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H & S Guidance - Carcinogens

INTRODUCTION

Carcinogens are substances, which have cancer-inducing effects on cells in the body. The active agents can be substances to which the body is exposed directly, or ones formed during the metabolism of those substances in the body. Much recent research has been directed at occupational cancer and there are a growing number of substances to which varying degrees of suspicion are attached.

The overall proportion of cancer that might be related to occupational exposure to substances hazardous to health is not known. Surveys have suggested that up to 30% of cancers are occupationally related and that 2% - 8% of cancer deaths each year could be prevented if all occupational hazards were removed.

Control of exposure to carcinogens requires special attention due to the following:

- most forms of cancer carry a high risk of premature death
- it is usually not possible to specify any 'safe' limits
- the long delay between first exposure and the occurrence of cancer.

LEGAL REQUIREMENTS

The Control of Substances Hazardous to Health Regulations apply to substances or preparations that would be in the category 'Danger, carcinogenic' classified under the 'CHIP' Regulations, or any substance or preparation listed in, or arising from processes specified in the schedule of the COSHH Regulations. Relevant examples from the local authority-enforced sector are given later in this section. The COSHH Regulations involve the assessment of risk from exposure to carcinogens including details of:

- (a) the nature of the hazard and the nature and extent of exposure
- (b) whether substitution by less hazardous substances is reasonably practicable (most preferred option)
- (c) the control measures to be applied to prevent or reduce exposure



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- (d) operating and maintenance instructions & procedures
- (e) precautions under non-routine conditions
- (f) use of personal protective equipment
- (g) any required monitoring procedures
- (h) any required health surveillance procedures - where exposures may exceed the Occupational Exposure Limits.
- (i) Consultation with employees (incl. information and training)

CARCINOGENS IN THE LOCAL AUTHORITY-ENFORCED SECTOR

All employers should be aware of the potential for carcinogens in the workplace. The information below is indicative only of certain examples that may be relevant in the local authority sector:

1. Petrol

Petrol can contain up to 5% of benzene, a known human carcinogen with a Maximum Exposure Limit (MEL) of 5 ppm. Petrol is consequently classified as Carcinogenic, Category 2 as it contains 0.1% or more of a known carcinogen.

Typically, monitoring by oil companies indicates that filling station occupational exposures are below 1 ppm (8 hour TWA) even for pump attendant operated sites. Many controls can be implemented/maintained to ensure that exposures are maintained as far below the 5 ppm MEL as possible, i.e.

- minimisation of spills, leaks or fumes
- provision of hygiene measures including washing facilities
- designation of areas and installations which may be contaminated with petrol and the use of warning signs
- safe storage, handling and disposal
- practices and procedures to deal with spillages
- monitoring, which is requisite under the Carcinogens Approved Code of Practice
- information, instruction and training.



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2. Mineral Oils

Certain mineral oils are known to cause cancer in humans. The carcinogenic potential of oil products is usually, but not always, associated with the presence of polycyclic aromatic hydrocarbons (PAHs).

Unrefined or mildly refined mineral oils contain substantial concentrations of PAHs and their use in the printing and metalworking industries (amongst others) in the past has led to skin cancer. Oil-soaked clothing and oily rags kept in overalls have been known to cause scrotal cancer. Studies of the PAH content of cutting oils have shown that PAH content increases with use.

Used engine oils have also been shown to have elevated PAH levels, which tend to be greater for petrol engines than for diesel engines. Prolonged and repeated contact with such oils can cause skin and scrotal cancer. Car mechanics, for example, would be at potential risk from used engine oils.

Where work with the above types of mineral oils is anticipated, COSHH assessments with appropriate actions of either substitution or control would be required. The latter will include the use of suitable and uncontaminated protective clothing and good personal hygiene.

3. Diesel fumes

There is believed to be a carcinogenic risk associated with the particulate component of diesel exhaust emission. The risk in most cases is thought to be low. A COSHH assessment would be required where there is exposure to engine exhaust emissions.

Control measures should include:

- (i) Application of Occupational Exposure Limits for appropriate components of exhaust emissions
- (ii) Exhaust removal systems, where it is necessary to run engines in enclosed areas
- (ii) Other working practices which either minimise emissions or exposure to them.



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4. Asbestos

Exposure to asbestos fibres can lead to a number of diseases including lung cancer and mesothelioma. Work with asbestos is regulated not by COSHH but by the Control of Asbestos at Work Regulations 1987 (as amended) and the Asbestos Licensing Regulations 1983. Exposure may arise from a number of situations where asbestos products might release fibres e.g. building maintenance work or garage workshops maintaining vehicles with asbestos - containing parts such as brakes, clutches etc. Further advice can be found in the Asbestos element of this manual.

5. Man Made Mineral Fibres (MMMF)

MMMF includes glass wool, rock wool, slag wool and ceramic fibres. MMMF have a MEL of 5 mg/m³ (8 hour TWA). The above MMMF are classified as Category 2 carcinogens (possibly carcinogenic). COSHH assessments are required where there is likely to be occupational exposure.

6. Wood dust

Wood dust is a general term that covers a wide variety of airborne wood dusts. It arises from the machining and working of woods and wood-containing materials such as chipboard and Medium Density Fibreboard (MDF). Timber has been divided into two groups, hardwood and softwood. Wood dust from both types have has been implicated in a number of adverse health effects. Both hardwood and softwood dust are 'Schedule 8' substances (under COSHH) and have a Maximum Exposure Limit - (MEL) of 5 mg/m³ (8 hour TWA). Exposure should therefore be reduced so far as reasonably practicable and, in any case, below the MEL. A COSHH assessment would be required where exposure was anticipated.

REFERENCES/FURTHER DETAILS

1. Booklet L5 – General COSHH ACOP, Carcinogens ACOP and Biological Agents ACOP. Control of Substances Hazardous to Health Regulations 1999. Approved code of Practice.

ISBN 0 7176 1670 3 (HSE)



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2.Guidance Note - Petrol at Retail Filling Stations - application of COSHH Carcinogens ACOP (UK Petroleum Industry Association, 9 Kingsway, London WC2B 6XF)

3. Guidance Note EH58 - The carcinogenicity of mineral oils.

SBN 0 11 885581 6. (HSE)

4.Booklet HSG67 - Health & Safety in Motor Vehicle Repair (HSE)
ISBN 0 7176 0483 7.

5. Guide to Risks from Used Engine Oils (Society of Motor Manufacturers and Traders Ltd., Forbes House, Halkin Street, London SW1X 7DS (Tel. 0208 - 235 - 7000))

6. Approved Code of Practice L27 - The control of asbestos at Work. ISBN 0 7176 1673 8.

7.Asbestos Materials in Buildings (Dept. of the Environment) ISBN 0 - 11 - 752370 - 4

8.Guidance Note EH10: Exposure limits and measurement of airborne dust concentrations. (HSE) ISBN 0 7176 0907 3.

9.Guidance Note EH46: Man-made mineral fibres (HSE)

ISBN 0 11 885571 9.

10.HSE Woodworking Information Sheet No. 1: Wood dust - Hazards and Precautions. www.hse.gov.uk/pubns/wis1.pdf

11.HSE Woodworking Information Sheet No. 11 - Hardwood Dust Survey. www.hse.gov.uk/pubns/wis11.pdf