

Carcinogens and Mutagens: COSHH Guidance

There are specific requirements under the COSHH Regulations concerning working with **Carcinogens, Mutagens** and **Substances Toxic to Reproduction (STRs)**. These substances are often collectively referred to as **CMRs**.

Carcinogens are substances which may cause cancer. These are classified into three categories, as per the criteria within the Classification, Labelling and Packaging (CLP) of Substances and Mixtures Regulations (previously the CHIP Regulations):

- **Category 1A** (previously Cat 1) - substances known to have a carcinogenic potential for humans based largely on human evidence.
- **Category 1B** (previously Cat 2) - substances presumed to have a carcinogenic potential for humans based largely on animal evidence.
- **Category 2** (previously Cat 3) - suspected human carcinogens based on human and animal evidence but which is not sufficiently convincing to place the substance in Cat 1.

Categories 1A and 1B, will show the following Hazard Statements on the product label and / or safety datasheet, as provided by the supplier:

- **H350** (previously R45) - "may cause cancer" or
- **H350i** (previously R49) "may cause cancer by inhalation"



They will also display the "serious health hazard" symbol.

Category 2 will show the following Hazard Statements on the product label and / or safety datasheet, as provided by the supplier:

- **H351** (previously R40) - "Suspected of causing cancer"



They will also display the "health hazard" symbol.

NOTE: Category 2 substances are not included in the COSHH definition of a carcinogen, but are subject to the general requirements of COSHH.

Mutagens are substances that cause heritable genetic damage (mutations). Most mutations are harmful and most mutagens are carcinogens, and vice versa.

Substances that are known to impair fertility or to cause developmental toxicity in humans are defined as **Toxic to Reproduction. (STR)**. This definition covers a broader range of health effects than was included in the previous term "teratogenic", which applied only to substances that adversely affected the developing foetus.

As with carcinogens, mutagens and STRs are classified under Categories 1A, 1B and 2.

Category 1A and 1B Mutagens will show the following Hazard Statement on the product label and / or safety datasheet, as provided by the supplier:

- **H340** (previously R46) - "May cause genetic effects"

Category 1A and 1B STRs will show the following Hazard Statement on the product label and / or safety datasheet, as provided by the supplier:



- **H360** (previously R60/R61) - "May damage the unborn child/impair fertility".

Both will also display the "serious health hazard" symbol.

Category 2 Mutagens will show the following Hazard Statement on the product label and / or safety datasheet, as provided by the supplier:

- **H360** (previously R68) - "Suspected of causing genetic defects"



Category 2 STRs will show the following Hazard Statement on the product label and / or safety datasheet, as provided by the supplier:

- **H361** (previously R62/R63) - "Suspected of damaging fertility/the unborn child".

These substances, unlike carcinogens, are not explicitly described in COSHH. However, because of the nature of the hazard, the University considers them in the same way.

A comprehensive list of substances defined as carcinogens and mutagens for the purposes of COSHH is provided in '[EH40/2005 Workplace exposure limits](#)'.

Risk Assessment

An assessment of risk is required for all hazardous substances and is especially vital in the case of CMRs. Cancer or mutation may take years to develop, often with no early symptoms.

Wherever possible, the risk assessment must identify the means by which exposure can be **prevented** or, if not prevented, **controlled** as far as is reasonably practicable.

Prevention of exposure can be achieved through substitution with a lower risk substance, modifying the process to avoid using the carcinogen, or avoiding the formation of carcinogenic by-products or intermediates. Where this is not reasonably practicable, the principles set out in the COSHH Code of Practice must be applied.

Record the risk assessment: Where employees are likely to be exposed to carcinogens or mutagens, it is particularly important to ensure accuracy and continuity of knowledge and action. The assessment should be **reviewed** annually or when there are significant changes in substances, work method, equipment or workers, or other reason to think a review is needed (e.g. accident), whichever is sooner. If necessary, the assessment should be revised accordingly.

Whilst the use of the suitable control measures should be sufficient to prevent exposure to all workers, pregnant women and their unborn child may be particularly vulnerable to the effects of CMR substances. When a female worker becomes pregnant, she must immediately inform her line manager and/or the Faculty / Directorate Health & Safety Manager, so that an additional

risk assessment can be undertaken before carrying out any further work with these substances.

See also the [New & Expectant Mothers at Work University Webpages](#)

Female workers who work with CMRs and who are contemplating becoming pregnant should seek advice from their GP or from Occupational Health.

Monitoring of Exposure

Monitoring of exposure to carcinogens or mutagens is required by the COSHH Regulations to ensure that exposures are kept as low as possible and below any Workplace Exposure Limit (WEL) assigned to that substance. Exposure limits should be given in chemical suppliers' safety data sheets and are also documented in EH40/2005 Workplace Exposure Limits

Health Surveillance

Health surveillance is required unless the risk assessment shows that exposure to carcinogen(s) is so slight that it is insignificant. The type of health surveillance needed will depend on the risk assessment and will typically be undertaken by the Universities Occupational health provider.

- a) Substances known to, or suspected of, causing **skin cancer** (for example, non-solvent refined mineral oils, contaminated used mineral oils, arsenic, coal soots, coal tar)
 - any University employee who has significant exposure to these substances must be trained to carry out self-examination of their skin at regular intervals and to report any symptoms to the University Safety Unit (Ext. 9001) and their line manager, so that an Occupational Health assessment can be arranged.
- b) For employees who are significantly exposed to **other carcinogens or mutagens**, the University must keep individual health records containing the following information:
 - surname, forenames, sex, date of birth, permanent address, post code, National Insurance Number, date of commencement of present employment and a historical record of jobs involving exposure to substances requiring health surveillance in this employment.

Each record must be kept for at least 40 years from the date of the last entry made in it.

Information, Instruction and Training

Information, instruction and training are especially important for people who may be exposed to CMRs. It must ensure they are aware of the risks, including the additional risks of smoking and the need for control measures to be implemented and maintained.

They should have received sufficient instruction and training to follow the required measures to control exposure and the emergency procedures for uncontrolled releases of any CMRs.