,000 | 50.8 | | 65.2 | | | | 5.5 | | 16.5 | | | | | 2.2 | | 10.5 | | | |
| 3,000 | 10,000 | 41.7 | 7.8 | 19.4 | | | | 5.5 | 23.5 | 24.4 | | 6.5 | | | 2.2 | | 10.5 | | | |
| 10,000 | 25,000 | 40.2 | | 5.0 | | | | | 69.0 | 3.5 | | | | | 5.1 | 1.6 | 15.7 | | | |
| 25,000 | 100,000 | 45.9 | | 4.9 | | | | | 17.0 | 37.0 | | 0.7 | | 0.5 | 1.2 | 0.8 | 15.3 | 22.6 | | |
| 100,000 | - | 36.9 | | 4.9 | | | | | 17.0 | 37.0 | | 0.7 | | 0.5 | 1.2 | 0.8 | 15.3 | 22.6 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 37.5 | | 65.2 | | | | 5.7 | | 16.3 | | | | | 1.7 | | 11.1 | | | |
| 500 | 3,000 | 37.5 | | 65.2 | | | | 5.7 | | 16.3 | | | | | 1.7 | | 11.1 | | | |
| 3,000 | 10,000 | 42.5 | 7.8 | 19.4 | | | | 5.7 | 23.5 | 24.2 | | 6.5 | | | 1.7 | | 11.1 | | | |
| 10,000 | 25,000 | 44.0 | | 5.0 | | | | 1.1 | 69.0 | 2.9 | | | | | 7.8 | 1.6 | 12.5 | | | |
| 25,000 | 100,000 | 37.0 | | 4.9 | | | | | 16.9 | 36.9 | | 0.7 | | 1.7 | 1.0 | 0.8 | 12.8 | 24.1 | | |
| 100,000 | - | 37.0 | | 4.9 | | | | | 16.9 | 36.9 | | 0.7 | | 1.7 | 1.0 | 0.8 | 12.8 | 24.1 | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 37.3 | | | | | | | | | | | | | | 45.4 | 19.6 | 35.0 | | |
| 500 | 3,000 | 37.3 | | | | | | | | | | | | | | 45.4 | 19.6 | 35.0 | | |
| 3,000 | 10,000 | 37.3 | | | | | | | | | | | | | | 45.4 | 19.6 | 35.0 | | |
| 10,000 | 25,000 | 33.5 | | | | | | | | | | | | | | | 99.6 | 0.4 | | |
| 25,000 | 100,000 | 59.1 | | | | | | | | | | | | | 9.6 | 5.3 | 47.1 | 38.0 | | |
| 100,000 | - | 22.2 | | | | | | | | | | | | | 28.1 | | 30.9 | 41.0 | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 62.5 | | 0.4 | | | | | | | | | | | 1.0 | 3.5 | 75.5 | 19.7 | | |
| 500 | 3,000 | 62.5 | | 0.4 | | | | | | | | | | | 1.0 | 3.5 | 75.5 | 19.7 | | |
| 3,000 | 10,000 | 62.5 | | 0.4 | | | | | | | | | | | 1.0 | 3.5 | 75.5 | 19.7 | | |
| 10,000 | 25,000 | 58.1 | | 0.4 | | | | | | | | | | | 1.0 | 3.5 | 75.5 | 19.7 | | |
| 25,000 | 100,000 | 56.1 | | 0.4 | | | | | | | | | | 0.8 | 1.0 | 3.5 | 65.5 | 28.8 | | |
| 100,000 | - | 65.7 | | | | | | | | | | | | 0.8 | 66.4 | 10.4 | 11.6 | 10.8 | | |

## Area 8 - Baltic Sea Entrance and Arkona Sea, ingoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 49.8 | | 24.5 | | | | | | 45.5 | | | | | 7.9 | | 7.0 | 0.1 | | |
| 500 | 3,000 | 49.8 | | 24.5 | | | | | | 45.5 | | | | | 7.9 | | 7.0 | 0.1 | | |
| 3,000 | 10,000 | 57.7 | 6.9 | 5.8 | | | | | 15.3 | 43.5 | | | | | 7.9 | 1.2 | 17.5 | 1.9 | | |
| 10,000 | 25,000 | 55.0 | | 8.3 | | | | | 12.1 | 39.7 | | | | | 18.7 | 0.6 | 16.3 | 4.1 | | |
| 25,000 | 100,000 | 49.1 | | 0.6 | | | | | 6.8 | 6.2 | | | | | 9.1 | 1.1 | 67.3 | 8.8 | | |
| 100,000 | - | 57.0 | | 0.6 | | | | | 6.8 | 6.2 | | | | | 9.1 | 0.4 | 53.0 | 8.8 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 64.4 | | 29.7 | | | | | | 55.3 | | | | | 7.9 | | 7.0 | 0.1 | | |
| 500 | 3,000 | 64.4 | | 29.7 | | | | | | 55.3 | | | | | 7.9 | | 7.0 | 0.1 | | |
| 3,000 | 10,000 | 59.0 | 8.4 | 7.0 | | | | | 18.6 | 51.0 | | | | | 7.9 | | 7.0 | 0.1 | | |
| 10,000 | 25,000 | 59.0 | | 10.0 | | | | | 14.7 | 47.1 | | | | | 21.0 | | 7.0 | 0.1 | | |
| 25,000 | 100,000 | 59.0 | | 10.0 | | | | | 14.7 | 47.1 | | | | | 21.0 | | 7.0 | 0.1 | | |
| 100,000 | - | 59.0 | | 10.0 | | | | | 14.7 | 47.1 | | | | | 21.0 | | 7.0 | 0.1 | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 65.0 | | | | | | | | | | | | | 7.9 | | 59.2 | 17.9 | | |
| 500 | 3,000 | 65.0 | | | | | | | | | | | | | 7.9 | 8.4 | 65.8 | 17.9 | | |
| 3,000 | 10,000 | 65.0 | | | | | | | | | | | | | 7.9 | 9.0 | 63.5 | 19.6 | | |
| 10,000 | 25,000 | 61.6 | | | | | | | | | | | | | 7.9 | | 74.2 | 17.9 | | |
| 25,000 | 100,000 | 45.2 | | | | | | | | | | | | | 7.9 | | 74.2 | 17.9 | | |
| 100,000 | - | 77.5 | | | | | | | | | | | | | 76.9 | | 8.0 | 0.1 | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 32.9 | | | | | | | | | | | | | 11.8 | 7.1 | 51.7 | 29.4 | | |
| 500 | 3,000 | 32.9 | | | | | | | | | | | | | 11.8 | 7.1 | 51.7 | 29.4 | | |
| 3,000 | 10,000 | 32.9 | | | | | | | | | | | | | 11.8 | 7.1 | 51.7 | 29.4 | | |
| 10,000 | 25,000 | 50.0 | | | | | | | | | | | | | 11.8 | 15.0 | 49.7 | 23.4 | | |
| 25,000 | 100,000 | 49.7 | | | | | | | | | | | | | 26.8 | | 49.7 | 23.4 | | |
| 100,000 | - | 41.3 | | | | | | | | | | | | | 88.2 | 3.7 | 8.0 | 0.1 | | |

## Area 8 - Baltic Sea Entrance and Arkona Sea, outgoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 50.1 | | 57.2 | | | | 4.9 | | 12.9 | | | | | 0.1 | 2.6 | 12.6 | 9.2 | 0.3 | |
| 500 | 3,000 | 50.1 | | 57.2 | | | | 4.9 | | 12.9 | | | | | 0.1 | 2.6 | 12.6 | 9.2 | 0.3 | |
| 3,000 | 10,000 | 42.2 | 6.9 | 17.2 | | | | 4.9 | 20.6 | 19.9 | | 5.7 | | | 0.1 | 2.6 | 12.6 | 9.2 | 0.3 | |
| 10,000 | 25,000 | 44.9 | | 4.6 | | | | 4.9 | 60.4 | 2.5 | | | | | 1.3 | 3.2 | 11.6 | 11.0 | 0.3 | |
| 25,000 | 100,000 | 50.8 | | 4.4 | | | | 4.9 | 14.8 | 32.3 | | 0.6 | | | 1.0 | 16.9 | 5.3 | 19.3 | 0.3 | |
| 100,000 | - | 42.9 | | 4.4 | | | | 4.9 | 14.8 | 32.3 | | 0.6 | | | 1.0 | 16.9 | 5.3 | 19.3 | 0.3 | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 35.6 | | 57.2 | | | | 4.9 | | 12.9 | | | | | 0.1 | 2.6 | 12.6 | 9.2 | 0.3 | |
| 500 | 3,000 | 35.6 | | 57.2 | | | | 4.9 | | 12.9 | | | | | 0.1 | 2.6 | 12.6 | 9.2 | 0.3 | |
| 3,000 | 10,000 | 40.9 | 6.9 | 17.2 | | | | 4.9 | 20.6 | 19.9 | | 5.7 | | | 0.1 | 2.6 | 12.6 | 9.2 | 0.3 | |
| 10,000 | 25,000 | 40.9 | | 4.6 | | | | 4.9 | 60.4 | 2.5 | | | | | 1.3 | 3.2 | 11.6 | 11.0 | 0.3 | |
| 25,000 | 100,000 | 40.9 | | 4.4 | | | | 4.9 | 14.8 | 32.3 | | 0.6 | | | 1.0 | 16.9 | 5.3 | 19.3 | 0.3 | |
| 100,000 | - | 40.9 | | 4.4 | | | | 4.9 | 14.8 | 32.3 | | 0.6 | | | 1.0 | 16.9 | 5.3 | 19.3 | 0.3 | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 34.9 | | 0.1 | | | | 4.9 | | | | | | | 0.1 | 41.2 | 2.5 | 35.7 | 0.3 | |
| 500 | 3,000 | 34.9 | | 0.1 | | | | 4.9 | | | | | | | 0.1 | 56.2 | 2.5 | 35.7 | 0.3 | |
| 3,000 | 10,000 | 34.9 | | 0.1 | | | | 4.9 | | | | | | | 0.1 | 43.0 | 15.6 | 35.7 | 0.3 | |
| 10,000 | 25,000 | 38.3 | | 0.1 | | | | 4.9 | | | | | | | 0.1 | 8.7 | 77.6 | 8.0 | 0.3 | |
| 25,000 | 100,000 | 54.7 | | 0.1 | | | | 4.9 | | | | | | | 8.5 | 17.6 | 28.3 | 40.1 | 0.3 | |
| 100,000 | - | 22.4 | | 0.1 | | | | 4.9 | | | | | | | 24.7 | 1.5 | 12.3 | 41.0 | 0.3 | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 67.0 | | 0.5 | | | | 4.9 | | | | | | | 1.0 | 4.5 | 51.4 | 22.3 | 0.3 | |
| 500 | 3,000 | 67.0 | | 0.5 | | | | 4.9 | | | | | | | 1.0 | 4.5 | 51.4 | 22.3 | 0.3 | |
| 3,000 | 10,000 | 67.0 | | 0.5 | | | | 4.9 | | | | | | | 1.0 | 19.3 | 51.5 | 22.3 | 0.3 | |
| 10,000 | 25,000 | 49.9 | | 0.5 | | | | 4.9 | | | | | | | 1.0 | 19.3 | 51.5 | 22.3 | 0.3 | |
| 25,000 | 100,000 | 50.2 | | 0.5 | | | | 4.9 | | | | | | | 1.0 | 19.5 | 51.4 | 22.3 | 0.3 | |
| 100,000 | - | 58.6 | | 0.1 | | | | 4.9 | | | | | | | 58.2 | 25.6 | 4.2 | 6.5 | 0.3 | |

## Area 9 - Kattegat, ingoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 38.0 | | 17.5 | | | | | | 32.5 | | | | | | | | | | |
| 500 | 3,000 | 38.0 | | 17.5 | | | | | | 32.5 | | | | | | | | | | |
| 3,000 | 10,000 | 43.7 | 4.9 | 4.1 | | | | | 10.9 | 34.8 | | | | | | 4.0 | 35.0 | 6.3 | | |
| 10,000 | 25,000 | 39.4 | | 6.1 | | | | | 8.7 | 30.8 | | | | | 7.7 | 2.1 | 31.1 | 13.5 | | |
| 25,000 | 100,000 | 37.2 | | 0.4 | | | | | 4.9 | 4.4 | | | | | 0.9 | 2.6 | 80.5 | 6.3 | | |
| 100,000 | - | 42.8 | | 0.4 | | | | | 4.9 | 4.4 | | | | | 0.9 | 0.3 | 32.8 | 6.3 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 60.8 | | 35.0 | | | | | | 65.0 | | | | | | | | | | |
| 500 | 3,000 | 60.8 | | 35.0 | | | | | | 65.0 | | | | | | | | | | |
| 3,000 | 10,000 | 54.5 | 9.8 | 8.3 | | | | | 21.9 | 60.0 | | | | | | | | | | |
| 10,000 | 25,000 | 54.5 | | 11.8 | | | | | 17.3 | 55.4 | | | | | 15.5 | | | | | |
| 25,000 | 100,000 | 54.5 | | 11.8 | | | | | 17.3 | 55.4 | | | | | 15.5 | | | | | |
| 100,000 | - | 54.5 | | 11.8 | | | | | 17.3 | 55.4 | | | | | 15.5 | | | | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 65.6 | | | | | | | | | | | | | | | 37.3 | 12.7 | | |
| 500 | 3,000 | 65.6 | | | | | | | | | | | | | | 27.9 | 59.3 | 12.7 | | |
| 3,000 | 10,000 | 65.6 | | | | | | | | | | | | | | 30.0 | 51.8 | 18.2 | | |
| 10,000 | 25,000 | 38.5 | | | | | | | | | | | | | | | 87.3 | 12.7 | | |
| 25,000 | 100,000 | 35.4 | | | | | | | | | | | | | | | 87.3 | 12.7 | | |
| 100,000 | - | 58.5 | | | | | | | | | | | | | 49.3 | | 0.7 | | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 19.0 | | | | | | | | | | | | | 2.8 | 23.6 | 37.0 | 36.6 | | |
| 500 | 3,000 | 19.0 | | | | | | | | | | | | | 2.8 | 23.6 | 37.0 | 36.6 | | |
| 3,000 | 10,000 | 19.0 | | | | | | | | | | | | | 2.8 | 23.6 | 37.0 | 36.6 | | |
| 10,000 | 25,000 | 65.9 | | | | | | | | | | | | | 2.8 | 50.0 | 30.5 | 16.7 | | |
| 25,000 | 100,000 | 60.4 | | | | | | | | | | | | | 52.8 | | 30.5 | 16.7 | | |
| 100,000 | - | 54.4 | | | | | | | | | | | | | 93.0 | 3.7 | 3.3 | | | |

## Area 9 - Kattegat, outgoing ships

• Chemical/product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 62.0 | | 40.8 | | | | | | 9.2 | | | | | | 3.7 | 33.8 | 12.5 | | |
| 500 | 3,000 | 62.0 | | 40.8 | | | | | | 9.2 | | | | | | 3.7 | 33.8 | 12.5 | | |
| 3,000 | 10,000 | 56.3 | 4.9 | 12.1 | | | | | 14.7 | 14.2 | | 4.1 | | | | 3.7 | 33.8 | 12.5 | | |
| 10,000 | 25,000 | 60.6 | | 3.1 | | | | | 43.1 | 1.8 | | | | | 0.9 | 1.9 | 30.6 | 18.5 | | |
| 25,000 | 100,000 | 62.8 | | 3.1 | | | | | 10.6 | 23.1 | | 0.4 | | | 0.6 | 49.5 | 2.8 | 9.9 | | |
| 100,000 | - | 57.2 | | 3.1 | | | | | 10.6 | 23.1 | | 0.4 | | | 0.6 | 49.5 | 2.8 | 9.9 | | |

• Chemical tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 39.2 | | 40.8 | | | | | | 9.2 | | | | | | 3.7 | 33.8 | 12.5 | | |
| 500 | 3,000 | 39.2 | | 40.8 | | | | | | 9.2 | | | | | | 3.7 | 33.8 | 12.5 | | |
| 3,000 | 10,000 | 45.5 | 4.9 | 12.1 | | | | | 14.7 | 14.2 | | 4.1 | | | | 3.7 | 33.8 | 12.5 | | |
| 10,000 | 25,000 | 45.5 | | 3.1 | | | | | 43.1 | 1.8 | | | | | 0.9 | 1.9 | 30.6 | 18.5 | | |
| 25,000 | 100,000 | 45.5 | | 3.1 | | | | | 10.6 | 23.1 | | 0.4 | | | 0.6 | 49.5 | 2.8 | 9.9 | | |
| 100,000 | - | 45.5 | | 3.1 | | | | | 10.6 | 23.1 | | 0.4 | | | 0.6 | 49.5 | 2.8 | 9.9 | | |

• Product tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 34.4 | | | | | | | | | | | | | | 28.4 | | 21.6 | | |
| 500 | 3,000 | 34.4 | | | | | | | | | | | | | | 78.4 | | 21.6 | | |
| 3,000 | 10,000 | 34.4 | | | | | | | | | | | | | | 34.6 | 43.8 | 21.6 | | |
| 10,000 | 25,000 | 61.5 | | | | | | | | | | | | | | 24.3 | 67.1 | 8.6 | | |
| 25,000 | 100,000 | 64.6 | | | | | | | | | | | | | 6.0 | 41.8 | 22.9 | 29.3 | | |
| 100,000 | - | 41.5 | | | | | | | | | | | | | 17.6 | | 7.0 | 25.4 | | |

• Crude oil tanker

| DWT class | | Fraction of loaded ships [%] | Cargo group [% of loaded cargo] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | Max | | 1 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 500 | 81.0 | | 0.2 | | | | | | | | | | | 0.7 | 2.2 | 34.9 | 12.0 | | |
| 500 | 3,000 | 81.0 | | 0.2 | | | | | | | | | | | 0.7 | 2.2 | 34.9 | 12.0 | | |
| 3,000 | 10,000 | 81.0 | | 0.2 | | | | | | | | | | | 0.7 | 51.6 | 35.5 | 12.0 | | |
| 10,000 | 25,000 | 34.1 | | 0.2 | | | | | | | | | | | 0.7 | 51.6 | 35.5 | 12.0 | | |
| 25,000 | 100,000 | 39.6 | | 0.2 | | | | | | | | | | | 0.7 | 52.2 | 34.9 | 12.0 | | |
| 100,000 | - | 45.6 | | | | | | | | | | | | | 41.5 | 56.5 | 1.2 | 0.7 | | |

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