**ILO Toolkit Control Sheet 301** **Control approach 3**

**Containment**

# Design and Use of Glove Box

## SCOPE

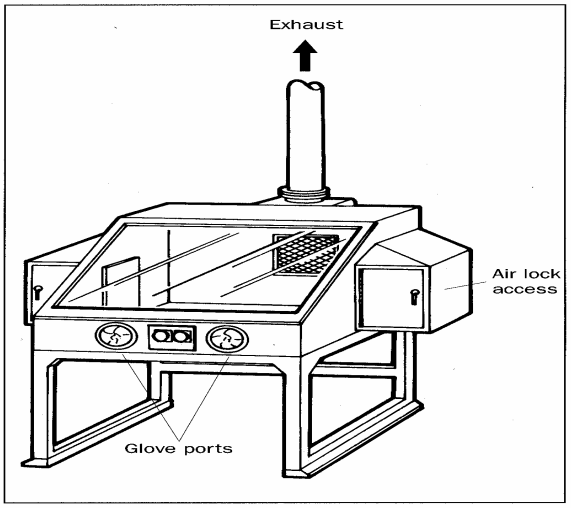
**This control sheet is part of the ILO Chemical Control Toolkit and should be used when the toolkit identifies that a control approach 3 solution is needed. The sheet gives good practice advice on the design and use of a glove box. It describes the key points you have to follow to reduce exposure to an adequate level. It is important that all the points are followed. Some chemicals are flammable or corrosive and your controls must be suitable for those hazards too. Look at the safety data sheet for more information. This sheet identifies the minimum standards you need to apply to protect your health. It should not be used to justify a lower standard of control than that which may be required for process control or control of other risks**.

## ACCESS

- Keep unnecessary people away from the work area. Ensure that no one is working close by downwind.

## DESIGN AND EQUIPMENT

- Access to the glove box should be by one or more air locks.




- Surfaces inside the glove box should be smooth, impermeable and easily decontaminated. Strippable plastic coating can be used to simplify decontamination.
- Edges inside the box should be rounded to enable easy cleaning.
- All services needed with the glove box should have their controls positioned outside the unit.
- Gloves should be resistant to the chemicals being used and sealed to the glove ports.
- Provide good lighting – 250 lux or more at the work surfaces.
- Apply ventilation to achieve a slight negative pressure within the unit. A filter will need to be fitted on the air inlet system.
- The exhaust air will usually need to be passed through a suitable scrubber or high efficiency filter before discharge.
- Discharge extracted air to a safe place away from doors, windows and air inlets.

## EXAMINATION, TESTING AND MAINTENANCE

- Ensure all equipment used is maintained in good repair and efficient working order. Have the system thoroughly examined and tested at least once a year.
- Check that the extraction system is working every day when it is switched on.

- Visually check the ducting once a week for signs of damage, and repair when necessary.
- Document and follow any special procedures that are needed before the system is opened or entered, e.g. purging or washing.
- Check all the equipment once a week for signs of damage and repair when necessary.

## CLEANING AND HOUSEKEEPING

- Clean the work equipment and work area daily.
- Spills are the major cause of dust or vapour in the workplace. Clean up all spills immediately.
- Don't clean up dusts with a brush or compressed air. Use a damp cloth or vacuum.
- Put lids on containers immediately after use.
- Store containers in a safe place where they won't get damaged.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Chemicals in hazard group S can damage the skin or eyes, or enter the body through the skin and harm you. Sheets Sk100 and Sk101 give good advice on how to keep the materials off your skin.
- Check the material safety data sheet or ask your supplier to find out what personal protective equipment is needed.
- Respiratory protective equipment (RPE) should not be needed for routine tasks, but may be necessary for cleaning and maintenance activities and when dealing with spills.
- Look after your protective equipment. When not in use, keep it clean and store it in a clean, safe place.
- Keep your protective equipment clean and change it at recommended intervals or when it is damaged.

## TRAINING AND SUPERVISION

- Tell your workers about any harmful properties of the substances they are working with and why they must use the controls and PPE provided.
- Teach them to handle chemicals safely. Check controls are working and ensure that they know what to do if something goes wrong.
- Have a system to check that the precautions you have put in place are being followed