

Guidelines for Food Hygiene on Board Ships Flying the German Flag (Food Hygiene Guidelines)



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Poster of the WHO -Five Keys to Safer Food-



1. General Information

1.1 Introduction

These guidelines serve as an orientation for the relevant rules and standards in the field of food hygiene. They offer a basis for the training and instruction of galley and catering staff on board seagoing ships flying the German flag.



The present guidelines are recommendations on the implementation of the food hygiene regulations in force. It is explicitly noted that the complete contents of the appropriate laws and regulations shall prevail at all times.

1.2 Basic Information and Definitions

Legal Provisions

- Regulation of the European Parliament and Council on food safety (Regulation (EC) No. 178/2002)
- Regulation of the European Parliament and Council on food hygiene (Regulation (EC) No. 852/2004)
- Maritime Labour Act
- Infection Protection Act
- Food Hygiene Ordinance
- Drinking Water Ordinance

Supplementary Information

- DIN 10503 – Food Hygiene (Definitions, HACCP-concept)
- DIN 10508 – Food Hygiene – temperature requirements for foodstuff
- DIN 10514 – Food Hygiene – hygiene training
- DIN 10516 - Food Hygiene - cleaning and disinfection
- DIN 10523 – Food Hygiene – pest control in the food area
- DIN 10524 – Food Hygiene – work wear in food business
- DIN 2001-2 –drinking water supply from small units and non-stationary plants



Definitions and Abbreviations

Food enterprises =	are enterprises, regardless of their profit aims and public or private nature, with activities related to the production, processing and distribution of food.
Food enterpriser =	is the natural or legal person who is responsible for compliance to standards of food legislation of the food enterprises under his control.
Food =	are all substances or produce which are designated or can be expected after careful discretion to be consumed by humans in a processed, partly processed or an unprocessed condition.
Food hygiene =	means the measures and conditions necessary to control hazards and to ensure fitness for human consumption of a foodstuff taking into account its intended use.
Perishable foods =	are such foods that without sufficient cooling perish in a short period of time and can become a health hazard for the consumer.
Storage temperature (L) =	is the air temperature in which food should be stored.
Product temperature (P) =	is the temperature at all points within the produce.

1.3 General Responsibilities of the Shipowner in Accordance with the Maritime Labour Act

The shipowner has to ensure that

- the drinking water, the water supply system and its operation are in accordance with the judicial drinking water regulations in force, and
- the provisions are in accordance with the judicial food regulations in force and that the galley and catering staff are appropriately informed about the standards in force.



In addition, the shipowner has to ensure that the galley and catering staff is instructed on the work bans and responsibilities of §§ 42, 43 of the Law on Protection against Infection at the commencement of duties on board and subsequently every 2 years. These instructions are to be documented in the logbook.

1.4 The Master's Responsibilities in Accordance with the Maritime Labour Act

The master or a person designated by him has to ensure that inspections of

1. the drinking water and food supplies,
2. all rooms and equipment items intended for storage of provisions and drinking water, and
3. the galleys and other food preparation and catering equipment

are conducted at least monthly and entered into the ship's logbook.

1.5 Work Bans and Prohibitions of Employment according to § 42 of the Infection Protection Act

Persons who

1. are infected or are suspected of being infected with typhoid fever, paratyphoid, cholera, shigella dysentery, salmonellosis, and other infectious gastroenteritis or hepatitis virus A or E infections,
2. have an infected wound or a different kind of skin disease, where the pathogenic organisms could be transferred via food,
3. excrete any of the pathogenic organisms shigella, salmonella, enterohaemorrhagic escherichia coli or cholera vibrios

may not work or be employed

1. in galleys, mess rooms and pantries on board ships catering for crew members and other persons on board
2. in the production, handling or distribution of the following foods if they might be in contact with them:
 - Meat, poultry and its products
 - Milk and dairy-based products
 - Fish, crayfish and molluscs and their products
 - Egg products
 - Food for infants and young children



- Ice cream and semi-finished ice creams
- Bakery products with a filling or coating which is not thoroughly baked or heated through
- Gourmet salads, raw salads and potato salads, marinades, mayonnaise, other emulsified dressings, baker's yeast

1.6 The Crew Members' Reporting Duties according to § 43 of the Infection Protection Act

If a crew member working as a member of the galley or catering staff experiences an occurrence of any of the diseases listed in no. 1.5, he or she is obligated to immediately report this to the shipowner or the master.

1.7 The Shipowner's and the Master's Responsibilities according to § 43 of the Infection Protection Act

If evidence or facts become known to the shipowner or the master that give cause for a work ban based on no. 1.5, any actions needed to prevent a transmission/spread of the pathogenic organisms have to be taken.

1.8 General Standards for Drinking Water in Accordance with the Drinking Water Ordinance

The condition of drinking water has to be such that its consumption or use does not lead to a damage of human health especially by pathogenic organisms. It has to be pure and fit for human consumption. These demands are deemed to be met if the water preparation and water distribution are done following at least the generally accepted codes of practice and the drinking water is in accordance with the standards of §§ 5 to 7 of the Drinking Water Ordinance.

When adding treatment substances and using disinfection procedures the list of approved treatment substances and disinfection procedures of the German Federal Environmental Agency is to be followed.

(<http://www.umweltbundesamt.de/wasser/themen/trinkwasser/trinkwasseraufbereitung-stoffliste.htm>)

If drinking water is provided against payment (e.g. on board ships with paying passengers), the health authority will determine how often in-house examinations of the drinking water are to be executed.

On board ships without paying passengers, it is part of the shipowner's duty of care to determine what kind of examinations of the drinking water are to be executed to maintain the general standards of the condition of the drinking water. Annex 4 of the Drinking Water Ordinance includes demands on the scope and frequency of the inspections.



1.9 HACCP (Hazard Analysis and Critical Control Points)

Article 5 of the Directive (EC) No. 853/2004 obliges the food enterpriser (shipowner) to establish, execute and sustain a persistent procedure based on the HACCP principles of hazard analysis and identification of the critical points of the process stages.

Overview of the HACCP principles

No.	Description of the principles and examples
1	<p><i>Detection of hazards that could arise from the food throughout the whole process from purchasing to serving (hazard analysis)</i></p> <p>Listing of all potential biological, chemical or physical hazards that are expected to occur during a process stage. These hazards are to be verified during a hazard analysis. Their elimination or reduction to an acceptable degree is essential for the production of safe food.</p>
2	<p><i>Determining the critical control points (CCP) making a check necessary to avoid a hazard to the consumer</i></p> <p>Possible CCPs:</p> <ol style="list-style-type: none"> 1. goods receipt 2. storage and cooling temperature of the food 3. heating and keeping the food warm 4. cleaning and disinfecting the galleys, pantries, mess rooms and provision rooms
3	<p><i>Specification of the limit values of the determined CCPs</i></p> <ol style="list-style-type: none"> 1. maintaining the cold chain (see table of cooling temperatures), no contamination, proper packaging and smell, valid best before date and use-by date 2. required cooling temperature, best before date, use-by date 3. a serving temperature of hot dishes of at least 65 °C, a core temperature for frying meat dishes of 70° for at least 10 minutes or 80° for at least 3 minutes 4. hygienic work environment in galleys, pantries, mess rooms and provision rooms
4	<p><i>Specification and implementation of methods of monitoring the CCPs</i></p> <ol style="list-style-type: none"> 1. Goods receipt checks at acceptance of the provisions 2. Daily checks of the cooling temperatures as well as before the processing of the food, checking the best before date and use-by date on a regular basis 3. Verification of the required core temperature during cooking or cutting a test slice, checking the serving temperature of the dishes 4. Daily cleaning of the galley, pantry and mess rooms, weekly cleaning of the provision rooms, weekly check for pest infestation



No.	Description of the principles and examples
5	<p data-bbox="272 353 1402 427"><i>Specification of corrective actions in the cases where the checks prove a critical control point not to have been met.</i></p> <ol data-bbox="320 432 1402 674" style="list-style-type: none"><li data-bbox="320 432 1402 506">1. Rejection of the goods or immediate consumption if cooling temperatures were not kept during delivery<li data-bbox="320 510 1402 584">2. Correction of the cooling temperature, immediate consumption, elimination of the food<li data-bbox="320 589 1402 624">3. Reheating or continued heating<li data-bbox="320 629 1402 674">4. Further cleaning and disinfection resp.
6	<p data-bbox="272 710 1402 784"><i>Compilation of documents and records on the conducted actions within the scope of the HACCP concept</i></p> <ol data-bbox="320 788 1402 949" style="list-style-type: none"><li data-bbox="320 788 1402 824">1. Goods receipt log<li data-bbox="320 828 1402 864">2. Measurement protocol and inventory list<li data-bbox="320 869 1402 904">3. Instructions on heating and serving temperature<li data-bbox="320 909 1402 949">4. Cleaning and disinfection schedule
7	<p data-bbox="272 981 1402 1055"><i>Specification of a review procedure to assess whether the defined actions to check the critical control points are efficient and suitable</i></p> <p data-bbox="272 1059 1402 1133">Verification within the scope of the checks in accordance with § 98 of the Maritime Labour Act</p>

2. Instruction on Food Hygiene Issues

The shipowner has to ensure that the crew members handling food are monitored appropriately during their activity and instructed in food hygiene issues.

Appropriate intervals have to be chosen for instruction sessions. It is recommended to conduct the first instruction session before commencement of duties on board and to repeat the instruction session after an appropriate amount of time, depending on the service time on board the ship. Records of the instructions have to be kept, documenting the date and the names of the instructed crew members.

On ships without a ship's cook the crew member responsible for the preparation of the food shall be trained or instructed in the fields of food and personal hygiene in addition to handling and storing regulations on board.



2.1 Staff hygiene to avoid food-related infections

- Crew members working in an area where food is handled have to keep a high degree of personal cleanliness; they have to wear appropriate and clean work clothes and protective clothing where necessary. (see DIN 10524 – Food Hygiene – work wear in food business)
- Before the start of work, each new work segment and after each visit to the toilet, hands have to be washed thoroughly with liquid soap under running warm water.
- The drying of the hands has to be done with disposable towels.
- Before starting work any rings, watches, wristbands have to be removed.
- The hair has to be covered during galley work.
- Injuries on hands and arms have to be properly taken care of and covered with a waterproof material. (An appropriate glove might have to be worn.)
- Food may not be coughed or sneezed on.
- Smoking is prohibited in food areas.

2.2 Food storage

Food has to be stored in such a way that harmful spoilage is avoided and a protection against contamination is ensured.

General information

- Perishable foods has to be consumed speedily after the packaging has been opened, including the remains from opened tinned food.
- To avoid germs spreading from raw meat or fish produce onto those that are ready-for-use, they have to be covered and stored separately from each other.
- Food should preferably not be stored in opened packaging, but should be filled into clean, closed containers.
- The cooling requirements, the best before dates and use-by dates on the food grade packaging have to be observed.
- Food is only to be removed from the refrigerator just before its processing or consumption.



Best Before Date (BBD): The BBD is neither a use-by date nor a date of expiry. It is determined by the manufacturer, and states up to when a food, given proper care and storage is provided, will keep its product features. After the expiry of a product's best before date, it needs to be assessed whether it is still consumable or not. If a change in colour, texture, smell or taste can be detected, the product should be disposed of.

Use-By Date (UBD): The UBD states up to which point of time food must have been used. After the expiry of the UBD, the product should not be consumed anymore.

Temperature requirements and recommendations for food

Temperature tracking and compliance with specific temperatures play a critical role in controlling the unwanted multiplication of microorganisms when producing, handling, transporting, storing and distributing food.

Subject to no conflicting specifications, perishable food should be stored at temperatures not exceeding 7 °C.

The cooling temperatures given in the table below include the most important temperature requirements. Some of the requirements are based on legal regulations while others are more of a guiding character. Full particulars on this can be found in Norm DIN 10508.

Food	Type of Temperature	Temperature °C
frozen food	product temperature	-18
ice cream	product temperature	-18
Dairy products (butter, cream cheese, soft cheese, cut cheese, inter alia)	product temperature	+10
meat, fresh	product temperature	+7
poultry, fresh	product temperature	+4
Mince meat, fresh	product temperature	+2



Food	Type of Temperature	Temperature °C
fishing products, fresh	storage temperature	Temperature approaching that of melting ice
fishing products, processed	storage temperature	+7
chicken eggs (from 18th day after the laying date)	storage temperature	+5 to +8
Other perishable food (e.g. bakery products with a filling or coating which is not thoroughly heated through, fresh cut salads, gourmet salads)	storage temperature/ product temperature	+7

2.3 Handling of food

Food is to be protected from contamination making it unsuitable for human consumption or harmful at all stages of delivery, storage, processing and servicing.

Receipt of Goods

It has to be ensured that food is only accepted at delivery on board the ship if it is evidently in perfect condition and suitable for human consumption.

- The sound condition of the transport boxes and cardboard containers as well as the condition of the cans are to be checked. (Damaged cans and glasses must be rejected.)
- It has to be checked whether the required temperatures have been kept during the delivery. (The goods should be rejected if the temperatures have been exceeded for long periods of time.)
- The freshness of the food and potential discolouration are to be checked visually. This also includes the testing for pest infestation.
- Meat and fish produce have to be checked to have been effectively kept separated from fruit and vegetables.



Handling of food

- Fresh food has to be thoroughly cleaned before being processed.
- Raw meat and raw fish are to be prepared separately from vegetables, fruit and herbs. Different galley utensils are to be used for this purpose. These are to be thoroughly cleaned before they can be used for other food.
- Unwashed food must not get in contact with cleaned food.
- Direct contact of the hands with ready-to-eat dishes is to be avoided ; for this purpose cutlery and galley utensils are to be used.
- Food has always to be washed and cooked with drinking water to ensure that the food does not get contaminated.
- If food is to be stored or served cool, it has to be cooled down to a safe temperature (at a maximum of 7 °C) that will not give rise to any health risk as soon as possible after heating or, if no heating is required, after its processing has been completed.

Heating food and keeping it warm

- Food has to be sufficiently heated to a temperature of at least 70-80 °C.
- Hot ready-to-eat perishable food has to be kept warm at a minimum product temperature of 65 °C.
- Hot ready-to-eat dishes are to be cooled down to a maximum of 7 °C, preferably within 2 hours to avoid bacterial growth.
- Heated dishes have to be cooled down in flat containers if possible.

Defrosting of food

- Frozen food is best defrosted in the refrigerator.
- Never leave defrosted food in its liquid.
- Frozen food is to be used immediately after defrosting.
- Do not refreeze defrosted food.



2.4 Hygiene at the work place

Cleaning and disinfection

- The galley rooms and their service areas are to be kept clean. The extent and specific details of the cleaning and disinfection should be documented in a corresponding plan.
- Galleys, pantries and mess rooms are to be cleaned thoroughly at least once a day after all work is done.
- After the cleaning work has been executed disinfection measures are to be taken where a high germ load is likely.
- Frequent cleaning in between improves the hygiene of the galley.
- Cleaning and disinfection agents may not be stored in areas where food is handled.
- When handling food, disposable kitchen towels instead of dish cloths are to be used.
- If dish cloths are used, they are preferably to be changed daily and thoroughly washed.
- Knives and work tops are to be properly cleaned with hot water and washing-up liquid after use and dried.
- Cutting boards or mats with smooth surfaces are to be used for the preparation of meat and fish. After use, these are preferably to be cleaned in the dishwasher – or washed or scrubbed respectively in very hot water with washing-up liquid.
- The surface of a chopping block has to be sanded off regularly, at the latest when the surface displays dents and notches.
- If possible, the dishes and galley utensils should be cleaned in the dishwasher. This has the advantage of washing at a temperature of 60-70 °C and therefore offers better hygienic cleaning of the dishes.
- If the dishes are washed by hand, they should not soak for long, since warm water is an ideal breeding ground for bacteria.

Food waste

- Food waste and other garbage are to be stored in closable bins that are easy to clean and disinfect as necessary.
- The garbage cans in galley, pantry and mess room are to be emptied and cleaned thoroughly every day.



- The provisions of Annex V of the MARPOL Convention concerning the storage and disposal of food waste are to be observed.

Pest control

- The most important preventative action in avoiding a pest infestation is the observation of general orderliness and cleanliness.
- Preventative actions are to be directed at removing the food sources and eliminating places of refuge of potential pests.
- Galley and storage rooms are to be kept clear of insect attacks and other vermin.
- As a precaution, food, as well as all rooms and pieces of equipment for storing and handling food, are to be checked for pest infestation on a regular basis.
- If a pest infestation is detected, the pest has to be removed using adequate methods. (see DIN 10523 Food Hygiene – pest control in the food area)

Five keys to safer food



Keep clean

- ✓ Wash your hands before handling food and often during food preparation
- ✓ Wash your hands after going to the toilet
- ✓ Wash and sanitize all surfaces and equipment used for food preparation
- ✓ Protect kitchen areas and food from insects, pests and other animals

Why?

While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause foodborne diseases.



Separate raw and cooked

- ✓ Separate raw meat, poultry and seafood from other foods
- ✓ Use separate equipment and utensils such as knives and cutting boards for handling raw foods
- ✓ Store food in containers to avoid contact between raw and prepared foods

Why?

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

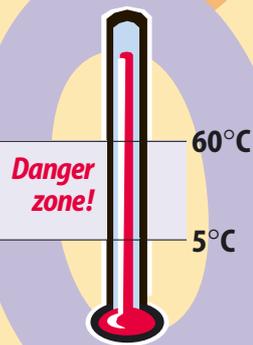


Cook thoroughly

- ✓ Cook food thoroughly, especially meat, poultry, eggs and seafood
- ✓ Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer
- ✓ Reheat cooked food thoroughly

Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.



Keep food at safe temperatures

- ✓ Do not leave cooked food at room temperature for more than 2 hours
- ✓ Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- ✓ Keep cooked food piping hot (more than 60°C) prior to serving
- ✓ Do not store food too long even in the refrigerator
- ✓ Do not thaw frozen food at room temperature

Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°C.



Use safe water and raw materials

- ✓ Use safe water or treat it to make it safe
- ✓ Select fresh and wholesome foods
- ✓ Choose foods processed for safety, such as pasteurized milk
- ✓ Wash fruits and vegetables, especially if eaten raw
- ✓ Do not use food beyond its expiry date

Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.