

Code of Practice I: Guidance Notes for the Use of Mercury and its Compounds

1. Accountability

- (a) Strict care must be exercised in the storage, usage and disposal of mercury and its compounds, because of their known harmful effects. Mercury vapour has an occupational exposure level of 0.05 mg m^{-3} , above which such effects as nervous disturbance, insomnia and loosening of teeth may occur. Skin contact should be avoided as it has been known to lead to dermatitis and kidney damage. Water-soluble compounds are invariably toxic.
- (b) Do not use organomercury compounds without first consulting the Departmental Safety Coordinator.

2. Handling Elemental Mercury

- (a) Never leave a mercury surface open to the atmosphere: mercury has an appreciable vapour pressure at room temperature. Take advice from your supervisor or from the Departmental Safety Coordinator when setting up an apparatus in which mercury is required to move: an alternative fluid may be suitable.
- (b) Cover dirty mercury with aqueous H_2SO_4 (0.1 mol dm^{-3}) and return it immediately to Mr Hofmann in CG127C.
- (c) Recover spilled mercury immediately wearing rubber gloves as you work. If you spill mercury, you must clear the spillage. The usual method of recovery is to use suction through a glass capillary tube connected by pressure tubing to an aspirator (e.g. a Buchner flask) and a vacuum pump. If this method fails (for example if mercury falls into a crack in the floor) spread sparingly over the area of spillage either a paste of water, sulphur and calcium hydroxide or, preferably, zinc powder, which quickly forms an amalgam. Gather up all material used to deal with the spillage. A spillage kit is available from Mr Hofmann in CG127C.

Separate solid matter (e.g. glass, dust) from the mercury you recover by putting recovered mixture into a folded filter paper that you have pierced with a pin, and squeezing the mercury out through the pinhole. Put the paper into a disposal bag and treat it as solid heavy-metal waste.

You MUST ensure that no mercury enters the water-waste system.

- (d) Give your recovered dirty mercury to Mr Hofmann in CG127C.
- (e) There are no special recommendations for treatment to counter accidental exposure to mercury. Standard methods apply.
 - (i) For skin contact, wash the affected area thoroughly with cold water and remove contaminated clothing. This should be placed in a

polythene bag, sealed and labelled. Alternative clothing is available from the stores.

- (ii) For inhalation, leave the area where the exposure occurred (administer oxygen if breathing is laboured) and apply artificial respiration to a casualty who is unconscious.*
- (iii) For swallowing, administer large quantities of water or milk but do not induce vomiting.*
- (iv) For effects of exposure that do not lessen within a few minutes, take the casualty to a hospital and explain there that exposure to mercury is responsible.
- (v) Make a report in the Department's accident book if first aid was required, or if personal discomfort was experienced, or if defective practice or technique released mercury vapour.

[*Seek medical care as soon as possible in these cases.]

3. Departmental Mercury Service

Mr Hofmann provides the following service to users of mercury in the Department:

- (a) receiving used mercury properly treated (Part 2(b)), and storing it pending disposal in the waste store
- (b) providing chemicals and equipment to collect spilled mercury or to convert it to a harmless compound or mixture (Part 2(c)).

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