







## Gradually Operating Disease Exposures - Hazardous Substances

### Risk Factors

As Insurers, we would expect an employer to be able to demonstrate adequate awareness, control and management of the risks arising from the presence of hazardous substances in their workplace.

The following are the risk factors which should be part of an effective COSHH risk assessment process:

- Hazardous properties of the substance (obtained from the SDS)
- Level of exposure to the substance(s) (e.g. amount and concentration of the substance)

#### Nature of the task / work activity

- Number of people exposed (e.g. segregation / separation)
- Type of exposure (e.g. vapour / mist based on activity such as spraying compared to application by brushing)
- Duration and frequency of exposure
- Controls
- Morphology (e.g. how the substance may change in the process, such as mixed / heated).
- Effects of mixtures

### Control Measures

After evaluating the risk and taking into consideration the existing controls, additional measures may need to be introduced to ensure that the risks are being adequately controlled. A common hierarchy of control is detailed below:

- **Elimination** of the substance or work practice / activity
- **Reduce** the use or frequency or substitute the substance for a lesser hazardous type (e.g. Trike very rarely used any longer as a degreasing agent) or change the physical form (e.g. pellets instead of dusts) or process / ways of working (e.g. automation or use of brush instead of spray).
- **Isolation** using enclosures / safety cabinets (e.g. fume cabinets / glove boxes / barrier isolators) for handling hazardous substances, enabling people to be isolated (or worker numbers reduced in the hazardous area) from the harmful substances.
- **Control** at source through engineering controls such as enclosures (e.g. containment to prevent free movement within the work environment) and the use of local exhaust ventilation (LEV) / extraction systems for fumes / dusts. LEV systems must be thoroughly tested and inspected by a competent person to ensure the systems are functioning correctly. Worker behaviour is an important aspect, specifically around compliance with control measures.



- **Provision** of personal and / or atmospheric exposure monitoring where appropriate.
- **Personal Protective Equipment (PPE)** which will provide a physical barrier between the individual worker and the risk. PPE includes overalls, gloves (can include gauntlets / full arm sleeves), eye protection, respirators or breathing apparatus, and must be suitable for the purpose, adequate (including face fit testing) and issued on a signed receipt basis. Furthermore, all non-disposable equipment, such as powered respirators / breathing apparatus should be maintained per manufacturer's recommendations, with records of any inspections / maintenance carried out retained.
- **Discipline** such as rules, signs and instructions.



The application of the hierarchy encourages the use of the highest level of control for those risks with the highest rating. Only when it is found that it is not possible to use this control should the next highest control be used. A combination of the above measures is often used to control / manage a risk adequately.

**PPE should be treated as a "last resort" if control of the exposure is not practicable by any other means. PPE does not eliminate the hazard and protects the user only and not the rest of the workforce. In addition, if the PPE fails, the employee will be exposed to the hazardous substances.**



## Monitoring and Health Surveillance

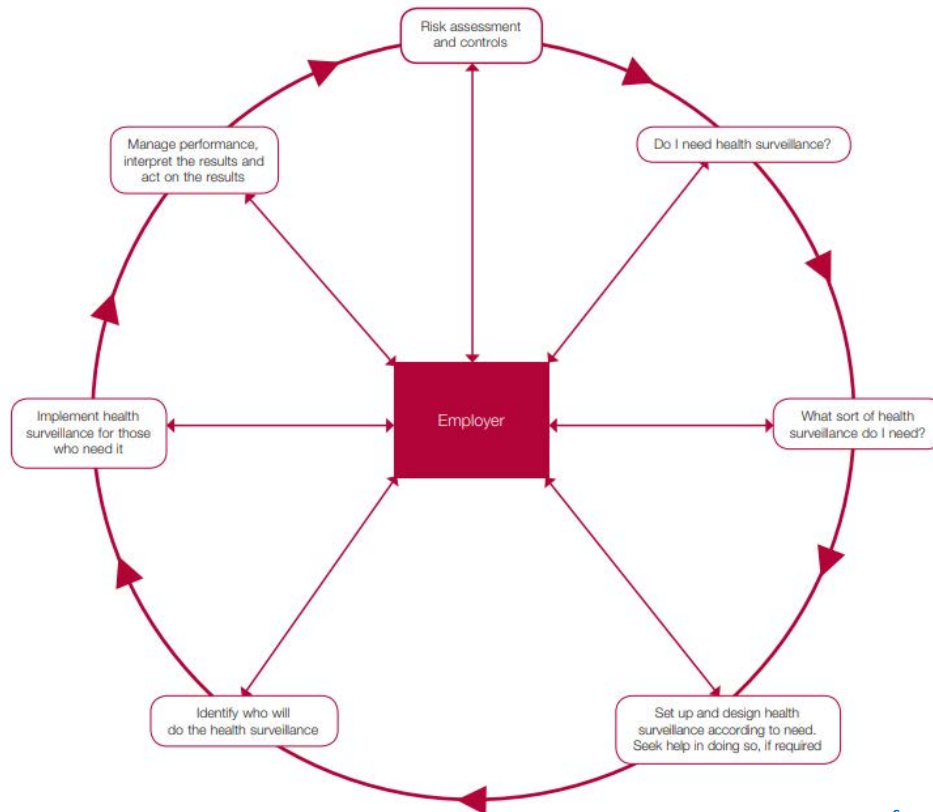
The results of relevant exposure monitoring and health surveillance will provide information on the effectiveness of the controls. If employees are being exposed to higher than intended levels of substances this can provide an indication of actual risk to their health and indicate areas where controls are not effective.

Monitoring is required to show compliance with the WELs or BMGV and confirm that the control measures are effective. Typical monitoring could be air quality monitoring / sampling, personal monitoring and biological monitoring.

The risk assessment should be used to identify if there is a need for Health Surveillance. Health surveillance can provide information on actual harm to health and illustrate that there may be a higher level of risk than was expected, it can also help identify groups of people particularly at risk (individual susceptibility).

Typical health surveillance must be carried out periodically by competent persons / medical practitioners and can include:

- Lung function / spirometry
- Biological (e.g. blood / urine analysis) testing
- Skin checks



Source: Arch Insurance

### Further information can also be found at:

Health and Safety Executive (HSE)

- [www.hse.gov.uk/coshh/index.htm](http://www.hse.gov.uk/coshh/index.htm)
- [www.hse.gov.uk/pubns/priced/hsg97.pdf](http://www.hse.gov.uk/pubns/priced/hsg97.pdf)
- [www.hse.gov.uk/pubns/priced/l5.pdf](http://www.hse.gov.uk/pubns/priced/l5.pdf)
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