

Transport of carcinogenic substances and materials as cargo on board ships

Precautions must be taken when you are exposed to carcinogenic substances and materials that are transported *as cargo*.

This folder mainly applies to that part of the crew who is in control of the transport of carcinogenic substances.

The folder informs about how the regulations of the Danish Maritime Authority can be applied in practice. It contains information about the working processes in which you are particular exposed to carcinogenic substances. When performing these working processes you must have a risk assessment in writing.

A corresponding folder about the application of carcinogenic substances and materials on board ships has also been published.

How to obtain information

Before transporting chemicals, either solid, liquid or gasses, it is important to know whether they are dangerous e.g. carcinogenic.

The owner/charterer must inform about the danger of the substances that are transported. Substances and materials that are considered carcinogenic differ from country to country. Therefore, it is necessary to check the information in the regulation, popularly called the "Cancer Regulation", (Technical regulation on working environment in ships, "Information from the Danish Maritime Authority A", chapter II C regarding carcinogenic substances and materials, including asbestos and mutagens).

Regulations

At present about 400 substances in Denmark are regarded as being carcinogenic. They are all mentioned in annex 1 of the Cancer Regulation.

Many substances mentioned in annex 1 are not transported. For this reason, the annex has been given UN-numbers* in the first column to make it easier to identify the substances and materials most often transported.

When the ship is transporting substances or materials it is necessary to examine whether they are included in the annex 1 of the Cancer Regulation. The annex is revised concurrently with the development. Information about a new annex 1 to the Cancer Regulation is given in the Notice from the Danish Maritime Authority.

*UN-numbers are numbers used in connection with transport of packed, dangerous goods

Risk assessment helps locating the risk

When transporting substances there is, of course, no possibility of substituting the dangerous substances. Therefore, it is important to plan and carry out the work on board in such a way as to avoid getting exposed to carcinogenic substances and materials.

A risk assessment of the workplace for all working processes, which involve a risk of getting exposed to carcinogenic substances, must be prepared in writing.

The following 7 working processes will more or less cover the areas in which there is a risk of getting exposed in chemical tankers, product carriers, and gas carriers.

The 7 working processes:

1. Connecting and disconnecting cargo hoses
2. Loading
3. Unloading
4. Tank cleaning including cleansing, ventilation, inspection, cleaning up, and sucking up from well
5. Sampling
6. Temperature and ullage measurement
7. Other work on deck – and other work on the ship

Transport of solid carcinogenic substances in cargo hold can either take place completely closed for the crew e.g. in containers, or open in bulk. In case of transport in bulk, loading, unloading, and cleaning of cargo holds constitute the major problems.

The written risk assessment of the workplace must take into consideration the health hazards of the chemicals that are transported.

The risk assessment shall secure that you are not exposed to carcinogenic substances. This means that working methods excluding or limiting the contamination as much as possible must be applied. As far as possible, the transport must take place in closed circuits. If this is not technically possible the exposure must be limited as far as possible by other technical precautions. In special situations where it is not technically possible to remove the risk of exposure completely, suitable personal protective precautions must be applied.

The Danish Maritime Occupational Health Service has prepared examples of specific risk assessments for the transport of carcinogenic substances as cargo – they can be used as inspiration for the safety organization on board.

Special precautions

According to the Cancer Regulation some extra precautions must be taken when working in the cargo hold. Some of these extra precautions shall be mentioned here.



- The supervisor must inform about abnormal operations and any accidents that may cause risk of exposure to carcinogenic substances and materials.
- There are special demands on bathing and changing facilities, because a very good hygiene is important when handling these substances and materials. The principle is that the special work clothing, used in connection with the work on deck, must not contaminate the ordinary clothing and other people. It means that in existing ships a contaminated area in the changing facilities close to the exit and a clean area must be established. In new ships the changing facilities must include 2 separate changing rooms with a bath in between.
- When transporting cargoes with carcinogenic substances and materials you must have a special education. If you are a supervisor you must have an education which includes the requirements laid down in the STCW conventions. As able-bodied seaman you will get your education from a video from the Danish Maritime Occupational Health Service showing examples of risk assessment in connection with transport.

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