

Dangerous Substances and Explosive Atmosphere Regulations 2002

Appendix 3 – Guidance for the assessment for laboratory work where extremely or highly flammable materials are handled.

DSEAR requires an assessment of risk, as outlined in published guidance; the following model assessment is provided for undergraduate and postgraduate laboratories where **extremely or highly flammable materials** (ie. flammable materials) are handled.

If, for any reason, these criteria cannot be met, then a full risk assessment for DSEAR must be made.

The area / process or equipment can be deemed **non-hazardous** in 'normal' use, for the purposes of DSEAR, if -

- The least flammable material has been chosen for use, consistent with stated experimental aims.
- The total quantity of flammable materials held for routine use is below 50 litres or half a day's supply for normal use, whichever is the smaller.

When the area is in normal operation -

- All not in current use flammable materials are stored safely in purpose designed ventilated or flammable cabinets.
- Flammable materials in use and in storage are kept segregated from other incompatible and potentially dangerous substances.
- The minimum amounts of flammable materials are removed from safe storage, and are returned to safe storage as soon as necessary handling has taken place.
- The flammable materials are handled in a functioning fume cupboard wherever possible.
- Any electrically cooled or heated storage areas (used with flammable materials) have intrinsically safe thermostats and/or thermal cut-outs.

In addition a suitable general risk assessment of the procedure to be followed has been carried out, taking into account -

- Any relevant information provided in the material safety data sheets (msds).
- Use of the minimum quantity of any flammable material, consistent with the stated and authorised experimental aims.
- Use of satisfactory experimental containment e.g. Good quality, sound glassware or equipment for carrying out the experiment.
- Work carried out in a functioning fume cupboard to ensure that an explosive atmosphere is not allowed to build up around the equipment.
- Use of electrical equipment suitable for the purpose, and tested for electrical safety e.g. Use of a mantle with efficient temperature control rather than a hotplate for heating flasks.
- Minimal use of naked flames in the area.
- Suitable spillage control measures.

- Suitable waste de-activation and disposal procedures.
- Activities undertaken by competent staff.
- Local emergency arrangements are in place e.g.
 - Satisfactory fire risk assessment.
 - Means of summoning emergency aid.

In most cases, local safety guidance (or manual) and standard operational procedures will assist in meeting these requirements. Where any issue requires further investigation, contact your Departmental/School Safety Officer for further assistance.