



Healthy
Workplaces
**MANAGE
DANGEROUS
SUBSTANCES**



Carcinogens at work

Key Points

- A carcinogen is a substance that is capable of causing, aggravating or promoting cancer in humans or animals. Some carcinogens can be inhaled, others may enter through the skin or mucous membranes. More detailed definitions are included in the European Directive and national legislation.
- Not every exposure to carcinogens will inevitably lead to cancer: some act following high-level, prolonged exposure, while others act at lower levels and following shorter exposure periods.
- There are a number of carcinogens that workers can be exposed to. Commonly known occupational carcinogens include asbestos, radon, certain pesticides, arsenic and tobacco smoke.
- Many of the carcinogens to which workers are most frequently exposed are generated by the work processes. Examples include diesel exhaust, welding fumes, crystalline silica dust and hardwood dust. Carcinogens may also be present in raw materials (including impurities), intermediates, products or by-products.
- The effects of exposure to carcinogens may occur a long time after exposure.
- Under EU legislation, particularly stringent measures — in addition to those required for other dangerous substances — must be taken by employers to prevent harm: eliminating exposure or where this is not possible strict substitution, keeping the carcinogen in a closed system, recording exposures, and stricter information and documentation requirements.
- Any detailed provisions for the occupational safety and health (OSH) management of carcinogens are laid down in national regulations. It is therefore strongly recommended that clarification of national requirements is sought.

Healthy Workplaces Manage Dangerous Substances

The European Agency for Safety and Health at Work (EU-OSHA) runs a Europe-wide campaign during 2018 and 2019 to promote the prevention of risks from dangerous substances in workplaces. The aim is to reduce the presence of and exposure to dangerous substances in workplaces by raising awareness of the risks and of effective ways of preventing them.

Workplace risk assessment

Employers must assess the risk of exposure to carcinogens and set preventive measures taking account of all possible means of exposure (including skin-related exposure) and including the storage of chemicals and waste. Data must be supplied to authorities upon request (for instance on activities, quantities, exposures, number of exposed workers or preventive measures). Special attention must be paid to people at particular risk and to mixtures produced as a **by-product of work processes** (https://oshwiki.eu/wiki/Process-generated_contaminants) (such as welding fumes or dust from stone cutting or hardwood processing).

Risk assessments shall be regularly revised, particularly as changes at the workplace may introduce carcinogens:

- changes in the composition of the products used;
- new products — the toxicity of any new product should be checked before it is introduced;
- changes in work processes or methods.

Agents that are currently regarded as acceptable may later be recognised as carcinogenic following new studies.

For more information on risk assessment, see the info sheet 'Legislative framework on dangerous substances in workplaces' (<https://healthy-workplaces.eu/en/tools-and-publications/publications/info-sheet-legislative-framework-dangerous-substances-workplaces>).

Information on risks

Safety data sheets (https://oshwiki.eu/wiki/Safety_Data_Sheet) and labels describe the hazards associated with labelled chemicals or products, and give information on handling, storage and emergency measures in cases of accidents, the identified use(s) of the substance, operational conditions and risk management measures. A safety data sheet is not a risk assessment. Employers should adjust the recommended measures to the specific conditions of each workplace.

However, not all substances have safety data sheets and even for those that do more information may be needed. Employers can:

- consult technical documentation, instructions for use, databases with information on chemical risks (such as the [European Chemicals Agency database](http://echa.europa.eu/web/guest/information-on-chemicals), <http://echa.europa.eu/web/guest/information-on-chemicals>), and technical and scientific literature;



- ask suppliers;
- consult preventive services;
- seek advice from trade associations, chambers of commerce, trade unions or social security services;
- contact authorities.

Hierarchy of prevention measures for carcinogens

Workers' exposure must be prevented by implementing measures in a defined order of priority.

- Elimination is the most effective measure and can be achieved by changing the technology used or the characteristics of the final product, to make the use of carcinogens unnecessary.
- Substitution means replacing the dangerous substance or product by a safer substance, product or process. It should not lead to other hazards with unacceptable levels of risk.
- If substitution is not technically possible, the employer shall use a closed technological system.
- If a closed system is not technically possible, the employer shall reduce exposure to a minimum.
- If there is a risk to workers, specified areas shall only be accessible to workers who, because of their work duties, are required to enter them.
- If a carcinogen is used, the employer shall:
 - limit the quantity of the carcinogen;
 - keep the number of workers exposed as low as possible;
 - design work processes to minimise substance release (i.e. use of collective prevention measures);
 - remove carcinogens by extraction ventilation at source;
 - use appropriate procedures to measure carcinogens (especially for early detection of abnormal exposures in the event of unforeseeable events or accidents);
 - use individual protection measures if collective protection measures are not sufficient;



- mark risk areas clearly and use adequate warning and safety signs;
- use sealed and clearly labelled containers for storage, handling, transportation and waste disposal.
- Exposure shall in no case exceed the occupational exposure limit value of a carcinogen, where one exists.

The employer must ensure proper hygiene (to minimise the risk of contamination). Provisions and conditions must be free of charge for workers, and include:

- the prohibition of eating, drinking and smoking in areas at risk of contamination;
- the provision of appropriate protective clothing and separate storage places for work and non-work clothing;
- access to appropriate washing and toilet facilities;
- the availability of appropriate and well-fitting, clean, checked and maintained protective equipment, stored in a well-defined place.

Occupational exposure limits (OELs) and monitoring

There are OELs in place for several carcinogenic substances. This information should be included in safety data sheets. Compliance with OELs should however be considered the minimum, and efforts should be made to lower exposure as much as possible below these values.

The monitoring of carcinogens should be part of a company's carcinogens management strategy and include periodic checks of the efficacy of control measures.

Maintenance and incidents

If tasks are foreseen that may result in a temporary, planned, higher exposure and this work is unavoidable (e.g. as part of maintenance), the employer must consult workers/representatives on appropriate prevention measures that will be taken to minimise exposure and control access.

Employers must inform workers/representatives about abnormal exposure incidents as quickly as possible. Only workers with appropriate protection and essential for repairs shall be permitted to work in the affected area. Exposures shall not be permanent and must be minimised.

Plans to deal with emergency situations involving carcinogens must be in place, and relevant training, periodic drills and the necessary means for intervention must be provided.

Consultation of workers, information and training

Workers and/or workers' representatives must be involved in identifying appropriate control measures. It has to be ensured that workers are able to assess whether or not legislation is being applied correctly.

The employer must provide workers with appropriate instructions and training relevant to their job that cover the potential risks to health and using control measures, hygiene requirements, protective equipment, clothing and handling incidents. Training needs to also raise awareness of risks that are not visible and effects that may only be seen after a long period.

Health surveillance

Member States have established arrangements for health surveillance of workers (prior to exposure, at regular intervals thereafter and some even after the end of exposure). If a worker is suspected of suffering ill health as a result of exposure, then health surveillance of other exposed workers may be required, and the risk must be reassessed. Individual medical records of concerned workers must be kept. Workers must have access to their personal data and be given information about any health surveillance that they may undergo following the end of exposure. The workers, or the employer may request a review of the results of the health surveillance.

Examples of tools and guidance

Are there carcinogens in your workplace? It's time to act! (IRSST, Canada) <http://www.irsst.qc.ca/media/documents/PubIRSST/RG-796.pdf>

This document describes a process for identifying carcinogens at work, assessing the risks and implementing appropriate prevention measures to reduce the risks. It includes a checklist.

Work environment carcinogens: what should an employee know? (National Institute for Health Development, Estonia) https://intra.tai.ee/images/prints/documents/135488464670_Tookeskkonna_kantserogenid.pdf

This guide deals with the potential effects of different carcinogens at work, safe handling and monitoring the health of exposed workers.

Guidance sheets for identifying and substituting carcinogens (INRS, France) <http://www.inrs.fr/actualites/nouvelles-far-fas.html>

The factsheets, compiled by OSH and technology experts, are continuously updated. There are 56 factsheets on how to identify and 38 factsheets on the substitution of specific carcinogens at work.

INFOCARQUIM — information on chemical carcinogens (INSST, Spain) <http://infocarquim.insht.es:86/Forms/About.aspx>

The INFOCARQUIM database is designed for industrial hygienists, healthcare and OSH professionals, employers and workers. It provides information on:

- the classification of carcinogens;
- the uses and applications of such agents;
- possible alternatives;
- tumours potentially related to each agent;
- production data.

Notification and record-keeping

Employers must keep an up-to-date list of exposed workers and give access to data, as requested, to authorised persons (doctors, authorities, workers and representatives). The competent authority must be notified of all cases of occupational cancers. Records shall be kept for at least 40 years following the end of exposure and transferred to the authority concerned if the company ceases to exist.

Measures for workers who may be particularly at risk

In carrying out a risk assessment, employers must pay particular attention to some groups of workers:

- according to the young workers Directive 94/33/EC, young people shall not work under conditions that expose them to carcinogens;
- the pregnant workers Directive 92/85/EEC provides that employers have to assess any risks and any possible effects on pregnancy or breastfeeding and take appropriate measures, for example moving a pregnant or breastfeeding worker to another position or granting leave;
- workers that may have difficulties understanding any guidance or training, such as migrant workers or new workers;
- workers who carry out maintenance and sub-contracted workers.

These workers shall receive training specific to their needs and be covered by appropriate prevention measures.

For more informations, please consult the infosheet 'Vulnerable workers and dangerous substances'.

Roadmap on Carcinogens

Cancer is estimated to be the leading cause of work-related deaths in the EU. On 25 May 2016, therefore, six European organisations committed to a voluntary action scheme — the **Roadmap on Carcinogens** (<https://roadmaponcarcinogens.eu/>) — to raise awareness, particularly in small and medium-sized enterprises (SMEs), of risks arising from exposure to carcinogens in the workplace and exchange good practice.

Member States, social partners, companies, research organisations and other organisations across Europe (and even beyond) are encouraged to participate in the activities:

- providing information on limit values, risk assessment methods and possible prevention measures;
- influencing behaviour and culture on the shop floor;
- and promoting specific examples of cost-efficient good practices, feasible for SMEs.

Read the **Covenant** (<https://osha.europa.eu/sites/default/files/carcinogens-covenant.pdf>) to see exactly what the partners have committed to.

Consult the **Roadmap** (<https://osha.europa.eu/sites/default/files/carcinogens-background-roadmap.pdf>) for full details of the joint efforts.

Further information

OSHWiki article on carcinogenic, mutagenic and reprotoxic substances
[https://oshwiki.eu/wiki/Category:Carcinogenic,_mutagenic,_reprotoxic_\(CMR\)_substances](https://oshwiki.eu/wiki/Category:Carcinogenic,_mutagenic,_reprotoxic_(CMR)_substances)

Directive 2004/37/EC on the protection of workers from carcinogens or mutagens at work
<https://osha.europa.eu/en/legislation/directives/directive-2004-37-ec-carcinogens-or-mutagens-at-work>

[#EUhealthyworkplaces](#)



www.healthy-workplaces.eu

© European Agency for Safety and Health at Work, 2019

Reproduction is authorised provided the source is acknowledged.

For reproduction or use of the pictures, permission must be sought directly from the copyright holder.

The photographs used in this publication illustrate a range of work activities. They do not necessarily show good practices or compliance with legislative requirements.