

DSEAR Standard for laboratory and workshop activities where flammable substances (Cat 1, 2, 3 and 4) are present.

DSEAR requires an assessment of risk. The minimum standard laid out below is provided for laboratories and workshops where flammable substances in Categories 1, 2, 3 and 4 are present. The aim of the standard is to ensure a consistent approach, and level of safety, whilst reducing the amount of additional paperwork for lower risk laboratories and workshops.

If for any reason the minimum criteria cannot be met in a laboratory or workshop, the FoSEM Health and Safety Team, or University Health, Safety and Wellbeing Team, must be contacted to discuss the circumstances.

The laboratory/workshop, process or equipment can be deemed to present a low risk in relation to DSEAR, including the formation of explosive atmospheres, under normal operational conditions if:

Storage

1. The least flammable material has been chosen for use, consistent with stated experimental aims.
2. The total quantity of Categories 1 and 2 flammable substances, and those flammable substances with a flashpoint lower than the ambient temperature of the room, held for routine use in the laboratory/workshop, does not exceed 40 litres.
3. The total quantity of other flammable substances held for routine use in the laboratory/workshop, with a higher flashpoint of up to 60°C, does not exceed 225 litres.
4. Flammable substances up to these limits are stored in 30 minute integrity fire rated cabinets with suitable bunding. Quantities in excess of these limits are stored in cabinets with enhanced fire performance (e.g. double skinned 90 minute fire rating). In all cases, cabinets must be BS EN14470-1 compliant.
5. Flammable substances and other substances are segregated and stored following [SSHS SOP004 Guidance for Storage of Chemicals](#).
6. Flammable cabinets must be positioned in well ventilated areas that are away from the immediate processing area where possible, and do not jeopardise the means of escape.
7. Flammable substances must be clearly labelled and are returned to fire rated storage when not in active use. Labelling templates are available and more details can be found in [SOP008 Laboratory Chemical Waste Disposal](#).
8. Waste flammable substances in temporary storage within a laboratory/workshop are included within the 40 litre and 225 litre limits set out in points 2 and 3 above, and must be closed and stored in line with point 4 when not actively in use.
9. Only waste bottles in active use (i.e. currently being filled) may be stored outside of the requirements of point 4, but must be stored in line with the COSHH risk assessment and the Globally Harmonised System (GHS) properties of the substances they contain e.g. Cat 1 and 2 flammables in a fume cupboard.
10. Waste bottles are considered full at ¾ of their capacity and must be removed from the building via waste disposal routes as soon as practicable.
11. In circumstances where a full waste bottle cannot be disposed of promptly, it must be temporarily stored in a BS EN14470-1 compliant cabinet, banded and segregated as waste.

12. Any electrically cooled or heated storage areas (used for flammable materials) have intrinsically safe thermostats and/or thermal cut-outs.

Circumstances of the activity/task

13. A suitable and sufficient COSHH risk assessment is in place where the properties of the substances have been clearly identified and evaluated.
14. A COSHH risk assessment establishes the quantities to be used, and these do not exceed 50ml for small scale work.
15. The activity/task does not involve the intentional creation of an explosive atmosphere of Category 1 and 2 flammable substances, for example, spraying or drying in ovens.
16. The activity/task does not involve the unintentional release of more than 2.5 litres (Winchester bottle) of Categories 1, 2 or 3 flammable substances with a flashpoint below the maximum ambient temperature, for example, heating, dispensing or decanting, evaporation, grinding and fettling.
17. A procedure is in place for addressing foreseeable unintentional releases, such as leaks and spillages.
18. Ignition sources have been removed where possible from areas where flammable substances are used.
19. Flammable substances are used within a fume cupboard unless a COSHH risk assessment justifies otherwise.
20. Only electrical equipment suitable for the work is used and is tested for electrical safety. For example, use of a mantle with efficient temperature control rather than a hotplate, for heating flasks.
21. Suitable waste de-activation and disposal procedures are in place.
22. Staff have been trained, instructed and informed about the DSEAR arrangements affecting them, including what to do in an emergency and how to summon emergency support.
23. Emergency procedures have been put in place.
24. A fire risk assessment is in place covering the work area and actions have been addressed, or are due to be addressed imminently.
25. Use of satisfactory experimental containment, for example, protective screens and glassware.

This DSEAR Standard does not apply:

26. To novel processes.
27. Where there are multiple flammable storage areas within the same laboratory or workshop.
28. Where quantities of flammable substances exceed the limits set out in points 2 and 3.
29. To compressed cylinders and substances corrosive to metal.

In these instances you must seek advice from the FoSEM Health & Safety Team or University Health, Safety and Wellbeing Team before carrying out any work.