

OCE10

Offshore COSHH essentials



Chemical injection

Control approach 3 Containment

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.

What this sheet covers

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

The sheet does not cover breach of containment.

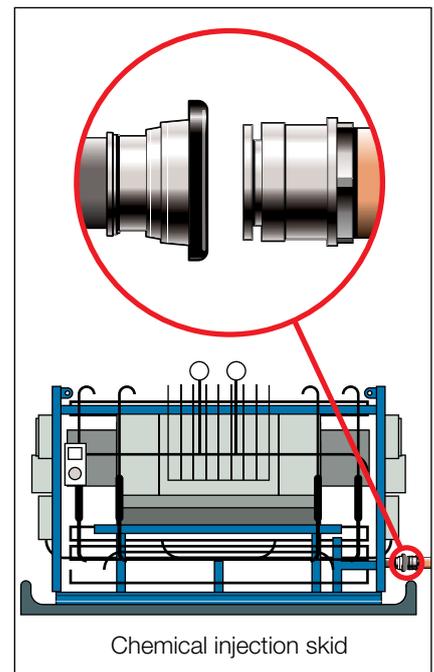
Hazards

- ✓ Products include wax, scale and corrosion inhibitors, biocides, de-oiling and anti-foaming agents, and oxygen and hydrogen sulphide scavengers. These include substances such as alcohols, alkyl/butyl benzenes, (poly) amines, aldehydes and anhydrides.
- ✓ Health effects include burns, dermatitis, eye and respiratory irritation and asthma.

Facilities

Storage

- ✓ Where appropriate, provide a well-ventilated, flameproof store with spill clean-up kits.
- ✓ Keep tanks and containers in defined, bunded areas.
- ✓ Label tote tanks, containers and lines clearly.
- ✓ Vent air displaced from bulk liquids to a safe place.
- ✓ Segregate incompatible materials, and segregate waste.
- ✓ Clearly display the labels on chemical containers.
- ✓ Provide for drainage to appropriate drains, eg closed drains.
- ✓ Provide eyewash equipment and an emergency shower close to the work site.



Equipment and procedures

Planning

- ✓ Ensure that connecting hoses are correctly rated, and that transfer rates for pumped fluids are written and displayed.
- ✓ Define procedures for start up, normal operation and shutdown. Include maintenance shutdown and start up.
- ✓ Prepare written procedures for the sequences of valve opening and injection rates.

Control equipment

- ✓ Install dedicated, labelled transfer lines between supply boats and tote tanks, and to the injection point.
- ✓ Provide bunds for chemical injection tanks.
- ✓ Use dry-release couplings only.
- ✓ Provide low-level and high-level alarms on tote tanks.
- ✓ Where necessary, chemical pumps may need multiple heads to supply multiple injection points.
- ✓ Ensure that displaced vapours vent to a safe place or to a vapour recovery system.

Control procedures

- ✓ Activate each pump head and calibrate its flow rate. Set the volume to be dispensed from each head.
- ✓ For multi-head pumps, activate heads one by one. Don't turn them all on at once.

Emergency procedures

- ✓ Ensure operators close down the transfer process if fluids are leaking.
- ✓ In the event of a significant spillage contact the control room or follow established spill procedure.

Personal protective equipment (PPE) – see OCM3

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

Maintenance, examination and testing

Checking and maintenance

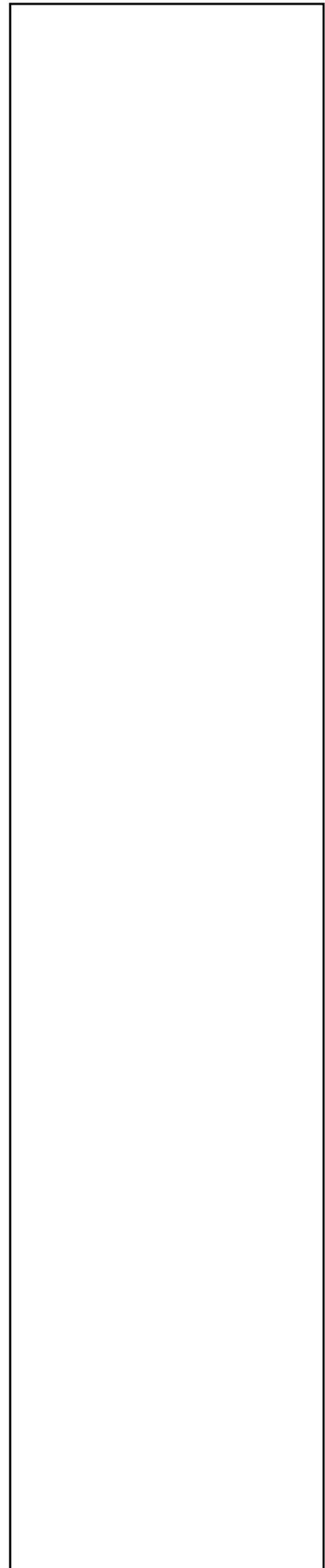
- ✓ Make and follow schedules for preventative maintenance of plant and monitoring equipment.
- ✓ Follow the planned maintenance regime (PMR).
- ✓ Check that the level alarms in tote tanks are working properly.

Exposure monitoring

- ✓ Monitoring is not normally necessary.

Waste

- ✓ Drain liquid residues to appropriate drains through hoses and valve connectors.



Training and supervision

- ✓ Provide supervision – ensure that safe work procedures are followed.
- ✓ Hazardous substances used and their health effects.
- ✓ Tell workers, including maintenance workers, what the hazards and risks are.
- ✓ Training includes toolbox talks on:
 - how to use equipment properly;
 - how to use the right safe working procedures;
 - 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*

OCM5 *Emergency planning*

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.
- 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

Tote tanks

www.stepchangeinsafety.net

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

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.