ROBERT GORDON UNIVERSITY ABERDEEN

Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) Guidance Note

1. Introduction:

This Guidance note supports the use of the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) Risk Assessment Template.

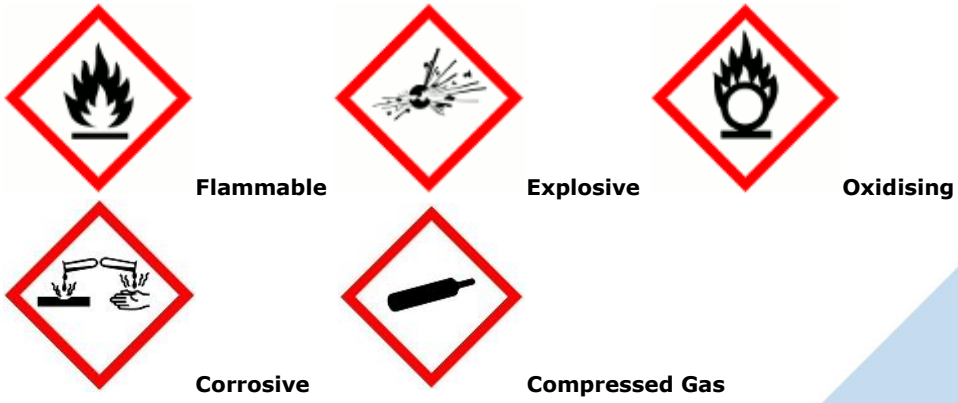
The DSEAR Regulations require employers to assess the risks to workers (and any others who may be affected by their work or business) which may arise because of the presence of dangerous substances at the workplace. To do this, follow the steps outlined in the template and this guidance note.

2. Procedure:

a. Step 1

Determine whether a '**Dangerous Substance**' is present or likely to be present by providing the following information to complete Step 1 of the DSEAR Risk Assessment template.

Check whether the substance or preparation has been classified by the CLP Regulations (Classification, Labelling and Packaging) or CHIP Regulations (Hazard Information and Packaging for Supply) Regulations as explosive, oxidising, extremely flammable, highly flammable, flammable, corrosive to metals or a compressed gas. The following CLP pictograms denote the relevant categories.



Assess the physical and chemical properties of the substance or preparation and the work processes involved to see whether the work activity creates a potential for fire, explosion or similar energetic (energy releasing) event. If a Materials Safety Data Sheet (MSDS) is available it will list the applicable Physical Hazard ('H') Statements, i.e.:

- H200 Unstable Explosive
- H221 Flammable Gas.
- H280 Contains gas under pressure; may explode if heated
- H290: May be corrosive to metals

Check whether the work activity involves the creation or handling of potentially combustible or explosive dusts.

The presence of a dangerous substance can also lead to the development of an '**Explosive Atmosphere**' - a mixture, under atmospheric conditions, of air and one or more dangerous substances in the form of gases, vapours, mists or dusts in which, after ignition has occurred, combustion spreads to the entire unburned mixture.

For the control of compressed gases as a dangerous substance, required by DSEAR a standard risk assessment is detailed in the BCGA Code of Practice 44, The British Compressed Gases Association, 2016. If you are unable to implement any of the relevant stipulations in this code, please contact OHES.

In addition to Code of Practice 44, where compressed gas cylinders are transported between floors via lifts a documented safe system of work is likely to be required. OHES can be contacted to support in the creation of this.

Dangerous substances identified as corrosive to metals are highly likely to be harmful to humans as well. As such it is expected that the hazards presented by these substances would be managed under risk assessments required by the Control of Substances Hazardous to Health (COSHH) 2002. If this is not the case, please contact OHES.

b. Step 2:

If your findings from Step 1 indicate that Dangerous Substances / Explosive Atmospheres are likely to be present, complete the Step 2 'Control Measures' section.

Where Explosive Atmospheres may occur, the DSEAR Regulations require classification of 'hazardous' and 'non-hazardous' places. Hazardous places must be classified into 'Zones'.

Zones should be illustrated on a drawn plan using the following criteria:

Zone 0

A place where an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is present continuously or for long periods or frequently, i.e. > 4 hours per day.

Zone 1

A place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is likely to occur in normal operation occasionally, i.e. 3 minutes to 4 hours per day

Zone 2

A place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only, i.e. < 3 minutes per day.

c. Step 3:

Complete the Conclusion and Safe System of Work sections on Page 6, including a Zone plan where explosive atmospheres may occur. Use the extra sheet if necessary. The application of suitable control measures relevant to the task / activity are prompted throughout the preceding section. The control measures and Zone plan should guide the content of your Safe System of Work.

The Safe System of Work and Zone plan (where applicable) should be shared with personnel who may be reasonably expected to execute any of the specified actions, for example, the Emergency Procedures. The person in control of the work area should also receive a copy to ensure there are no conflicts with other work activities taking place, such as activities involving use of other dangerous substances or ignition sources.

The content of the DSEAR Risk Assessment for should be reviewed periodically and in any case when it is no longer valid, for example when changes in process or substances occur.

If you require assistance with completion of the assessment, advice can be sought from the Occupational Health and Environmental Safety (OHES) office on Ext. 2088 or 2086.

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