

# OCE14

## 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 – mercury

## Control approach R

### Respiratory protective equipment

#### What this sheet covers

This sheet describes good practice where mercury (metal, inorganic or organic) occurs naturally in crude, condensate or gas streams during production operations. It covers the key points you need to follow to help reduce exposure to an acceptable level, as part of your COSHH assessment.

#### Hazards

- ✓ Mercury vapour can condense from gas streams and accumulate on cold surfaces. Steel surfaces can collect mercury. Mercury vaporises easily.
- ✓ Health risks include damage to the nervous system and kidneys.
- ✓ See 'Further information' for where to find more about exposure limits.
- ✓ The EU indicative occupational exposure limit value (IOELV) for mercury and its inorganic compounds is set at 0.02 mg/m<sup>3</sup> (8-hour time-weighted average (TWA)).
- ✓ OSHA and NIOSH have set an exposure limit of 0.01 mg/m<sup>3</sup> (8-hour TWA) for organic mercury compounds.
- ✓ The UK biological monitoring guidance value for mercury in urine is 20 micro mol mercury per mol creatinine.

#### Access

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

#### Equipment and procedures

##### Design

- ✓ Where mercury is known or suspected, design vessels and pipework with mercury traps.

##### Planning

- ✓ Keep a record/log of known mercury areas.
- ✓ Label plant and equipment where mercury is known to collect.
- ✓ Define the isolation standards and routines for draining, purging and venting.
- ✓ Ensure that pipework/hoses used for flushing is made of suitable material to transport.

---

### *Control equipment*

- ✓ Provide enough fresh air to dilute and remove air contaminants.
- ✓ Provide monitoring by mercury meter.
- ✓ Respiratory protective equipment is normally required.

### *Control procedures*

- ✓ Isolate the line for safe opening.
- ✓ Drain, purge and flush the system. Test for mercury.
- ✓ Prove it is free of gas. If necessary, have the authorised tester perform the gas test.
- ✓ Check filters and drain traps for signs of mercury.
- ✓ Clear up mercury residues with a spill kit.

### *Mercury collection*

- ✓ Collect mercury droplets, eg with a vacuum cleaner having a mercury vapour filter.
- ✓ Remove mercury on contaminated surfaces by adding sulphur and leaving overnight to form an amalgam or use a commercially available mercury spill kit.

### *Personal protective equipment (PPE) – see OCM3*

- ✓ Respiratory protective equipment (RPE) is needed where monitoring shows mercury is present.
- ✓ Provide CE-marked RPE with an assigned protection factor of at least 10 for mercury.
- ✓ Breathing apparatus (BA) or air-fed RPE, CE marked with an assigned protection factor of at least 40, is likely to be needed for confined space work.
- ✓ Filtering RPE must be fitted with mercury and hydrocarbon vapour cartridges.

### *Other protective equipment*

- ✓ Provide disposable coveralls (type 4).
- ✓ Use rubber wellington boots for ease of cleaning.
- ✓ Provide clean chemical-resistant gloves, eg nitrile, and new gloves when these are damaged.
- ✓ Discard gloves at the end of the shift.

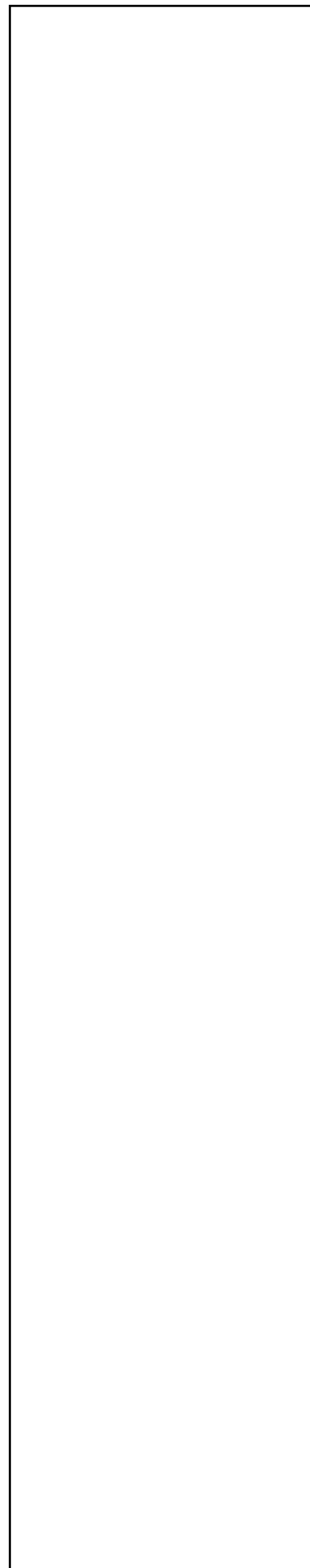
## **Maintenance, examination and testing**

### *Checking and maintenance*

- ✓ Make and follow schedules for preventative maintenance of plant and monitoring equipment.
- ✓ Before use, check the air lines for supplied-air BA.
- ✓ Check for signs of damage to control equipment before starting work.

### *Examination and testing*

- ✓ Calibrate a mercury meter at least once a month and check that it works properly before every use.



### RPE

- ✓ Check the airflow and air quality to air-fed RPE at least monthly and infrequently used RPE at least three monthly, or before use. Check in-line filters.
- ✓ Examine and test RPE thoroughly at least monthly and infrequently used RPE at least three monthly. Replace worn parts.
- ✓ Ensure that breathable air compressors take in clean air.

### Records

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

### Exposure monitoring

- ✓ Monitor mercury in the air by meter.
- ✓ Prove that you are using the right level and type of RPE – use monitoring records or carry out personal monitoring.
- ✓ Personal air monitoring may be appropriate for major work involving exposure to mercury.
- ✓ Use biological monitoring for workers potentially exposed to mercury.

### Cleaning and housekeeping

- ✓ Keep a small mercury spill clean-up kit nearby during the task. The kit should also contain PPE.
- ✓ Label bags of dirty clothing to warn the laundry about the hazard.

### 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.
- ✓ Provide a spillage clean-up kit.
- ✓ Provide eyewash equipment and an emergency shower close to the work site.

### 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 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.

## Employee checklist

- Are you sure about safe work procedures?
- Is the equipment in good condition 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. Throw away other gloves at the end of the shift.
- Wash before eating, drinking or using the lavatory.

## Essential information

OCE0 *Advice for managers*  
OCM1 *Confined spaces*  
OCM3 *Personal protective equipment (PPE)*  
OCM4 *Respiratory protective equipment (RPE)*  
OCM6 *Exposure monitoring*  
OCM7 *Health surveillance*  
OCE6 if hydrogen sulphide is present  
ORE1 if NORM is present

## Other hazards

- NORM (naturally occurring radioactive material)
- Substances harmful to the marine environment

## Further information

*Mercury and its inorganic divalent compounds in air: Laboratory method using Hydrar diffusive badges or pumped sorbent tubes, acid dissolution and analysis by cold vapour atomic absorption spectrometry or cold vapour atomic fluorescence spectrometry MDHS16/2* (Second edition) HSE Books 2002

[www.hse.gov.uk/pubns/mdhs/](http://www.hse.gov.uk/pubns/mdhs/)

*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)

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.**