



## HEALTH AND SAFETY

### Dangerous Substances & Explosive Atmospheres Policy

#### 1. OVERVIEW AND PURPOSE

- 1.1 The purpose of this policy is to ensure a consistent approach to the management of dangerous substances and explosive atmospheres across the University.
- 1.2 This policy also defines the key terms related to the management of dangerous substances and explosive atmospheres.
- 1.3 The policy sets out areas of responsibility relating to the management of dangerous substances and explosive atmospheres.
- 1.4 This policy aims to ensure that:
- The University complies with the Dangerous Substances & Explosive Atmospheres Regulations 2002 (DSEAR).
  - Dangerous substances present at the University and their location are identified.
  - Dangerous substances are risk assessed in line with DSEAR.
  - Dangerous substances are eliminated wherever possible and where this is not possible, kept to the minimum necessary number and quantity.
  - The effects of a fire or explosion are mitigated.
  - Areas where an explosive atmosphere may form are identified and appropriately classified as hazardous areas (i.e. EX zoning).
  - Emergency procedures for dealing with an incident involving dangerous substances and explosive atmospheres are put in place.
  - Suitable training provision is available.

#### 2. SCOPE

- 2.1 The policy applies to all University of Sussex employees (including visiting academic colleagues and Postgraduate Researchers) who work with dangerous substances.
- 2.2 This policy applies wherever a dangerous substance is, or is liable to be, used or present in connection with work. This includes dangerous substances that are purchased and those that are produced as part of work process.
- 2.3 Working with dangerous substances includes ordering, receiving, transporting, storing, using and disposal of these substances. It also includes those that work in areas where dangerous substances are present and who supervise or manage staff and others who work with dangerous substances.

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2.4 Third party organisations that work for the University or work from the University campus or other premises, must put in place their own arrangements to manage dangerous substances and explosive atmospheres. These must meet the requirements of this policy.

### 3. RESPONSIBILITIES

#### 3.1 Vice Chancellor

3.1.1 The Vice Chancellor has overall responsibility for health and safety at the University of Sussex. They delegate their responsibility for the management of dangerous substances and explosive atmospheres through the University's management structure, however, they cannot delegate their accountability.

#### 3.2 Heads of Schools / Directors of Professional Services Divisions

- 3.2.1 Ensure compliance with this policy within their Schools/Professional Services (PS) Divisions through the delegation of tasks and roles as appropriate.
- 3.2.2 Ensure that DSEAR risk assessments are carried out when dangerous substances are present in the areas they are responsible for.
- 3.2.3 Ensure that areas where an explosive atmosphere may be present are classified as hazardous areas and display EX signage from a reputable supplier at entrances.
- 3.2.4 Ensure that significant findings from DSEAR assessments are communicated to those who may be affected e.g. staff and students.
- 3.2.5 Ensure that control measures identified through DSEAR risk assessments are implemented.
- 3.2.6 Ensure that any pipes or containers, under the School's/PS Division's responsibility, which hold/carry dangerous substances are identified and labelled.
- 3.2.7 Ensure that staff are competent to carry out their duties in relation to DSEAR by ensuring they attend DSEAR training.
- 3.2.8 Ensure that emergency response procedures are in place to deal with foreseeable incidents.
- 3.2.9 Ensure that routine workplace inspections include DSEAR management.
- 3.2.10 Implement arrangements to monitor that staff and others follow control measures and procedures.
- 3.2.11 Provide resources to ensure compliance with DSEAR.
- 3.2.12 Ensure that significant DSEAR risks are included as a standing agenda item at School/PS Division Health & Safety Committees.
- 3.2.13 Ensure that the Science School Health & Safety Team and University Health & Safety Team are consulted if DSEAR risks increase or decrease.
- 3.2.14 Where appropriate to do so, delegate the above responsibilities to competent members of staff within their Schools/PS Divisions.

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### 3.3 Principal Investigators / Line Managers / Technical Services Managers

- 3.3.1 Support the Heads of Schools/PS Divisions in meeting their responsibilities under this policy.
- 3.3.2 Ensure that DSEAR risk assessments are carried out when dangerous substances are present or in use in the areas they are responsible for.
- 3.3.3 Ensure key information from these risk assessments is communicated to their staff and others who may be affected e.g. students.
- 3.3.4 Ensure those affected are made aware of areas classified as hazardous and the precautions they must follow when working in these areas.
- 3.3.5 Ensure staff they are responsible for have attended DSEAR training and are familiar with the hazards presented by the dangerous substances they use.
- 3.3.6 Ensure DSEAR is discussed within the team, for example, at team meetings.
- 3.3.7 Ensure staff they are responsible for are aware of emergency procedures to follow should there be a DSEAR related incident, accident or near miss.
- 3.3.8 Ensure DSEAR related incidents, accidents or near misses are reported promptly via Sussex Direct.
- 3.3.9 Support health and safety colleagues with investigations into these where required.
- 3.3.10 Ensure contractors working in School/PS Division owned areas are provided with the outcomes of DSEAR risk assessments where this is applicable to their work e.g. hazardous area classification.

### 3.4 All staff and Postgraduate Researchers

- 3.4.1 Support those with management and supervisory responsibilities in meeting their responsibilities under this policy.
- 3.4.2 Comply with the requirements of a DSEAR assessment.
- 3.4.3 Provide training, information and/or supervision to students under their supervision, as required by a DSEAR assessment.
- 3.4.4 Attend DSEAR training as directed by their line manager, Principle Investigator or Technical Services Manager.
- 3.4.4 Report any issues or failings in the management of dangerous substances to their line manager, Principal Investigator or Technical Services staff for reporting on Sussex Direct.

### 3.5 Estates Division

- 3.5.1 Ensure that staff involved in the design and delivery of safe buildings and refurbishments consult with key stakeholders.
- 3.5.2 Manage the facilities management (FM) contract, ensuring that the FM company meets their responsibilities.
- 3.5.3 Implement arrangements for addressing concerns that arise through the FM contract.

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- 3.5.4 Ensure that the specification and procurement of any ATEX rated equipment is selected in consultation with the University Health & Safety Team and that installation is completed by a CompEX certified contractor.
- 3.5.5 Seek advice from the University Health & Safety Team where proposed projects may impact existing or introduce new DSEAR arrangements.
- 3.5.6 Ensure a robust permit to work process is in place that considers DSEAR as part of these arrangements.
- 3.5.7 Ensure that contracted works on campus are reviewed in advance of them commencing to ensure consideration has been given to DSEAR where necessary.

### 3.6 University Health & Safety Team

- 3.6.1 Review legislation, approved codes of practice and guidance and review this policy in line with these.
- 3.6.2 Provide advice, guidance and templates to support Schools/PS Divisions in meeting their responsibilities.
- 3.6.3 Support those with responsibility for carrying out DSEAR risk assessments to do so.
- 3.6.4 Support stakeholders in establishing a system for keeping records of EX zoning, that can be referred to by stakeholders when arranging works.
- 3.6.5 Develop and deliver DSEAR training.
- 3.6.6 Carry out thematic audits of DSEAR arrangements.
- 3.6.7 Ensure that a template for Record of Verification is available for use and that health, safety and fire safety colleagues verify DSEAR risk assessments that require the establishment of an EX zone.
- 3.6.8 Investigate DSEAR related accidents, incidents and near misses and liaise with regulatory authorities as required.

### 3.7 DSEAR Support Assessors

- 3.7.1 Attend DSEAR Awareness and DSEAR Risk Assessment training.
- 3.7.2 Support those with the responsibility for carrying out DSEAR risk assessments to do so.
- 3.7.3 Seek advice and support from the University Health and Safety Team where they believe the hazards/work activity are outside their level of competence.

## 4. DEFINITIONS

- 4.1 Dangerous substances are any substance or preparation used or present at the University that could, if not properly controlled, cause harm to people as a result of fire or explosion, or corrosion of metal. They include such things as solvents, paints, varnishes, flammable gases, dusts from machining and sanding, dusts from foodstuffs, chemical dusts, pressurised gases and substances corrosive to metal.

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- 4.2 Explosive atmospheres, when under atmospheric conditions, are a mixture of air and a flammable substance in the form of a gas, vapour, mist, dust or fibres. The mixture can catch fire or explode when exposed to an ignition source such as a spark, flame or high temperature.
- 4.3 Energetic events include such things as runaway exothermic reactions involving chemicals e.g. the decomposition of unstable substances such as peroxides.
- 4.4 ATEX is the name commonly given to the two European Directives for controlling explosive atmospheres i.e. ATEX 137 on minimum requirements for improving health and safety protection of workers potentially at risk from explosive atmospheres and ATEX 114 equipment and protective systems intended for use in potentially explosive atmospheres.
- 4.5 Hazardous Area Classification is the process of identifying where an explosive atmosphere may form and its extent.
- 4.6 EX is the abbreviation used on signage to notify others of the presence of an explosive atmosphere where special measures will need to be followed. The signage includes a black EX in a yellow triangle with black border.

**5. DSEAR RISK ASSESSMENT**

- 5.1 Where dangerous substances are present or likely to be present in the workplace, a suitable and sufficient assessment of the risk to staff, students and others which arise from the substance/s must be carried out.
- 5.2 The purpose of the assessment is to help decide what measures are required in order to eliminate or reduce, so far as is reasonably practicable, the risks from dangerous substances and ensure that any control measures and mitigations are implemented. The following steps must be taken:
  - 5.2.1 Identify the dangerous substances and their properties.
  - 5.2.2 Identify who may be harmed.
  - 5.2.3 Identify ignition sources.
  - 5.2.4 Describe organisational/technical measures taken to control the risk.
  - 5.2.5 Evaluate the scale of the anticipated effects.
  - 5.2.6 Implement additional mitigation measures to reduce risk to an acceptable level.
- 5.3 The significant findings of the assessment must be recorded and the risk assessment must be reviewed and updated when significant changes are made to the process.
- 5.4 Where a hazardous area classification has been made, the risk assessment must be verified by the University Health and Safety Team, Fire Safety Team and Technical Services.

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## 6. CONTROL MEASURES

6.1 DSEAR requires control measures to be applied in the following order of priority, consistent with the risk assessment and appropriate to the nature of the activity or operation.

- 6.1.1 Eliminate the dangerous substance.
- 6.1.2 Reduce the quantity of the dangerous substance.
- 6.1.3 Avoid/minimise releases.
- 6.1.4 Control release at source.
- 6.1.5 Prevent the formation of an explosive atmosphere.
- 6.1.6 Collect and remove dangerous substances (mists, vapours, dusts and gases) to a safe place (e.g. ventilation).
- 6.1.7 Avoid/remove ignition sources.
- 6.1.8 Avoid adverse operating conditions.
- 6.1.9 Keep incompatible substances apart.

## 7. RISK MITIGATION

7.1 Measures that mitigate the risk must be applied and these should likewise be consistent with the risk assessment and appropriate to the nature of the activity or operation. These should include:

- 7.1.1 Reducing the number of employees exposed to a minimum.
- 7.1.2 Implementing measures to control or minimise the spread of fires or explosions.
- 7.1.3 Provision of explosion pressure relief arrangements.
- 7.1.4 Providing explosion suppression equipment.
- 7.1.5 Providing plant or equipment that is explosion pressure resistant.
- 7.1.6 Providing suitable Personal Protective Equipment (PPE).

## 8. LABELLING OF PIPES AND CONTAINERS

8.1 The identification of the dangerous contents of containers and pipes must be clearly labelled and carry appropriate markings and safety signage where applicable.

## 9. CLASSIFICATION OF HAZARDOUS AREAS

9.1 Schools/PS Divisions must, in consultation with the University Health & Safety Team, classify areas of the workplace where an explosive atmosphere may be present or is able to form.

9.2 A register of zones must be maintained by the University. The register must identify the location of a zone, the zone's category and its extent. The extent of the zone must be illustrated in the form of a drawn plan and profile of the area.

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- 9.3 The University must keep a List of Equipment for Area Classification to supplement the information detailed in section 8.2.
- 9.4 Schools/PS Divisions must eliminate ignition sources from areas classified as hazardous.
- 9.5 Work in these areas must be controlled and areas where a zone is present must be marked at its entrances with EX signage.

**10. THIRD PARTIES**

- 10.1 Third parties, such as contractors, must not be allowed to carry out work unless the relevant University stakeholders have confirmed the contractor will not be working within an EX zone.
- 10.2 A specific DSEAR assessment may be required for this type of non-routine activity.
- 10.3 Third party organisations, that are not contractors, are responsible for managing their own DSEAR related risks that arise due to their activities.
- 10.4 Where arrangements for managing dangerous substances and explosive atmospheres impact other parties on campus, this must be communicated to all parties.

**11. LABORATORIES**

- 11.1 A laboratory DSEAR risk assessment must cover all the areas previously mentioned. However, Principal Investigators may follow [Health & Safety Executive guidance](#) in relation to hazardous area classification if other controls managing dangerous substances and explosive atmospheres are robust and enforced.

**12. ACCIDENTS, INCIDENTS AND EMERGENCIES**

- 12.1 Schools/PS Divisions must put in place procedures to deal with foreseeable accidents, incidents or emergencies that occur involving dangerous substances and explosive atmospheres.
- 12.2 Schools/PS Divisions must make sure that relevant persons are trained in these procedures.
- 12.3 Schools/PS Divisions must test these procedures periodically to ensure they still work effectively.

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13. **MONITORING AND REVIEW**

- 13.1 Schools/PS Divisions must implement local arrangements to ensure the control measures and mitigations from DSEAR risk assessments are implemented and followed.
- 13.2 The University Health & Safety Team will monitor the implementation of this policy through audit and inspection.
- 13.3 This policy will be reviewed every three years unless significant changes occur that prompt an earlier revision.

14. **LEGISLATION AND GOOD PRACTICE**

- 14.1 The University will comply with all relevant legislation regarding Dangerous Substances & Explosive Atmospheres Regulation 2002, including:
  - [Management of Health & Safety at Work Regulations 1999.](#)
  - [Dangerous Substances & Hazardous Substances Regulations 2002.](#)
  - [Dangerous Substances and Explosive Atmospheres Approved Code of Practice L138.](#)
  - [Health & Safety Executive resources.](#)

<b>Review / Contacts / References</b>	
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