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## **MERCHANT SHIPPING AND FISHING VESSELS (HEALTH AND SAFETY AT WORK) (CHEMICAL AGENTS) REGULATIONS 2010 AS AMENDED**

**Notice to all ship, yacht and fishing vessel owners, operators and managers and other employers of seafarers; masters, officers and seafarers on merchant ships and yachts; skippers and crew on fishing vessels and small commercially operated vessels.**

*This notice should be read in conjunction with the Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Chemical Agents) Regulations as amended and the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 as amended. This notice replaces MGN 409 (M+F) and MGN 454 (M+F).*

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### **Summary**

The purpose of this Merchant Shipping Notice is to provide detailed information required to comply with the Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Chemical Agents) Regulations 2010 as amended<sup>1</sup> ("the Chemical Agents Regulations").

- It also provides guidance on the Chemical Agents Regulations.
- Shipowners and employers must assess the risks to those working on their ships from exposure to chemical agents.
- Unless the risk is slight, control measures must be put in place, and training and information must be provided and procedures put in place to protect those affected in the case of an accident, incident or emergency.
- Production, manufacture or use of certain chemical agents is prohibited on ships.
- Health surveillance may be required.
- This Notice comes into force on exit day.

#### Relationship with the Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Chemical Agents) Regulations 2010

- The Chemical Agents Regulations need to be read together with this Merchant Shipping Notice as it sets out many of the details, standards and formalities which must be observed in order to comply with the legal obligations under those

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<sup>1</sup> As amended by S.I. 2012/1844, S.I. 2015/21 and the Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Miscellaneous Amendments) (EU Exit) Regulations 2018



Regulations. Failure to comply with those obligations may be a criminal offence under the Chemical Agents Regulations.

- Annex 1 lists prohibited chemical agents and prohibited activities.
- Annex 2 and Annex 3 cover health surveillance measures.

## 1. Introduction

- 1.1 The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Chemical Agents) Regulations 2010 (SI 2010/330) (the “Chemical Agents Regulations”) introduced requirements for the protection of workers from the risks related to exposure to hazardous chemical agents at work.
- 1.2 The Health and Safety Executive (“HSE”) and the Health and Safety Executive for Northern Ireland (“HSE(NI)”) have implemented similar protection from these risks through the Control of Substances Hazardous to Health Regulations 2002 (as amended) and the Control of Substances Hazardous to Health Regulations (Northern Ireland) 2003 (as amended) respectively (referred to in this notice jointly as “COSHH”).
- 1.3 The Chemical Agents Regulations ensure the protection of seafarers and workers on ships, including fishing vessels, yachts and other small vessel of all types with workers on board, including those operating on inland waters.
- 1.4 This Notice provides detailed information required to comply with the Chemical Agents Regulations. Details are at paragraph 17. It also seeks to provide general guidance to assist shipowners and employers in identifying, by means of risk assessments, any risks to those working on board as a result of exposure to chemical agents, which could have an adverse effect on their health and safety. Where such risks are identified, the shipowner or employer must take appropriate measures to either remove those risks entirely or, where that is not possible, reduce them as far as is reasonably practicable.

## 2. Chemical Agents

- 2.1 For the purposes of the Chemical Agents Regulations,

*chemical agent* means any chemical element or compound, on its own or admixed, as it occurs in the natural state or as produced, used or released, including release as waste, by any work activity, whether or not produced intentionally and whether or not placed on the market.

*EH40* means the document by that number published by HSE from time to time.

*hazardous chemical agent* means —

- (a) any chemical agent which meets the criteria for classification as hazardous within any physical and/or health hazard class laid down in Annex I to Regulation (EC) No 1272/2008 (the “CLP Regulation”), whether or not that chemical agent is classified under that Regulation; or
- (b) any chemical agent which whilst not meeting the criteria for classification as hazardous in accordance with sub-paragraph (a) may, because of its physico-chemical, chemical or toxicological properties and the way it is used or is present on the ship, presents a risk to the safety and health of workers, including any chemical agent that is assigned a national occupational exposure limit value;



*national occupational exposure limit value* in relation to a chemical agent means any workplace exposure limit established for that agent in document EH40.

2.2 In the above context, a hazardous chemical agent includes any chemical element or compound with the potential to cause harm if inhaled, ingested or by coming into contact with or absorbed through the skins including, for example, chemical substances such as paints, cleaning materials, fumigants and pesticides, as well as hazardous substances carried as cargoes whether in bulk or as packaged goods.

### **3. Meaning of “worker” (Regulation 3)**

3.1 The Chemical Agents Regulations apply to all persons working on board a ship.

3.2 However, the provisions of the Chemical Agents Regulations are disapplied in respect of trainees on sail training vessels, operating under an MCA Code of Practice, solely for the purpose of receiving instruction in the principles of responsibility, resourcefulness, loyalty and team endeavour and to advance education in the art of seamanship or for the purpose of receiving instruction in navigation and seamanship for yachtsmen.

3.3 Such persons are not workers for the purposes of the Regulations as they are not employed and are not reliant on their engagement on board for their livelihood. However, there is a general obligation placed on shipowners and employers by regulation 5(1) of the Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 as amended<sup>2</sup> (“the General Duties Regulations”) to ensure the health and safety of all persons on board, so far as is reasonably practicable, irrespective of whether or not they are workers.

### **4. Application (Regulation 4)**

4.1 The Chemical Agents Regulations apply to all activities of seafarers and workers on UK registered vessels and Government ships (other than Royal Navy vessels) wherever they are in the world and certain provisions also apply to non-UK ships in UK waters. The Regulations apply to all types of commercially operated vessels, including fishing vessels, yachts and vessels operating only on inland waters.

#### Derogation for public service activities and civil protection activities

4.2 Regulation 4(2) provides a limited derogation from the requirements of the Chemical Agents Regulations in respect of vessels undertaking public service or civil protection activities where because of characteristics peculiar to the activity being undertaken, full compliance with the requirement of the Chemical Agents Regulations is not possible. This derogation is aimed at activities such as rescue or enforcement.

4.3 The derogation only applies

- to the specific provision(s) of the Chemical Agents Regulations with which compliance is not possible; and
- for the length of time compliance is not possible.

4.4 Where this derogation applies, the health and safety of those working on board must nevertheless be safeguarded as far as is reasonably practicable. All remaining provisions of the Chemical Agents Regulations, with which compliance remains possible, continue to apply in full and full compliance with all the requirements of the Regulations will be required as soon as the activity concerned is no longer being undertaken.

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<sup>2</sup> S.I. 1997/2962 as amended by S.I. 1998/2411, S.I. 2001/54, S.I. 2014/1616 and S.I. 2018/1109



In this context “activity” is considered to refer to specific occasions on which an activity is undertaken and not to an ongoing period during which such activities might periodically occur.

- 4.5 For the purposes of the derogation referred to in paragraph 4.2 above, “Public service activities” covers the activities of the armed forces, HM Coastguard, HM Revenue and Customs, immigration officers, police, prison officers, the security and intelligence services and similar organisations. **NOTE - Ferries, whether operated by a public body or not, are not covered by the “Public service activities” derogation.** “Civil protection services” covers the fire and rescue, ambulance, and search and rescue services. This derogation also applies to any vessel engaged in search and rescue activities when answering a distress call or when requested to do so by HM Coastguard or the appropriate authority of another state.

## 5. Application of related legislation (Regulation 5)

- 5.1 Notwithstanding the specific provisions of the Chemical Agents Regulations, the provisions of the General Duties Regulations also apply to all work involving potential exposure to Chemical Agents. The Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Carcinogens and Mutagens) Regulations 2007<sup>3</sup> may be applicable. In addition, provisions relating to the transport of hazardous chemical agents by water (contained in the IMDG Code, the IBC Code, or the IGC Code, the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waters (ADR) or the Regulations for the Carriage of Dangerous Substances on the Rhine) may apply. In any such circumstances where legislation / requirements overlap, the more stringent requirements should be considered to apply.
- 5.3 The Chemical Agents Regulations do not apply to land-based workers (including contractors, stevedores and other port workers, for example) to whom COSHH apply. The HSE/HSE(NI) Regulations only apply within UK waters or to UK offshore installations. Should a land-based worker be on a vessel when it goes outside UK limits, the HSE Regulations will cease to apply and the Chemical Agents Regulations will then apply to that worker.
- 5.4 The Chemical Agents Regulations and COSHH are intended to provide equivalent protection to workers, whichever regime applies in particular circumstances, and compliance with COSHH in respect of chemical agents will ensure compliance with the Chemical Agents Regulations within the UK.

## 6. Assessment of health risks (Regulation 6)

- 6.1 Regulation 7 of the General Duties Regulations (as amended) requires shipowners and employers to assess the risks to their workers arising from the work they are undertaking. The Chemical Agents Regulations build on that requirement, requiring that a risk assessment establishes whether the possibility of exposure to chemical agents exists and, if so, what category such agents fall into, who is at risk from them and, what the potential exposure to such agents is likely to be.
- 6.2 In assessing health risks, shipowners and employers must obtain information from the supplier or other readily available sources, on the health risks to users. This will include, but may not be limited to, the safety data sheet.

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<sup>3</sup> S.I. 2100/3100



6.3 Exposure to chemical agents is likely to occur on every type of vessel as chemicals are present around us, in some form or another, throughout our lives. The purpose of the assessment is to identify when such exposure may be harmful and to inform the introduction of control measures to protect seafarers and workers when necessary.

## **7 General principles for prevention of risks (Regulation 7)**

7.1. Where the employer's risk assessment reveals an actual or potential risk to workers' health and safety from chemical agents, the first step is to consider whether it is possible to remove the risk entirely by eliminating the use of such agents on the vessel. If it is, and a further risk assessment shows no residual risk, no further action will be required. If however it is not possible to eliminate the risk completely, the next step should be to put in place appropriate control measures, to reduce the risk as far as is reasonably practicable.

7.2 Possible control measures include:-

- (a) review the design and organisation of systems of work on the ship;
- (b) provide suitable equipment for work with chemical agents and introduce maintenance procedures which ensure the health and safety of workers at work;
- (c) reduce to a minimum the number of workers exposed or likely to be exposed;
- (d) reduce to a minimum the duration and intensity of exposure;
- (e) introduce appropriate hygiene measures;
- (f) reduce the quantity of chemical agents present on a ship to the minimum required for the type of work concerned;
- (g) introduce suitable working procedures, including arrangements for the safe handling, storage and transport on a ship of hazardous chemical agents and of waste containing such agents; and
- (h) take account of the results of any health surveillance under regulation 12 (see paragraph 12 of this notice).

7.3 The extent of control measures required will depend on what chemical agents are present on a vessel, and the severity and likelihood of the risks that have been identified from their use or presence. In the simplest of cases, a domestic cleaning product may require no special measures other than hygiene measures. Alternatively for a cleaner with corrosive properties the use of rubber gloves, a plastic apron and protective glasses to protect against splashes may be required. At the other end of the scale far more stringent measures might be required where there is potential for exposure to hazardous chemicals carried as cargoes.

7.4 In deciding what measures need to be undertaken, for products designed for domestic use, all that may be required is to read, and comply, with the safety advice given on the packaging. A safety data sheet should normally be available from the manufacturer which provides information on exposure controls and personal protection. If not, further advice should be sought from the manufacturer/supplier to enable the employer to make an informed decision about the measures to be taken.



7.5 Where the results of the risk assessment show that, because of the quantities of a hazardous chemical agent present in the workplace, there is only a slight risk to the safety and health of workers, and the measures taken in accordance with paragraphs 7.1 and 7.2 above are sufficient to reduce that risk to a level unlikely to cause harm, the provisions of Regulations 8, 9 and 12 shall not apply.

7.6 In MCA's view "slight risk" should be construed as indicating that the conditions of use and/or exposure of any chemical agent will be such as to potentially result in either a low risk of exposure to that agent or that exposure to that agent will only have a slight effect on any worker who is exposed to it. e.g. exposure will only result in minor effects such as skin irritation, physical discomfort etc. of a very short term duration, without the possibility of longer term or permanent effects.

## **8. Specific protection and prevention measures (Regulation 8)**

8.1 Where paragraph 7.4 above applies, compliance with the requirements of paragraphs 8.2. to 8.5 is not required.

8.2 Where despite the actions referred to in paragraph 7.1 above, the risk remains more than slight, the usual hierarchy of measures applies. This means avoiding the use of a hazardous chemical agent or if that is not possible replacing it with a chemical agent or process which is less hazardous. In addition appropriate prevention and protection measures should be taken including—

- (a) designing appropriate work processes and engineering controls and using adequate equipment and materials to avoid or minimise the release of hazardous chemical agents which may present a risk to the health and safety of workers on the ship;
- (b) taking appropriate collective protection measures at the source of the risk, such as adequate ventilation and appropriate organisational measures; and,
- (c) where exposure cannot be prevented by other means, the use of individual protection measures including personal protective equipment.

8.3 The measures referred to in paragraphs 7.1, and 8.2 are to be accompanied by health surveillance (see section 12 below) where that is appropriate to the nature of the risk identified.

8.4 Where a risk still remains, despite the taking of the measures in paragraphs 8.2 - 8.3 above, the employer must measure each chemical agent present to ensure that the occupational exposure value for that agent has not been exceeded. For the UK these occupational exposure values are the national occupational exposure limit values contained in EH40 which is available from HSE's website: <http://www.hse.gov.uk/pUbns/priced/eh40.pdf> or in hard copy from HSE books. Such measurements are to be carried out regularly and in any event when any change occurs in the conditions which may affect workers' exposure to chemical agents.

8.5 Where a maximum occupational exposure limit value is found to have been exceeded, the employer must immediately take steps to remedy the situation by carrying out such preventative and protective measures as are necessary to reduce exposure below the occupational exposure limit value.

## **9. Accidents, incidents and emergencies (Regulation 9)**

9.1 Where paragraph 7.4 above applies, compliance with the provisions of paragraph 9.2 is not required.



9.2 Where despite the actions referred to in paragraph 7.1 above, the risk remains more than slight, the employer is required to put in place appropriate procedures to protect workers from the effects of any accident, incident or emergency related to the presence of hazardous chemical agents. Such procedures include:-

- (a) carrying out of relevant safety drills at not less than every six monthly intervals;
- (b) providing appropriate first aid facilities;
- (c) providing appropriate protective clothing, personal protective equipment, specialised safety equipment and plant to workers who are permitted to work in an affected area;
- (d) providing appropriate warning and other communication systems —
  - i. to signal an increased risk to health and safety;
  - ii. to enable an appropriate response to be made; and
  - iii. to enable remedial actions, assistance, escape and rescue operations to be launched immediately if necessary.

## **10. Information and training for workers (Regulation 10)**

10.1 Workers and/or their representatives are to be provided with information on the results of the risk assessment carried out by the employer and in addition, where the risk assessment has identified actual or potential risks from chemical agents : -

- (a) information on any hazardous chemical agents present on the ship including the identity of those agents, the risks to health and safety, relevant maximum occupational exposure limit values and other legislative provisions;
- (b) access to any relevant safety data sheets provided by chemical suppliers; and
- (c) training and information on appropriate precautions and actions to be taken in order to safeguard themselves and others working on the ship.

Depending on the nature and degree of risk identified by the risk assessment, such information may be provided orally or by means of individual instructions and training supported by information in writing. Information must be updated as appropriate to take account of any changes in circumstances relating to the hazardous chemical agents present on board.

10.2 The nature and any associated hazards of the contents of containers or pipes for hazardous chemical agents are to be clearly identifiable by means of markings which comply with the requirements of the Merchant Shipping and Fishing Vessels (Safety Signs and Signals) Regulations 2001 or such markings as are provided for in any other international legislation governing the labelling of chemical agents or the provision of safety signs at the workplace unless that legislation provides for a derogation from such marking.

## **11. Prohibited activities (Regulation 11)**



- 11.1 The production, manufacture or use on a ship of any chemical agent listed in part (a) of Annex 1 to this Notice is prohibited except where specifically exempted (see section 14). It is considered unlikely that this provision will be relevant to work on board ship.
- 11.2 In the unlikely event that there is a need to produce, manufacture or use any agent listed in Annex 1 on a ship, Regulation 11(2) of the Chemical Agents Regulations permits the Secretary of State (in practice MCA) to issue exemptions from the prohibitions set out in Annex 1 to this Notice for —
- (a) the sole purpose of scientific research and testing, including analysis;
  - (b) activities intended to eliminate chemical agents that are present in the form of by-products or waste products; or
  - (c) the production of a chemical agent referred to in regulation 11(1) for use as an intermediate, and for such use.
- 11.3 Any employer seeking the exemption should provide Seafarer Safety and Health Branch of the MCA (on behalf of the Secretary of State) with detailed information in writing, covering :-
- (a) the reason an exemption is required;
  - (b) the quantity of the chemical agent to be used annually;
  - (c) the activities and the reaction or processes involved;
  - (d) the number of workers who may be involved;
  - (e) the precautions envisaged to protect the health and safety of workers concerned; and
  - (f) the technical and organisational measures taken to prevent the exposure of workers.
- 11.4 Each case will be considered on its merits. The MCA will consult the workers concerned, or their representatives, to obtain their comments on the request for an exemption. It may also be necessary for the MCA to consult other bodies/organisations to obtain their comments.
- 11.5 The processing time for any application for exemption will be 8 weeks Any exemption approved will be given in writing and may be subject to compliance with appropriate conditions to ensure the health and safety of workers.

## **12. Health surveillance (Regulation 12)**

- 12.1 Where paragraph 7.4 applies, compliance with this section is not required.
- 12.2 Health surveillance is required for a worker where:-
- (a) the risk assessment reveals a risk to the health and safety of that worker;
  - (b) the exposure of the worker to a hazardous chemical agent is such that an identifiable disease or adverse health effect may result from that exposure;
  - (c) there is a likelihood that the disease or the adverse health effect may occur under the particular conditions of the worker's work; and
  - (d) the technique of investigation is of low risk to workers.



Biological monitoring and related requirements may form part of health surveillance.

- 12.3 There are specific requirements in the Chemical Agents Directive for health surveillance for those who work with lead; Annex II to the Directive refers to a **binding biological limit** and this is set out at Annex 2 to this notice. While the MCA does not expect these requirements to be relevant to work on most merchant shipping and fishing vessels, if a situation arises where employers consider these provisions may be relevant, they should refer in the first instance to guidance that is available on the HSE web site on Lead at Work.
- 12.4 Where health surveillance is undertaken, individual health and exposure records are required to be made and kept up to date for each seafarer under surveillance. The record is to contain a summary of the results of health surveillance carried out and of any monitoring data representative of the exposure of the worker. The record shall be kept in a form suitable for consultation at a later date having regard to the need for confidentiality and the application of the Data Protection Act.
- 12.5 An individual seafarer is entitled to see the health and exposure records that relate to him personally.
- 12.6 Where, as a result of health surveillance:
- a worker is found to have an identifiable disease or adverse health effect which is considered by a doctor or occupational health-care professional to be the result of exposure at work to a hazardous chemical agent, or
  - a binding biological limit value is found to have been exceeded,
- the worker shall be informed by the doctor or other suitably qualified person of the result which relates to him personally, including information and advice regarding any health surveillance which he should undergo following the end of the exposure.
- 12.7 In the circumstances referred to in paragraph 12.6 above, the employer must:
- review his risk assessment;
  - review the measures provided to eliminate or reduce risks;
  - take into account the advice of the occupational health-care professional or other suitably qualified person or guidance from MCA or HSE on measures to eliminate or reduce risk including the possibility of assigning the worker to alternative work where there is no risk of further exposure, and
  - arrange continued health surveillance and provide for a review of the health status of any other worker who has been similarly exposed. In such cases the competent doctor or occupational health-care professional or the competent authority may propose that exposed persons undergo a medical examination.
- 12.8 Further guidance on health surveillance is set out in Annex 3 of this notice, as well as the Code of Safe Working Practice for Merchant Seafarers. More specialist health surveillance may be necessary in certain circumstances and employers may need to seek specialist occupational health advice in such an eventuality.

### 13 Consultation with workers (Regulation 13)



- 13.1 Consultation with workers shall take place in accordance with Regulation 20 of the General Duties Regulations. If the risk assessment has not identified the presence or potential presence of hazardous chemical agents on board or such hazardous agents are likely to be carried as cargo, with adequate controls in place, the only action required will be for the employer to advise workers that the risk assessment has identified no actual or potential risks.
- 13.2 Where actual or potential risks are identified by the risk assessment workers will need to be advised of this together with any measures taken in accordance with regulation 8 to prevent exposure to such chemical agents or to protect them from any exposure that may occur. In addition, they should be advised of any measures taken as required by regulation 9 to deal with accidents, incidents or emergencies or any provision under regulation 10 for health and safety training.
- 13.3 In relation to paragraph 13.2 above, the provisions of regulations 8 and 9 need not be complied with where the results of the risk assessment reveal only a slight risk to the health and safety of workers and the measures taken in accordance with regulation 7 - General Principles for Prevention of Risks - are sufficient to reduce that risk.

#### **14. Duties of other persons (Regulation 14)**

- 14.1 Where the employer concerned does not have responsibility for the operation of the vessel, any duty placed on the employer is extended to “any person who has control of that matter” to which the Regulation in question relates. This is in recognition of the situation on many ships that more than one employer can be responsible for the workers on board and effectively means that, whilst every employer is responsible for their own workers, an overall duty in respect of all workers on board, irrespective of who employs them, will be placed on the person(s) responsible for the actual operation of the vessel.
- 14.2 In addition to the duty referred to in paragraph 14.1 above, a duty is also placed on all workers requiring them to make full and proper use of all protective equipment provided by the employer, and to give effect to all instruction and training with which they have been provided.

#### **15. Offences, penalties and detentions (Regulations 15 - 22)**

- 15.1. Any contravention of the Chemical Agents Regulations is an offence and detention powers are available if conditions on board ship are clearly hazardous to health and safety. In addition, the Regulations specify maximum penalties, in line with other health and safety regulations, which may be imposed on individuals, companies etc for non-compliance with the requirements of the Regulations.

#### **16. Prohibition on levy (Regulation 23)**

- 16.1 In complying with the requirements of the Chemical Agents Regulations, employers are not permitted to pass on any charge, or permit any charge to be passed on, to any worker.

#### **17. References to this Notice in the Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Chemical Agents) Regulations**

- 17.1 The references to this Notice in the Merchant Shipping and Fishing Vessels (Health and Safety at Work) (Chemical Agents) Regulations 2010 as amended are indexed below. This is the version of MSN 1888 (M+F) which is considered to be relevant until further notice.



Regulation 11(1)(a): The list of chemical agents which may not be produced, manufactured or used on a ship is in part (a) of the table at Annex 1.

Regulation 11(1)(b): The list of activities which is prohibited is listed in part (b) of the table at Annex 1.

Regulation 11(2) and 11(6)(a): The list of chemical agents which can be produced for use as an intermediate if the Secretary of State grants an exemption from the prohibition is in part (a) of the table at Annex 1.

Regulation 12(5): The list of health surveillance measures is at Annex 2.

## **More Information**

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telephone numbers are correct at time of publishing

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***Safer Lives, Safer Ships, Cleaner Seas***



**PROHIBITED ACTIVITIES  
(Regulation 11(1)(a) and (b))**

The production, manufacture or use at work of the chemical agents and activities involving chemical agents set out below are prohibited. The prohibition does not apply if the chemical agent is present in another chemical agent, or as a constituent of waste, provided that its individual concentration therein is less than the limit specified.

| (a) Chemical Agents  |            |                               |                                   |
|--|------------|-------------------------------|-----------------------------------|
| EINECS No (1)  | CAS No (2) | Name of agent                 | Concentration limit for exemption |
| 202-080-4  | 91-59-8    | 2-naphthylamine and its salts | 0,1 % w/w                         |
| 202-177-1  | 92-67-1    | 4-aminodiphenyl and its salts | 0,1 % w/w                         |
| 202-199-1  | 92-87-5    | Benzidine and its salts       | 0,1 % w/w                         |
| 202-204-7  | 92-93-3    | 4-nitrodiphenyl               | 0,1 % w/w                         |
| (1) EINECS: European Inventory of Existing Commercial Substances |            |                               |                                   |
| (2) CAS: Chemical Abstracts Service                              |            |                               |                                   |

| (b) Work activities |
|---------------------|
| None.               |



**BINDING BIOLOGICAL LIMIT VALUES AND HEALTH SURVEILLANCE MEASURES  
(Regulation 12(5))**

1. Lead and its ionic compounds
  - 1.1. Biological monitoring must include measuring the blood-lead level (PbB) using absorption spectrometry or a method giving equivalent results. The binding biological limit value is

70 µg Pb/100 ml blood
  - 1.2. Medical surveillance is carried out if:
    - exposure to a concentration of lead in air is greater than 0,075 mg/m<sup>3</sup>, calculated as a time-weighted average over 40 hours per week, or
    - a blood-lead level greater than 40 µg Pb/100 ml blood is measured in individual workers.
  - 1.3. Practical guidelines for biological monitoring and medical surveillance must be developed. These must include recommendations of biological indicators (e.g. ALAU, ZPP, ALAD) and biological monitoring strategies.



## **PRACTICAL RECOMMENDATIONS FOR THE HEALTH SURVEILLANCE OF WORKERS**

1. The doctor and/or the authority responsible for the health surveillance of workers exposed to biological agents must be familiar with the exposure conditions or circumstances of each worker.
2. Health surveillance of workers must be carried out in accordance with the principles and practices of occupational medicine: it must include at least the following measures:
  - keeping records of a worker's medical and occupational history,
  - a personalised assessment of the worker's state of health.
  - where appropriate, biological monitoring, as well as detection of early and reversible effects.

Further tests may be decided on for each worker when he is the subject of health surveillance, in the light of the most recent knowledge available to occupational medicine.

