

# OCE12

## Offshore COSHH essentials



This information will help offshore dutyholders (owners, operators and contractors) to comply with the Control of Substances Hazardous to Health Regulations 2002 (COSHH), as amended, to protect workers' health.

This guidance consolidates good control practice and reinforces existing knowledge with additional information.

It will help you carry out COSHH assessments, review existing assessments, deliver training and in supervising activities involving substances hazardous to health.

It is aimed at staff whose responsibilities include the management of substances hazardous to health on offshore installations (eg occupational health specialists, COSHH assessors, supervisors etc). It is also useful for trade union and employee safety representatives.

Following this guidance is not compulsory and you are free to take other action. But if you do follow this guidance, you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.

Also see essential information on the back of the sheet.

# Breaking containment – hydrocarbon lines

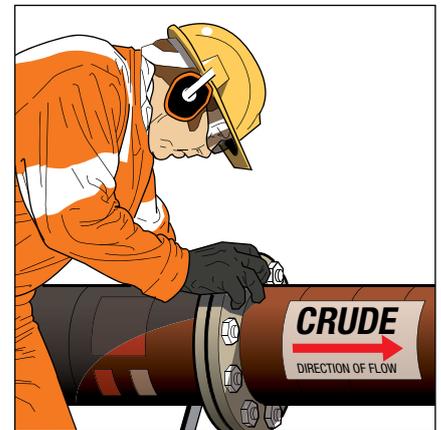
## Control approach 1 General ventilation

### What this sheet covers

This sheet describes good practice for opening hydrocarbon lines. It covers the key points you need to follow to help reduce exposure to an acceptable level, as part of your COSHH assessment.

### Hazards

- ✓ Process fluids 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, narcosis, and toxicity 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.
- ✓ Hydrogen sulphide (H<sub>2</sub>S) may be present in hydrocarbon process systems, particularly when reservoirs begin to mature and water out (see OCE6).
- ✓ Mercury may also be present in process plant and vessels (see OCE14).



### Access and equipment

- ✓ Erect barriers and notices.
- ✓ Restrict access.
- ✓ See sheet OCM1 if work is in a confined space.

### Planning and procedures

#### Planning

- ✓ Define the isolation standards and routines for draining, purging and venting.
- ✓ Provide for drainage to appropriate drains, eg closed drains.
- ✓ Provide for gas venting to a safe place, eg a flare stack or cold vent.

### Control equipment

- ✓ In poorly ventilated areas, provide enough fresh air to dilute and remove air contaminants.
- ✓ Provide a benzene-specific monitor.
- ✓ Provide a spillage clean-up kit.
- ✓ Provide eyewash equipment and an emergency shower close to the work site.

### Control procedures

- ✓ Isolate the line for safe opening.
- ✓ Connect via valves and lock the pipework to the appropriate drain. Purge and drain the fluids.
- ✓ Vent pressurised gases to a safe place.
- ✓ Prove isolation. Carry out pressure build-up (PBU) checks.
- ✓ Prove it is free of gas, if necessary, have the authorised tester perform the gas test.
- ✓ Workers should break joints gently. In the event of an unexpected release, workers should evacuate the area immediately and raise the alarm.
- ✓ Fit 'Disturbed joint' tags on broken joints.
- ✓ Fit and leak-test blind flanges within 12 hours if the work is not finished.
- ✓ Never allow pipe ends to remain open.
- ✓ Test for leakage on remaking the joint.

### Personal protective equipment (PPE)

- ✓ Where necessary, provide CE-marked respiratory protective equipment (RPE) with an assigned protection factor of at least 10 for vapour.

### Other protective equipment

- ✓ Where necessary, provide chemical eye protection (visor or goggles) in addition to standard eye protection.
- ✓ Provide disposable coveralls (type 6).
- ✓ Provide clean chemical-resistant gloves, eg nitrile, and new gloves when these are damaged.

## Maintenance, examination and testing

### Checking and maintenance

- ✓ Make and follow schedules for preventative maintenance of plant and monitoring equipment.
- ✓ Before each use, check that portable monitors are fully charged and working properly.
- ✓ Check for signs of damage to control equipment before starting work.

### Records

- ✓ Keep records of all examinations and tests for at least five years.

### Exposure monitoring

- ✓ Prove that you are using the right level and type of RPE – use monitoring records or carry out personal air monitoring.
- ✓ Use personal monitoring results to decide if you need to carry out biological monitoring for benzene.

## Employee checklist

- Are you sure about safe work procedures?
- Is the equipment in good condition and working properly?
- Is your portable/personal alarm fully charged and working properly?
- Is your respirator working properly? Check it every time.
- 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.
- Discard single-use gloves every time you take them off. Discard other gloves at the end of the shift.
- Wash hands before eating, drinking or using the lavatory.

## 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 cleansers.
- ✓ Provide pre-work skin creams, which will make it easier to wash dirt from the skin, and after-work creams to replace skin oils.

**Caution:** 'Barrier creams' or 'liquid gloves' do not provide a full barrier.

## Training and supervision

- ✓ Provide supervision – ensure that safe work procedures are followed.
- ✓ Tell workers, including maintenance workers, what the hazards and risks are.
- ✓ Training includes toolbox talks on:
  - following safe working procedures;
  - how to use equipment properly;
  - how to use the benzene monitor;
  - how to react to alarms and evacuate safely;
  - how to use RPE and check that it is working;
  - 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*

OCM1 *Confined spaces*

OCM3 *Personal protective equipment (PPE)*

OCM4 *Respiratory protective equipment (RPE)*

OCM5 *Emergency planning*

OCE6 if hydrogen sulphide is present

ORE1 if NORM is present

OCE14 if mercury is present

## Other hazards

- Flammability
- Hydrogen sulphide (H<sub>2</sub>S)
- NORM (naturally occurring radioactive material)
- Substances harmful to the marine environment

## Further information

*Respiratory protective equipment at work: A practical guide* HSG53 (Third edition)  
HSE Books 2005  
ISBN 978 0 7176 2904 6  
[www.hse.gov.uk/pubns/books/hsg53.htm](http://www.hse.gov.uk/pubns/books/hsg53.htm)

*The safe isolation of plant and equipment* HSG253  
HSE Books 2006  
ISBN 978 0 7176 6171 8  
[www.hse.gov.uk/pubns/books/hsg253.htm](http://www.hse.gov.uk/pubns/books/hsg253.htm)

*Guidance on permit-to-work systems: A guide for the petroleum, chemical and allied industries* HSG250 HSE Books 2005  
ISBN 978 0 7176 2943 5  
[www.hse.gov.uk/pubns/books/hsg250.htm](http://www.hse.gov.uk/pubns/books/hsg250.htm)

*Developing process safety indicators: A step-by-step guide for chemical and major hazard industries* HSG254 HSE Books 2006  
ISBN 978 0 7176 6180 0  
[www.hse.gov.uk/pubns/books/hsg254.htm](http://www.hse.gov.uk/pubns/books/hsg254.htm)

*Workplace exposure limits* EH40  
[www.hse.gov.uk/coshh/table1.pdf](http://www.hse.gov.uk/coshh/table1.pdf)

You can find the full Offshore COSHH essentials series at  
[www.hse.gov.uk/coshh/index.htm](http://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.**