

Storage of Hazardous Chemicals

Information Sheet

Hazardous chemicals must be stored appropriately to minimise risk to workers and the environment. The specific hazards to human health and the environment posed by chemicals can be identified from the information on the hazard label of the chemical. The safety data sheet (SDS), if required to be provided by the supplier, also provides information on hazards in addition to conditions for safe storage, stability and reactivity and accidental release measures.



This information sheet provides advice for the storage of relatively small amounts of hazardous chemicals, for example, in laboratories. For further information on the safe storage of larger quantities of hazardous chemicals, please refer to our “*Guide on Storage of Hazardous Chemicals in Warehouses & Drum Stores*”.

While the storage of chemicals is subject to the requirements of the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001-2021 and Safety, Health and Welfare at Work (Carcinogens, Mutagens and Reprotoxic Substances) Regulations 2024, regulatory agencies other than the Authority have a remit for specific chemicals (e.g. cosmetics, medicines, pesticides).













Good practices for the safe storage of hazardous chemicals

- ✓ Have a chemical inventory management system in place, which includes purchasing controls and checks for correct hazard labelling, availability of an SDS, damaged containers and out-of-date chemicals.
- ✓ Ensure a system for receipt of deliveries to check that containers are in good condition prior to acceptance on site is in place, noting that hazardous chemicals should not be left in reception areas.
- ✓ Have a designated storage area for hazardous substances.
- ✓ Ensure all hazardous chemicals are correctly labelled.
- ✓ Have a means of safe internal transport of hazardous chemicals.
- ✓ When the SDS is available, follow the storage and handling information available in Section 7.
- ✓ Ensure that all information provided in the SDS is readily accessible to all workers at risk of exposure.
- ✓ Ensure the outer edges of shelves have a raised lip to prevent containers from slipping and falling and that sufficient space is provided on shelves to avoid contact between containers.
- ✓ Have control measures in place to deal with spillages and ensure appropriate cleaning materials are available.
- ✓ Ensure appropriate ventilation is in place to prevent dangerous gases, vapours or fumes from accumulating.
- ✓ Store flammable chemicals in fire safety storage cabinets which satisfy the requirements of EN 14470, with the choice of cabinet based on the site-specific risk assessment.

Chemical Segregation

The segregation of incompatible chemicals is an important principle to ensure the safe storage of hazardous chemicals. It is important to separate solids from liquids and organic from inorganic substances. While the following points address the most common types of chemical substances, chemical segregation can be a complex task, and there may be some chemicals that will not fit neatly into one category or another. However, with a proper risk assessment, all chemicals can be assigned to an appropriate storage area.

Guiding principles of Chemical Segregation based on hazard classification

Chemical Segregation Table		Acid	Base	Oxidising	Flammable	Health Hazard/ Toxic
						
Acid		Compatible	Non-Compatible	Store According to the SDS	Non-Compatible	Non-Compatible
Base		Non-Compatible	Compatible	Store According to the SDS	Non-Compatible	Store According to the SDS
Oxidising		Store According to the SDS	Store According to the SDS	Compatible	Non-Compatible	Store According to the SDS
Flammable		Non-Compatible	Non-Compatible	Non-Compatible	Compatible	Store According to the SDS
Health Hazard/ Toxic		Non-Compatible	Store According to the SDS	Store According to the SDS	Store According to the SDS	Compatible

Compatible



Store According
to the SDS



Non-Compatible



Storage of gas cylinders

- ✓ Gas cylinders should be in well-ventilated external areas with a fixed pipe supply to the area of use, where possible.
- ✓ Where the use of cylinders internally cannot be avoided, the cylinder must be properly secured to minimise movement and prevent it from falling over.
- ✓ Gas cylinders should be stored vertically, although some medical gases can be stored horizontally.
- ✓ Regulators must be checked on a regular basis.
- ✓ Gas detection should be provided where toxic, corrosive, asphyxiant or flammable gases are used.
- ✓ Where inert gases such as nitrogen or helium are used, a risk assessment should be carried out to determine if there is a risk of asphyxiation due to air displacement by the inert gas.
- ✓ The risk assessment should also take account of the potential for explosion associated with pressurised cylinders.



Storage of hazardous chemical waste

Arrangements for the safe handling, storage and transport of hazardous chemical waste must be in place. This includes segregation of incompatible waste, while prolonged storage or accumulation of excessive quantities of waste hazardous chemicals should be avoided.

Emergency preparedness

- ✓ Regularly test and inspect all safety equipment such as fire extinguishers, first-aid boxes, emergency showers and eye washes.
- ✓ Maintain accurate records of these inspections.
- ✓ Ensure appropriate personal protective equipment (PPE) is available.
- ✓ Ensure fully stocked spill kits are available, and the contents are in date, with appropriate training provided on their use.
- ✓ Provide appropriate fire-fighting equipment and training on the use of such equipment to deal with all identified fire scenarios.
- ✓ Be aware that specific first aid treatment for certain hazardous chemicals may be required, and this will be identified in the SDS.
- ✓ Note that safety drills are required by law to be performed at regular intervals.

Further information:

Visit: www.hsa.ie/chemicals

Email queries to chemicals@hsa.ie

Contact our HelpDesk:

Email: contactus@hsa.ie

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HSA

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