COSHH Guidance

for managers in the NHS

Mercury

British Occupational Hygiene Society
Working for a healthier workplace

At present, this guidance excludes exposures to mercury in dentistry.

Harmful Effects

Mercury is a toxic metal; its acute effects include nausea, abdominal pain, and diarrhoea. Chronic effects from continued exposure to much smaller amounts are severe nervous disturbance, tremor, irritability, depression and kidney damage. Routes of exposure are by inhalation of the vapour and by permeation through the skin.

There is no UK Workplace Exposure Limit for metallic mercury vapour. There was an Occupational Exposure Standard of 0.025mg/m^3 (8-hour average).

Exposure Risks

Mercury is in common use in thermometers and sphygmomanometers. Exposures arise when these instruments are broken. If it is not removed, the mercury will evaporate slowly and people in the area will inhale the vapour. They may also contaminate their clothing and absorb mercury by skin contact. Mercury exposures from broken thermometers or sphygs are usually very low except when adverse factors combine for example: a large quantity spilled in a small poorly ventilated room occupied continuously by the same people.

Precautions

- There should be few if any clinical applications where mercury thermometers are necessary. Non-mercury sphygs are increasingly accepted by clinicians; all types of blood-pressure measuring devices require regular calibration and maintenance to avoid false readings. Buy non-mercury devices if clinically acceptable.
- Sphygmomanometers contain a large quantity of mercury; they require careful handling to avoid breakage.
- The following is an outline mercury spillage procedure. It assumes the existence of a competent person - the health and safety adviser - who will attend after the following procedure by local staff, to ensure a thorough clean up and proper disposal.

1 Make an on-the-spot assessment of the severity of the spill. Seek assistance whenever necessary.

2 Wear gloves. Collect as much mercury as possible using a 5 or 10ml syringe. Experimentation will be necessary to find the best angle to draw the heavy mercury into the tube. Use a piece of card to gather the droplets together if they are finely divided. Collect any broken glass and other debris into a suitable container. Use card rather than gloved hands if there is broken glass. Small pieces of broken glass which are uncontaminated by mercury are best disposed of in a sharps disposal box. Mercury spill kits are available commercially (eg Mercury Safety Products - 01159 213833). They should normally be used by a competent person - see point 6 below.

3 Put the syringe and any other container into which contaminated debris has been collected into double plastic bags. Tie the necks of the bags, label the package “Danger - Mercury. Do not touch), and put it in a safe place pending collection.

4 If a sphygmomanometer has survived relatively intact, apart from spillage of mercury into the case, protect any sharp edges by wrapping in sticky tape to avoid tearing holes in the bag, put the whole instrument into a plastic bag, tie the bag at the neck, label it as above, and put it in a safe place pending collection.

5 Do not use a vacuum cleaner on residual mercury; this can produce high vapour concentrations. Do not dispose of mercury in a sharps box, nor as domestic waste, nor into the drains: any of these would lead to environmental contamination by a highly persistent pollutant.

6 Contact your health and safety adviser for advice and disposal as hazardous waste. He/she will visit the department and check on the clean-up. If necessary, he/she will take measurements of mercury vapour.

7 Report and investigate the incident.

Guidance note 0506, June 2006: by practitioners in the field to assist in assessing and controlling risks.

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