Bulk sampling

Control approach 3

Containment

What this sheet covers
This sheet describes good practice for taking samples – process fluids, well fluids, aviation fuel etc. It covers the key points you need to follow for good control practice to control exposure as part of your COSHH assessment.

Hazards
✓ Not possible to list all substances that are sampled but the main ones are: process fluids, which are complex mixtures in the liquid state (crude oil, condensate) and will contain BTEX (benzene, toluene, ethyl benzene and xylenes); natural gas (predominantly methane); and liquefied petroleum gases (butane and propane).
✓ Health risks include cancer, genetic damage, reproduction effects, and sensitisation by inhalation or skin contact.
✓ The workplace exposure limit (WEL) for benzene is 1 ppm (8-hour time-weighted average (TWA)). Keep exposure as far below this as reasonably practicable.

Access
✓ Fit sampling points that are safe and easy to access.
✓ Provide safe access to sampling points.

Facilities
✓ Provide for drainage to appropriate drains, eg closed drains.
✓ Provide for gas venting to a safe place, eg a flare stack or cold vent.

Equipment and procedures

Planning
✓ Define the sampling procedures and valve sequences.

Control equipment

Sampling glycols and hydrocarbons
✓ Provide sampling cylinders with locking connectors, ullage tubes and bursting discs of the correct rating.
✓ Ensure that these match the sampling points.
✓ Ensure good general ventilation.
✓ Provide a spillage clean-up kit.
✓ Provide eyewash equipment close to the work site.
Safe sampling

- For process fluids/gases, sample into a piston-type cylinder or a flow-through ‘bomb’ with a vent line. The sampling receptacle must be of a suitable pressure rating.
- For hazardous, non-pressurised materials, flush for safe disposal before sampling into a container. You may need to provide personal protective equipment.

Caution: Avoid glass containers whenever possible. Avoid plastic containers with flammable materials. Some sample streams can be hot.

Emergency procedures

- Ensure operators close valves if leaks occur or the bursting disc ruptures.

Personal protective equipment (PPE) – see OCM3

- Respiratory protective equipment (RPE) is not normally needed.

Other protective equipment

- Where necessary, provide additional eye protection (visor or goggles).
- Ensure workers wear protective gloves for sampling. Single-use nitrile or PVC gloves are acceptable.
- Discard gloves at the end of the task.
- Tell workers to discard single use gloves every time they take them off.

Maintenance, examination and testing

Checking and maintenance

- Check for signs of damage to control equipment before starting work.
- Follow manufacturers’ instructions for inspecting and maintaining sampling cylinders.

Exposure monitoring

- Monitoring is not normally necessary. However, some personal benzene monitoring should be carried out to establish the effectiveness of controls.

Cleaning and housekeeping

- Place a temporary bund to contain any spillage.
- Clear up small spills with inert absorbent pads. Dispose as hazardous waste.

Waste

- Residues are ‘hazardous waste’. Label containers clearly – include a UN number where appropriate. Store and dispose of waste safely.

Personal decontamination and skin care

- Provide warm water, mild skin cleansers, nailbrushes and soft paper, fabric towels or hot air for drying. Avoid abrasive cleaners.
- Provide pre-work skin creams, which will make it easier to wash dirt from the skin, and after-work creams to replace skin oils.
Health surveillance
✓ Conduct skin checks for dermatitis.

Training and supervision
✓ Provide supervision – ensure that safe work procedures are followed.
✓ Tell workers, including maintenance workers, what the hazards and risks are.
✓ Explain the early signs of dermatitis.
✓ Training includes toolbox talks on:
  ■ following safe working procedures;
  ■ how to use equipment properly;
  ■ how to clean up spills correctly; and
  ■ what to do if something goes wrong.
✓ Involve managers and supervisors in health and safety training.

Essential information
OCE0 Advice for managers
OCM3 Personal protective equipment (PPE)
OCM4 Respiratory protective equipment (RPE)

Employee checklist
☐ Is the equipment in good condition and working properly?
☐ Do you know how to use the control equipment properly?
☐ Look for signs of leaks, wear and damage before every job.
☐ Do you have a spill clean-up kit handy?
☐ If you find any problem, get it fixed. Don’t just carry on working.
☐ Wash hands before eating, drinking or using the lavatory.

Other hazards
■ Flammability
■ Substances harmful to the marine environment

Further information
www.hse.gov.uk/pubns/books/hsg254.htm

Workplace exposure limits EH40
www.hse.gov.uk/coshh/table1.pdf

You can find the full Offshore COSHH essentials series at
www.hse.gov.uk/coshh/index.htm

This guidance was developed by representatives from the UK offshore oil and gas industry and trade unions, with HSE.