

G101

General storage of solids and liquids

COSHH essentials



The Control of Substances Hazardous to Health Regulations 2002 (COSHH) require employers to ensure that exposure is prevented or, where this is not reasonably practicable, adequately controlled. This guidance gives practical advice on how this can be achieved by applying the principles of good practice for the control of exposure to substances hazardous to health, as required by COSHH.

It is aimed at people whose responsibilities include the management of substances hazardous to health at work (eg occupational health specialists, anyone undertaking COSHH assessments, supervisors and is also useful for trade union and employee safety representatives). It will help you carry out COSHH assessments, review existing assessments, deliver training and supervise activities involving substances hazardous to health.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the 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.

See Essential information near the end of the sheet.

Control approach 1 General ventilation

What this sheet covers

This sheet describes good control practice for the general storage of small, medium or large scale quantities of solids and liquids.

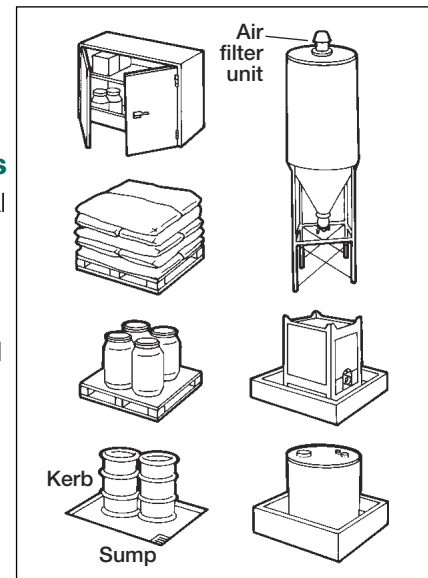
It covers the key points to follow to reduce exposure to an adequate level. Follow all the points, or use equally effective measures.

Access to work area

- ✓ Allow access to authorised and appropriately trained people only.

Equipment and procedures

- ✓ Provide a good standard of general ventilation. This can be natural ventilation from doors, windows etc, or controlled, where air is supplied or removed by a powered fan.
- ✓ Ensure all powered fans are appropriate for the contaminants being controlled, ie suitable for explosive, corrosive and flammable substances.
- ✓ Define a specific area for storage and put up signs.
- ✓ Ensure the area is spacious, tidy, well lit and ventilated.
- ✓ Provide enough space to easily deal with spills.
- ✓ Label all containers, including partly used ones.
- ✓ Floors should be impervious, resistant to liquids and easy to clean.
- ✓ Keep easily ignitable materials, such as empty packaging, in a separate store room and oxidising chemicals in dedicated buildings (away from flammable materials).
- ✓ Ask your chemical supplier for specific advice on which chemicals to store separately from others.



Small packages

- ✓ Small packages should be stored in a suitable, robust storage cabinet.
- ✓ Use removable trays within cabinets to contain leaks and spills, and to make cleaning easier.
- ✓ Store chemicals that readily react together in separate cabinets.
- ✓ Address flammability hazards if you use refrigerators for storage.

- ✓ Quantities of less than 50 litres of highly flammable liquids can be stored in suitable bins or cabinets in designated areas away from working or processing areas.
- ✓ Never store more than 50 litres of highly flammable liquids in the workroom.

Sacks and drums

- ✓ Make sure spills can be contained, eg by using sump pallets or having kerbed areas.
- ✓ Store chemicals that react readily together at least 3 metres apart.
- ✓ It is recommended that no more than 250 litres of liquids with a flashpoint in the range of 320°C to 550°C are stored in the workroom, in a fire resisting cupboard or bin.

Silos

- ✓ Provide dust filtration for air displaced from the silo during filling.
- ✓ Put barriers around the silo to prevent damage, eg by fork-lift trucks.
- ✓ Individually label feed lines.
- ✓ Consider explosion relief for combustible solids and ensure that equipment is appropriately earthed.

International bulk carriers (IBCs) and storage tanks

- ✓ Make sure spills can be contained, eg by bunding to hold 110% of the volume of the largest container.

Respiratory protective equipment (RPE)

- ✓ RPE is normally not needed.
- ✓ RPE may be needed for some cleaning and maintenance activities, eg dealing with spills.

Personal protective equipment (PPE)

- ✓ Chemicals identified by COSHH Essentials as **hazard group S** can damage the skin and eyes, or enter the body through the skin and cause harm. Check the safety data sheets to see what PPE is needed.
- ✓ Ask your supplier to advise on suitable protective equipment.
- ✓ Make suitable arrangements for maintenance, storage and replacement of PPE.

Personal decontamination

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

Caution: 'Barrier creams' are not 'liquid gloves' and they do not provide a full barrier.

Maintenance, examination and testing

- ✓ Keep all equipment used for the task in effective working order. Maintain it as advised by the supplier or installer.
- ✓ Check for signs of damage to control equipment before starting work.

- ✓ Visually check all equipment at least once a week for signs of damage or faults.
- ✓ Have equipment thoroughly examined and tested against its performance standard, at suitable intervals.
- ✓ Keep records of all examinations for at least 5 years.
- ✓ Don't forget you may need PPE for some maintenance tasks.

Cleaning and housekeeping

- ✓ Clean equipment and the work area daily. Clean other equipment and the workroom regularly – at least once a week.
- ✓ Deal with spills immediately – use suitable protective gloves. You may also need RPE.
- ✓ Vacuum dry dust or use wet cleaning methods.
- ✓ Store containers in a safe place and dispose of empty containers safely.
- ✓ Have a system for dealing with spills and clear them up straight away.
- ✓ Repackage any damaged or leaking packages away from the main storage area, or dispose of them safely.
- ✓ Dispose of empty containers safely.
- ✓ Make sure ignition sources such as smoking, electrical power, vehicles and battery charging are tightly controlled.
- ✓ Don't store empty highly flammable liquid containers in the workroom.

Caution: Never allow the use of brushes or compressed air for removing dust from skin and clothing. Avoid the use of brushes or compressed air for removing dust from surfaces or from inside machinery.

Training and supervision

- ✓ Provide supervision – ensure that safe work procedures are followed.
- ✓ Tell workers about the hazards associated with their work.
- ✓ Provide workers with training on:
 - working safely with hazardous substances;
 - when and how to use controls;
 - how to check they are working; and
 - what to do if something goes wrong.
- ✓ Consider keeping training records.
- ✓ Involve managers and supervisors in health and safety training.
- ✓ Oversee handling of leaks and spills, and disposal of any materials.

Essential information

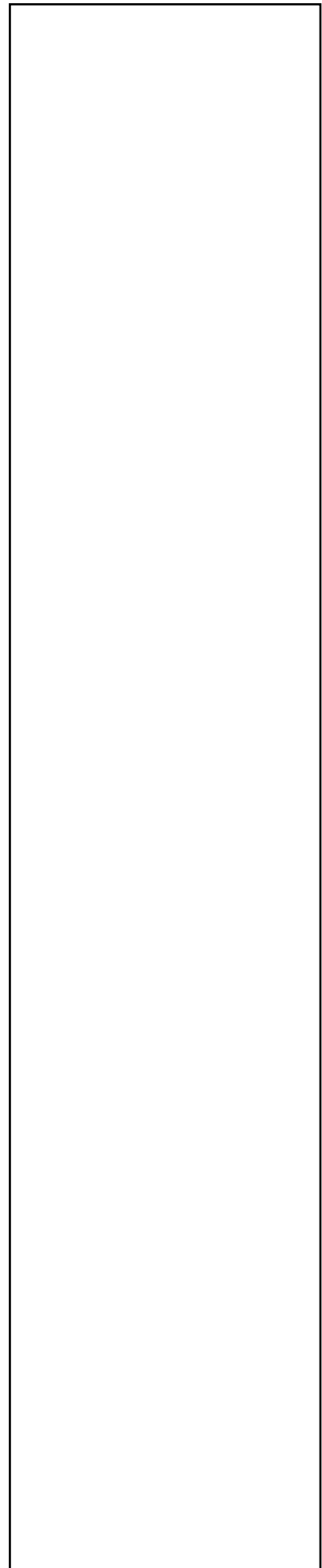
General advice on chemicals causing harm via skin or eye contact COSHH Guidance Sheet S100 HSE Books 2015
www.hse.gov.uk/pubns/guidance/s100.pdf

Selection of personal protective equipment COSHH Guidance Sheet S101 HSE Books 2015 www.hse.gov.uk/pubns/guidance/s101.pdf

Further information

Safety data sheets

Chemical warehousing: the storage of packaged dangerous substances HSG71 HSE Books 2009 www.hse.gov.uk/pubns/books/hsg71.htm



Safe handling of combustible dusts. Precautions against explosions
HSG103 HSE Books 2003 www.hse.gov.uk/pubns/books/hsg103.htm

Dangerous substances and explosive atmospheres L138 HSE Books 2003
www.hse.gov.uk/pubns/books/l138.htm

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

Occupational Safety and Health Consultants Register www.oshcr.org/

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

Employee checklist

- Check the room is well ventilated, and any extraction or air supply is switched on and working properly.
- Don't stack materials against air vents, grills etc. Handle all packages and containers carefully to minimise spills.
- Look for signs of leaks, wear and damage before every job.
- If you find any problems, tell your supervisor. Don't just carry on working.
- Use handling aids to move sacks and drums.
- Wash your hands before starting the job, and before eating, drinking, smoking or using the lavatory.
- Don't use solvents to clean your skin.
- Clear up spills immediately. For liquids, contain or absorb spills with granules or mats. For solids, use vacuum or wet cleaning.
- Dispose of spills safely.
- Use, maintain and store your PPE in accordance with instructions.

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