

Translation: Only the Danish document has legal validity.

**Chapter A II A
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Technical regulation on occupational health in ships

C H A P T E R I I

Chemical occupational health effects

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CHAPTER II

Chemical occupational health effects

Part A Substances and materials

Regulation 1 Application

- 1 The provisions shall cover any work with substances and materials, including the use, handling, storage, transportation and removal, as well as other work that, due to its nature or the conditions under which it is performed, may involve a risk to health and safety on board ships.

Regulation 2 Definitions

- 1 For the purposes of these provisions, the following definitions shall apply:
 - .1 "Substances" shall mean elements and their compounds.
 - .2 "Materials" shall mean compositions of two or more substances, including biological materials.
 - .3 "Substances and materials that may be hazardous to or in any other way impair health and safety" shall mean:
 - .1 Substances and mixtures that meet the criteria for classification as hazardous according to the rules on classification laid down by the Ministry of the Environment.
 - .2 Substances and materials included on the list of limit values for substances and materials issued by the Danish Working Environment Authority and annexes hereto.
 - .3 Materials containing 1 per cent or more – and, in the case of gaseous materials, 0.2 per cent – of a substance included with a limit value on the list of limit values for substances and materials issued by the Danish Working Environment Agency.
 - .4 Mixtures containing 1 per cent or more – and, in the case of gaseous mixtures, 0.2 per cent – of a substance classified as harmful to health or environmentally hazardous according to the rules on classification laid down by the Ministry of the Environment.
 - .5 Substances and materials that, due to their physical-chemical, chemical or toxic properties and the way in which they are used or occur on board the ship, may present a risk of effecting the health and safety of the employees.
 - .4 "Mixtures" shall mean mixtures or solutions made up of two or more substances.
 - .5 Unless provided otherwise, "limit values for substances and materials" shall mean the limit of the time-weighted, average concentration of a substance or material in the air on board ships that is inhaled by an employee in relation to a more specific reference period.
 - .6 "Biological limit value" shall mean the limit to the concentration of a given substance or material in a given biological environment, its decomposition products in the organism (metabolites) or effect indicators.

Regulation 3 Sale

- 1 In connection with purchases in countries outside the European Community, the owner or the master shall ensure that the packing has been made and marked in accordance with the Order issued by the Ministry of the Environment on the classification, packing, marking, sale and storage of chemical substances and mixtures in force at any time; however such marking may be in English.
- 2 From 1 June 2007, chemical substances and mixtures bought in countries outside the European Community may not contain substances included on the list of substances, cf.

REACH,¹ annexes XIV and XVII, unless they are, in accordance with REACH, approved for the intended use or used with the restrictions determined accordingly.

- 3 The Danish Maritime Authority may, upon request, or when conditions otherwise give rise hereto, see to it that investigations are carried out, possibly by special experts, and provide all the information necessary to ascertain whether a substance or material has effects that may involve a risk to health and safety.

Regulation 4 General

- 1 The Order contains rules supplementing the technical regulations on the performance of work on board ships as well as relevant provisions in the regulations on safety work on board ships.
- 2 The work with substances and materials shall, at all levels, be planned, arranged and carried out in a way that is in every respect reasonable from a health and safety perspective on the basis of an individual and an aggregate assessment of the occupational health conditions that may have an effect on physical or mental health in the short or the long term. This includes the avoidance of all unnecessary effects from substances and materials, cf. the technical regulations on the performance of work on board ships.

Regulation 5 Workplace assessments, etc.

- 1 The ship owner or, on his behalf, the master, shall ensure that written workplace assessments are made of the health and safety conditions on board, particularly with a view to ensure a written procedure in connection with the more detailed planning, arrangement and implementation of the workplace assessment, and he shall also ensure that the result hereof is made visible.
- 2 A workplace assessment shall be made in consideration of the nature of the work, the technical aids, substances and materials, the working methods and processes used on board the ship, the arrangement of the workplace, the size of the ship, and the like.
- 3 Observing the general preventive measures mentioned in regulation 6(1), a workplace assessment shall include an opinion about the occupational health problems on board the ship as well as a solution hereof. The necessary solutions shall be given in the workplace assessment.
- 4 A workplace assessment shall be up-dated whenever changes are made to the work, working methods and processes, etc. that are of importance to occupational health on board the ship, however, at least every third year.
- 5 A workplace assessment shall be carried on board the ship and shall be available to the ship owner, the master, supervisors, other employees and the Danish Maritime Authority.
- 6 If the master himself in cooperation with the safety organisation does not have sufficient insight to make the workplace assessment, the ship owner or the master shall request the assistance of the Danish Maritime Occupational Health Service or the Danish Fishermen's Occupational Health Service or other special experts.
- 7 If hazardous substances and materials are carried on board, including in the cargo, the following elements shall form part of the workplace assessment in addition to the provisions of regulation 5(1)-(6), cf. however regulation 5(14):
 - .1 the hazardous properties of the substances and materials,
 - .2 the level of exposure, the type hereof and the duration,
 - .3 the conditions in relation to the work with hazardous substances and materials, including their quantity,
 - .4 the effect of the preventive measures that have been taken or are to be taken,

¹ Regulation (EC) no. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the registration, evaluation, authorisation and restriction of chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) no. 793/93 and Commission Regulation (EC) no. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Official Journal 2006, no. L 396 of 30 December 2006, p. 1).

- .5 where possible, the conclusions that can be drawn from the occupational medical examinations made,
 - .6 any stipulated limit value, and
 - .7 the information on health and safety provided by the supplier or the ship owner/master.
- 8 The ship owner or, on his behalf, the master shall acquire further information necessary for the workplace assessment from the supplier or other easily accessible sources.
- 9 The assessment shall also contain an inventory of the hazardous substances and materials used at the workplace with reference to the relevant workplace user instructions, cf. regulation 10(1)-(5).
- 10 Repair and maintenance work and the like on board ships that may predictably give rise to substantial effects from substances and materials or that may impair health and safety for other reasons though technical precautions have been taken shall be included in the workplace assessment.
- 11 If the work involves a risk of effects from more substances or materials, the total hazard related to the various substances and materials shall be assessed.
- 12 To the extent that it is a consequence of the above-mentioned assessment in regulation 5(1)-(11) that there is a danger to the employees' health and safety, the special precautions mentioned in regulations 8 and 9 shall be taken.
- 13 It shall, however, not be necessary to take such special precautions if the assessment shows that the quantity of hazardous substances and materials involves only a slight risk of effects.
- 14 The provisions of regulation 5(7)-(11) shall not apply if the ship owner or, on his behalf, the master proves that the nature and the extent of the effects from the hazardous substances and materials have an unimportant extent and that the measures might be unnecessary.
- 15 In the workplace assessment, the result of the assessment, including the precautions to be taken, may be described by referring to the workplace assessments that have been drafted under regulation 10(1)-(5).

Regulation 6 Preventive measures

- 1 To the extent that it follows from the above-mentioned assessment, cf. regulation 5(1)-(11), the effects from substances and materials shall be removed or limited as much as possible in connection with the performance of the work, cf. regulation 7(1)-(8) and regulation 8(1):
- .1 by removing, substituting or limiting the quantity of hazardous substances and materials to the minimum extent necessary for the performance of the work;
 - .2 by arranging the workplace;
 - .3 by using technical aids;
 - .4 by limiting to a minimum the number of employees who are exposed to or who risk being exposed to the effects from hazardous substances and materials;
 - .5 by taking appropriate measures as regards hygiene;
 - .6 by using suitable working methods, including safe and secure handling, storage, transportation on board ships as well as removal of hazardous substances and materials; and
 - .7 by using suitable personal protective equipment.
- 2 Paragraph (1-1) shall not apply to the transportation of substances and materials as cargo.
- 3 Employees engaged in work with hazardous substances and materials shall complete training approved by the Danish Maritime Authority before the work is carried out. It shall be possible to prove that such training has been completed.

Regulation 7 Substitute substances and materials (the principle of substitution)

- 1 The ship owner or, on his behalf, the master shall ensure that hazardous substances and materials at the workplace are removed, substituted or limited to a minimum.

- 2 Paragraph (1) shall not apply to the carriage of substances and materials as cargo.
- 3 Measures under paragraph (1) shall primarily be taken by substituting a hazardous substance or material by a non-hazardous, less hazardous or less annoying substance or material or working process.
- 4 In doing so, it shall be ensured that the substances and materials are used in the form that involves the least possible risk of effects during work.
- 5 If substitution is not possible, this shall be proved to the Danish Maritime Authority upon request.
- 6 Substitution shall be made though the effects from the hazardous substances and materials are unimportant.
- 7 If the use of a substitute substance or material would involve considerable differences in the technical properties or expenses, the technical and economic consequences shall be weighed against considerations of health and safety.
- 8 If substitution cannot be made under paragraph (6) or is omitted because a total consideration according to paragraph (7) shows that the use of a substitute substance or material would involve unreasonable extra expenses for the ship owner, this shall be proved to the Danish Maritime Authority upon request.
- 9 The safety organisation of the ship shall be involved in the assessment of whether substitution is possible under regulation 5(14) and (3)-(8).

Regulation 8 Special measures

- 1 If, due to the special nature of the work, it is not possible to remove the effects related to the health and safety of the employees according to regulations 5, 6 and 7, the ship owner or, on his behalf, the master shall take the following measures on the basis of the assessment made under regulation 5(1)-(11) in the following order of sequence:
 - .1 arrange working methods, carry out technical control as well as use suitable working equipment and suitable materials to avoid or limit evaporations from hazardous substances and materials;
 - .2 use collective protective measures at the source of the hazard, such as sufficient ventilation and appropriate arrangement of the work; and
 - .3 use individual protective measures, including personal protective equipment.
- 2 In connection with the special measures, occupational medical examinations shall be carried out where relevant.
- 3 Unless the ship owner or, on his behalf, the master is capable of proving clearly in any other way that sufficient protection has been achieved by means of the special measures taken, the ship owner or, on his behalf, the master shall regularly and when changes are made to the conditions that may involve a risk of effects on the employees' exposure to hazardous substances and materials carry out measurements, especially when it is deemed necessary to comply with the limit values.
- 4 The ship owner or, on his behalf, the master shall take account of the results of the measurements mentioned in paragraph (3) when drafting and up-dating the workplace assessment.
- 5 If the work is of such a nature that it is not possible to prevent the presence on board of hazardous concentrations of flammable substances and materials or hazardous quantities of chemically instable substances and materials, the ship owner or, on his behalf, the master shall take measures on the basis of the workplace assessment and the general preventive principles in order especially to ensure in the following order of sequence:
 - .1 that it is avoided that sources of ignition are present that may give rise to fires and explosions or inappropriate circumstances that may cause chemically instable substances or materials to lead to harmful physical effects; and
 - .2 that the harmful effects to the employees' health and safety are reduced in the case of fires or explosions as a consequence of flammable substances or materials being ignited or

harmful physical effects as a consequence of chemically instable substances and materials.

Regulation 9 Measures in case of accidents, etc.

- 1 If the use of hazardous substances and materials at the workplace causes an accident, an incident or an imminent danger hereof, the ship owner or, on his behalf, the master shall immediately take measures to counter the effects hereof and to inform the employees hereof.
- 2 The ship owner or, on his behalf, the master shall ensure that only employees whose work necessitates so have access to the areas concerned. These employees shall be provided with suitable personal protective equipment, cf. the technical regulations in chapter VII, part A, on the use of personal protective equipment on board ships.
- 3 The ship owner or, on his behalf, the master shall ensure that information about emergency measures concerning hazardous substances and materials is available to the employees on board.
- 4 The information shall include:
 - .1 the hazards found during work with hazardous substances and materials, measures for identifying hazards so that the necessary precautions may be taken, and
 - .2 all information available about special hazards that might arise in connection with accidents and incidents.

Regulation 10 Workplace user instructions

- 1 Where employees are engaged on board in work with hazardous substances and materials, workplace user instructions shall be drafted for each individual substance or material on the basis of the safety data sheet received from the supplier or similar information, cf. annex 1. The ship owner or, on his behalf, the master shall ensure that safety data sheets are acquired and ensure that the employees and their representatives have access to the information in the safety data sheet. In addition to the information provided in the safety data sheet, the workplace user instructions shall be supplemented by information of relevance to the ship and the workplace concerning the following headlines in annex 1:
 4. First-aid measures.
 5. Fire-fighting, including information about measures to be taken in case of fire.
 6. Measures to be taken in case of accidental leakages, including information about safety regulations in connection with spillages.
 7. Handling and storage, including information about safety regulations in connection with storage.
 8. Exposure control/personal protective equipment, including information about measures to be taken in case of exposure to the substance or the material and about special working clothes and personal protective equipment as well as any prohibition against solitary work.
 13. Removal, including information about measures to be taken in connection with removal where it is included in the safety data sheet for the substance or mixture in question.
 16. Other information, including fields of application.
- 2 The workplace user instructions shall be up-dated to the extent necessary.
- 3 The workplace user instructions shall be kept in a place that is accessible to the employees.
- 4 Employees engaged in work with substances and materials shall be guided about the use hereof, and the workplace user instructions shall be handed out to them along with effective instructions.
- 5 The workplace user instructions shall be in Danish and, if another language is being used as the working language, it shall also be available in this other language. The workplace user instructions shall be easy to understand for the employees.

- 6 The requirements for the workplace user instructions mentioned in regulation 10(1)-(15) shall not apply to substances and materials that are carried as cargo, but the ship owner or, on his behalf, the master shall render similar information for use when drafting the workplace assessment, cf. regulation 5(1)-(11).
- 7 The ship owner or, on his behalf, the master shall inform the safety organisation of the relevant limit values of the hazardous substances and materials. In ships where a safety organisation need not be established, the employees shall be kept informed in a similar way.

Regulation 11 Occupational medical examinations

- 1 The ship owner shall ensure that the employees who are, according to an assessment, liable to be exposed to a risk of effects from substances and materials under regulation 5(1)-(11) have access to an occupational medical examination.
- 2 The examination shall be carried out in accordance with the provisions of the technical regulations on occupational medical examinations under the Act on safety at sea if:
 - .1 the effects are of such a nature that an identifiable disease or health impairment may be connected with the exposure;
 - .2 it is likely that the disease or the effect may arise under the special conditions under which the employee works;
 - .3 the examination method used involves only a slight risk to the employee; and
 - .4 effective techniques for detecting indicators of the disease or the effect are available.
- 3 The Danish Maritime Authority shall let the ship owner and the ship know whether the results of the occupational medical examination give rise to new measures, including an up-dating of the workplace assessment, health examinations of the employees on a continuous basis as well as measures in connection with the planning and arrangement of the work.

A N N E X 1

Information on safety data sheet

This annex contains information on the information of safety data sheet contained in REACH.²

According to REACH, a chemical safety report shall be drawn up for a number of substances and mixtures incorporating the relevant application and exposure scenarios. These exposure scenarios shall be included as an annex to the safety data sheet.

Users shall also, where possible, inform the manufacturer or the importer if they register other risks or health consequences than those given in the safety data sheet when using the chemical.

The safety data sheet shall contain the below 16 headlines, contain information hereon and be dated.³

1. Identification of the substance or chemical mixture.
Information about trade name, registration number, most important uses as well as description of the function of the substance. Name, address, telephone number and e-mail address of the one responsible for marketing and supplier user instructions as well as emergency telephone number for company and/or relevant official advisory body.
2. Hazards identification.
Description of hazards to human beings and the environment.
3. Composition/information on ingredients.
Description of ingredients and their concentrations.
4. First-aid measures.
Short and easily understandable information about symptoms, first-aid and medical aid, if relevant, is required.
5. Fire-fighting measures.
Information about measures to be taken in case of fire.
6. Accidental release measures.
Information about measures to be taken in case of accidental release.
7. Handling and storage.
Information about measures to be taken during handling and storage.
8. Exposure controls/personal protection.
Information about measures to be taken when being exposed to substances or mixtures, including suitable work processes, technical control, special work clothes, personal protective aids as well as any prohibition against working alone.
9. Physical and chemical properties.
10. Stability and reactivity.
Indication of the stability of a substance or a chemical mixture as well as the risk of hazardous reactions occurring under certain conditions of use and in connection with release to the surroundings.
11. Toxicological information (properties presenting a health risk).

² See note 1.

³ This annex briefly provides information on the headlines to be included in the safety data sheet according to REACH. Furthermore, the contents requirements of the REACH regulation have been summarized. The guidelines in force at any time for the drawing up of safety data sheets are found in REACH, annex II, "Guide to the compilation of safety data sheets". It is stressed that the information in this annex are given here only for practical reasons and that the reproduction here does not affect or replace the text of the REACH regulation.

Information about any symptoms in connection with consumption or absorption in human organism.

12. Ecological information.

Information about important environmental effects.

13. Disposal considerations.

Information about measures to be taken in connection with disposal.

14. Transport information.

Information on internal and external transportation.

15. Regulatory information.

Information about any chemical safety assessment carried out or special community provisions.

16. Other information.

Any other information such as, for example, R-sentences, consultancy on training or instruction, age restrictions on use, important sources for the drawing up of the safety data sheet, etc.