

Guidance Note, GN033

## **GUIDANCE ON THE OPERATION OF SOLVENT STORES**



Solvent stores are for the bulk storage of solvents which are used in laboratories. Some of the solvents will be flammable or highly flammable. The main risk is that the vapours could ignite resulting in fire and/or explosion. There is also a risk that leaking solvents could pollute water courses and sewers. With ethers there is a risk that unstable peroxides could be created.

Note: A highly flammable liquid (HFL) is a liquid with a flash point below 32 degrees C. A flammable liquid is a liquid with a flash point below 55 degrees C. (The flash point of a liquid is the lowest temperature at which the liquid gives off vapour in sufficient concentration to form a combustible mixture with air near the surface of the liquid.)

To control the risks, solvent stores should be operated in accordance with the following procedures.

1. Only buildings or parts of buildings which have been designated by the Estates Section as solvent stores should be used for storing bulk stocks of HFLs. (Any HFLs stored in laboratories should be in cabinets designed specifically for the storage of HFLs.)
2. Schools should prepare local risk assessments and operating procedures for their solvent stores based on this guidance.
3. The School should assign a competent member of staff to be in charge of each store and to oversee its operation in accordance with the local operating procedures.
4. The solvent store should be secure with access restricted to authorised persons who are aware of the local operating procedures for the store. The store should never be left unattended when unlocked.
5. Protective clothing appropriate to the job being undertaken should be worn. This will normally be a laboratory coat and suitable gloves but eye protection should always be worn where splashing is a possibility.
6. Any defects in the structure of the store should be reported immediately to Estates and repaired in a timely manner.
7. High standards of housekeeping should be maintained at all times and there should be unimpeded routes of access and egress.
8. The electrical installation, if there is one, should be of a suitable hazardous area rating

- and have been provided by the Estates Section. It should be inspected and certified at least every 2 years by a competent person working under the control of the Estates. A copy of the certificate should be held by the member of staff in charge of the store.
9. No additional electrical equipment should be introduced into the store unless it is installed by the Estates Section.
  10. No form of heating should be introduced into the store unless installed by the Estates Section.
  11. Each store will have been designed with a means of providing adequate ventilation. Care must be taken not to block ventilators from either the inside or the outside.
  12. The store will have been provided with a bund to contain a spillage. The integrity of the bund must be maintained and any damage repaired immediately.
  13. The solvent store should be used for storing only solvents unless an assessment of the risks from storage of other chemicals has shown that it is safe for them to be stored in the solvent stores.
  14. The ventilation in a solvent store will usually be insufficient for it to be used for dispensing of solvents (transfer from larger to smaller containers). Additional ventilation should be provided if dispensing is to be carried out. It should be expected that the store will be free of the smell of solvents.
  15. All containers should be suitably labelled. There should be arrangements for stock rotation – last in first out. Where there is a risk of deterioration with hazardous consequences (e.g. the formation of peroxides in ethers) then consideration should be given to marking containers with date of receipt into stock.
  16. An area of 2 metres around the store should be kept clear of vegetation and combustible materials.
  17. A suitable fire extinguisher should be provided nearby.
  18. Warning signs should be displayed on the outside of the store: High flammable, no smoking or naked lights.
  19. Suitable material should be on hand to contain a spillage and all those who have access to the store should know how to respond to a spillage. Spillages should not be allowed to evaporate in the store unless this is done in a controlled manner with the door to the store open and someone in attendance to monitor the situation.
  20. Bottles of solvents should be issued from stores only to those who have sealed bottle carriers to transport them to the laboratory. Wire bottle carries are not acceptable alternatives.

University Safety  
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