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| **CAL-HS-PD-2500** |
| **Storage And Use Of Flammable And Highly Flammable Substances** |
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| **Procedure** |
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# PURPOSE

1. The purpose of this procedure is to protect persons from danger resulting from;

* Explosion - This can occur when the stored DS releases vapours which reach a concentration in air which is within the explosive limits and there is a source of ignition e.g. electrical spark from a light switch. N.B. There is both an upper and lower explosive limit for flammable vapour in air and this will vary with the substance being vaporised. It is critical therefore that a substance data sheet for that specific substance is consulted.
* Fire - If a fire occurs in an area where any DS is stored, then the effects of the fire will be greatly increased.
* Exposure to liquid - Where DSs come into contact with the skin, they can cause defatting and other effects, leading to skin irritation and possible dermatitis.
* Exposure to vapour - Many DS vapours have a narcotic effect which, in the extreme case, can cause to unconsciousness and asphyxia, leading to death.

# DEFINITION

1. These are classed as Dangerous Substances (DS), defined in the regulations as being, “a substance or preparation which meets the criteria in the approved classification and labelling guide for classification as a substance or preparation which is explosive, oxidising, extremely flammable, highly flammable or flammable, whether or not that substance or preparation is classified under the CHIP Regulations”.
2. The CHIP Regulations means the Chemical (Hazard Information and Packaging for Supply) Regulations 2002, or as amended thereafter.

# RISK ASSESSMENT

1. Regulation 5 of DSEAR requires the employer to carry out and review as often as necessary, a suitable and sufficient assessment of the risk to his employees arising from the use of DS.
2. Section 3 of the Health and Safety at Work etc. Act requires the employer not to place “Others” at risk from his undertakings, so the assessment should include the potential for risks to Others.
3. Where the employer employs five or more, the findings of the assessment should be recorded.
4. The findings of the assessment should be communicated to all those who may be at risk from the storage or use of a DS.
5. The employer shall consider whether the use of the DS is appropriate, or whether substitution of a less hazardous substance is reasonably practicable.
6. The assessment shall include consideration of the following:

* The hazardous properties of the substance
* Information from the supplier and the safety data sheet.
* The work processes
* Possible interaction between substances.
* The quantity of DS.
* The possibility of explosion.
* The potential for an ignition source.
* The handling and storage requirements.
* The potential scale of any fire or explosion.
* The disposal of waste arising from the use of a DS.
* The measures identified as being necessary to minimise the risk to persons.
* The preparation of a plan of action in the event of an emergency, including a spillage of the DS.

1. Individual risk assessments will be required for specific locations, types of DS and quantities stored.
2. Where the individual may be exposed to DS as a result of a process or spillage, then a COSHH assessment must be completed.

# CONTROL MEASURES

1. Storage of DS material should be:

* In suitable fixed storage tanks in safe positions; or
* In suitable closed vessels kept in a safe position in the open air and, where necessary, protected against direct sunlight; or
* In suitable closed vessels kept in a storeroom, which either is in a safe position or is a fire resisting structure; or
* In the case of a workroom where the aggregate quantity of highly flammable liquids stored does not exceed fifty litres, in suitable closed vessels kept in a suitably placed cupboard or bin being a cupboard or bin which is a fire-resisting structure.
* All containers and storerooms, cupboards, bins and site containers which contain DS must be marked with the appropriate hazard warning sign, in accordance with the Health and Safety (Safety Signs and Signals) Regulations

1. Note this does not apply to the fuel tanks of vehicles or engines where the fuel is used for operating the vehicle or engine.
2. Nothing likely to ignite vapour from any highly flammable liquid shall be permitted in any area where any such vapour is reasonably expected to be present or accumulate.
3. When highly flammable liquid is present in any workplace suitable measures shall be taken to prevent the escape of vapours into the atmosphere
4. All venting devices of fixed tanks etc., shall discharge to a safe place and be fitted with a suitable flame arrester.
5. Smoking is not permitted in any place where concentrations of highly flammable liquid vapour are likely to be present.
6. Clear, bold notices must be displayed at every place where smoking is forbidden, and the necessary action taken to ensure compliance with this instruction.
7. All places where highly flammable liquids are present shall maintain suitable and appropriate means of firefighting.

# TRAINING

1. Any employee who is involved in the storage, handling or use of DS requires training. The employer should assess and record the level required for and given to individual operators.
2. Training may include the following areas:

* The risk and COSHH assessment prepared by the employer.
* The emergency procedures, including any alarms and rescue arrangements.
* The arrangement function and use of any ventilation system.
* The position and use of fire appliances.

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