

# (Dangerous Substances and Explosive Atmosphere Regulations (DSEAR) Risk Assessment –

<b>Risk Assessment For</b> Stage One DSEAR Assessment –  Location of Activity:  Date: Activity:  <b>LESS THAN</b> 150 tonnes <b>DOES NOT</b> come under the COMAH Regulations.  REF:	<b>Assessment Undertaken By</b> Name:  Type of assessment:  Initial Stage One Risk Assessment <b>Signed on receipt by authorised person</b>  .....  Date Issued:	<b>Assessment ‘Stage Two’ Review</b> Name:  Date:  <b>This assessment to be reviewed as soon as possible following any implemented controls found during stage one assessment.</b>
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	<u>Severity &gt;&gt;</u>	Catastrophic	Major	Serious	Minor	No Injury
<b>Likelihood</b>		5	4	3	2	1
Frequent	5	25	20	15	10	5
Probable	4	20	16	12	8	4
Occasional	3	15	12	9	6	3
Remote	2	10	8	6	4	2
Improbable	1	5	4	3	2	1


<b>Risk Evaluation</b>	
<b>High</b>	25, 20, 16, 15, 12
<b>Medium</b>	10, 9, 8, 6
<b>Low</b>	5, 4, 3, 2, 1

As each hazard is assessed, it is given a number of 1 to 5 for the likelihood of occurrence, then multiplied by 1 to 5 for the severity if something were to occur, as shown below, to signify an overall evaluation of **high, medium** or **low**, which is then shown on the risk assessment documentation. This is the initial risk rating based on no controls, so may be quite high.

An example is; a likelihood rating of 4, multiplied by a severity rating of 3, which is  $4 \times 3 = 12$ , thus giving a Risk Rating of **High Risk**.

On review of the assessment, now with controls, we obtain the residual, lower, risk rating.

# DSEAR Risk Assessment

Significant hazards as listed below:	People who are at risk:	Existing controls, safety procedures and recommendations, etc.	Further Actions required for risks which may not be adequately controlled	Level of risk before any controls:	Residual level of risk on review:
<p><b>Main Hazard:</b> There is the potential for the build-up of an explosive atmosphere with added potential for a confined vapour cloud explosion from accidental release of various gases to atmosphere through:</p> <ul style="list-style-type: none"> <li>• leaks in aerosol canisters or other containers</li> <li>• damage to aerosol canisters or other containers through impact/ handling</li> <li>• Rusting aerosol canisters or other containers</li> <li>• tampering</li> <li>• reaction of leaked chemicals/materials with other substances and/or materials</li> </ul>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>Aerosols to be contained within steel-mesh storage cage to specifications of at least 2mm thick and the mesh size does not exceed 25mm by 25mm.</p> <p>All Aerosols to be stored on wooden pallets within the storage cage at all times.</p> <p>Aerosols <u>must not be stored within</u> half a metre from the ceiling or roof level of the unit.</p> <p>Air monitoring available upon request by authorising bodies. (i.e., Insurers, HSE, Local Authority)</p> <p>ALL goods shielded from direct sunlight.</p> <p>Ensure only strict warehouse/storage activities within this Unit; No other activities to be undertaken</p> <p>Ensure ALL goods are securely stored whilst in this Unit</p> <p>Ensure a maintained 'Warehouse' temperature is established i.e., warmer in the Summer months</p> <p>Stored flammable aerosols (inclusive of LPG) within this Unit <u>does not meet or exceed</u> the total weight of 150 Tonnes.</p> <p>Flammable Liquids may be stored within the storage cage but must only be placed <u>below</u> any Aerosols at any time, and only upon wooden pallets. However, all space outside the cage should always be used in the first instance.</p>	<p>Classification 'Zone 2' (demarcation and signage)</p> <p>This signage must be displayed at premises entrance &amp; at designated positions within the unit.</p> <div data-bbox="1391 528 1653 619" style="text-align: center;">  </div> <p>DSEAR Awareness training required for ALL staff</p> <p>Material Safety Data Sheets to held for all substances – and All Staff to undergo MSDS Training (COSHH Regs)</p> <p>Emergency Accidental Release Procedures</p> <p>Pre-work entry checks to be made on premises and equipment - Equipment must be safe under normal operation.</p> <p>Air monitoring by authorised persons whilst premises/ equipment is in use.</p> <p>Internal temperature to be checked, particularly during Summer months</p>	<p><b>25</b> High (5 x 5)</p>	

<p>Build-up of an explosive atmosphere within higher areas of the Unit.</p> <p>Similarly, build-up of an explosive atmosphere within lower areas of the Unit.</p>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>Natural ventilation via inert fans situated high in rear wall, which allow for natural ventilation of any gathered fumes at high-up levels;</p> <p>No alterations to the inert fan units is envisaged at this time, however, if any further work is deemed necessary, this will be carried out via a specialised contractor.</p> <p>Natural ventilation at floor- level to disperse any low-lying fumes that may occur.</p> <p>Do not store Aerosols with a vapour that is denser than air near any drains or low-lying areas.</p>	<p>DSEAR Awareness training for ALL staff</p> <p>Roof inserted 'pressure-relief' ducts in case of build-up of pressure at this level – to also be discussed with Insurers</p> <p>Emergency Accidental Release Procedures</p> <p>Pre-work entry checks to be made on premises and equipment</p> <p>Air monitoring by authorised persons whilst premises/ equipment is in use.</p>	<p><b>25</b> High (5 x 5)</p>	
<p>Ignition sources –</p> <ul style="list-style-type: none"> <li>• Naked flames – Sparks of any description, Matches, Smoker's etc.</li> <li>• Electrical Distribution Systems.</li> <li>• Electrical &amp; Gas Heaters.</li> <li>• Internal combustion engines.</li> <li>• Compressor &amp; Air Receiver.</li> <li>• Electrical Equipment.</li> <li>• Water Boiler.</li> <li>• Any Microwave – Fridges etc.</li> <li>• Machinery.</li> <li>• Faulty or Misused Electrical Equipment.</li> <li>• Hot Surfaces.</li> <li>• Direct Sunlight</li> <li>• Arson.</li> </ul>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>Smoking prohibited throughout the entire building</p> <p>Earth-straps fitted to cages and racking to prevent static build up;</p> <p>No internal combustion engines shall be used inside the unit as this could become an ignition source.</p> <p>All portable electric equipment is fully PAT Tested and certificated; All electrical installations designed to a minimum amount with full compliance to current Regs.</p> <p>ALL goods shielded from direct sunlight.</p> <p>General inspections by technical staff /Building Manager</p> <p>Security procedures to prevent malicious ignition/arson</p> <p>Fault / maintenance reporting procedures.</p>	<p>No Smoking Policy – No naked flames within at least 10m from the outside of the building.</p> <p>Ensure Earth-Straps fitted on frames to prevent static</p> <p>PAT Test Certification on ALL electrical tools/appliances</p> <p>Inspection check-lists to be made available on request</p> <p>Security procedures must be in place</p>	<p><b>25</b> High (5 x 5)</p>	

<p>Fuel Sources;</p> <ul style="list-style-type: none"> <li>Any Wood – including wooden pallet products</li> <li>Paper/Card – Loose packaging and materials.</li> <li>Plastics, rubber and foam – packaging and materials etc.</li> <li>Furniture, including fixtures and fittings (<i>also see wood above</i>).</li> <li>Waste materials – Ceiling and wall coverings and shelving (<i>see also wood products above</i>).</li> </ul>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>No wooden pallets or similar to be sawn or cut as this creates saw-dust</p> <p>All loose materials such as paper, card, plastics, rubber, foam or polystyrene to be placed in waste bins provided</p> <p>Staff must not carry or move packs of Aerosols by holding/lifting them with just their shrink-wrapping at any time.</p>	<p>No Smoking Policy – No naked flames within at least 10m from the outside of the building.</p> <p>Ensure Earth-Straps fitted on frames to prevent static</p> <p>PAT Test Certification on ALL electrical tools/appliances</p> <p>Inspection check-lists to be made available on request</p> <p>Security procedures must be in place</p>	<p><b>25</b> High (5 x 5)</p>	
<p>Fire – General issues for this Unit</p>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>All possible combustible material in ALL areas to be controlled,</p> <p>Fire detection/alarm system, fire escape route, fire extinguishers, fire doors, trained fire marshals, signage, fire safety and evacuation procedures.</p> <p>Ensure fire exits positioned at both ends of racking as well as at mid-section within ‘caged’ racking. Ensure no ‘dead-ends.’</p> <p>‘Walk’ all fire exit routes to ensure full egress can be obtained at all times</p> <p>A Fire Risk Assessment is required for these premises</p> <p>First Aid, Accident/Near-miss Reporting Procedures</p>	<p>Remove all possible combustible materials from ALL areas,</p> <p>Emergency Accidental Release Procedures</p> <p>Fire Alarm tested on a weekly basis;</p> <ul style="list-style-type: none"> <li>Does it work?</li> <li>What does it sound like?</li> <li>Recorded in Fire-Log?</li> </ul> <p>Fire Evacuation</p> <ul style="list-style-type: none"> <li>on a 6 monthly basis?</li> <li>Recorded in Fire Log?</li> </ul> <p>Fire Exit routes checked for full accessibility &amp; egress?</p>	<p><b>20</b> High (4 x 5)</p>	

		<p>Good housekeeping/cleaning practices and procedures</p> <p>Ensure part-picked pallets are left as level as possible to reduce damage to Aerosols.</p> <p>All damaged Aerosols/container/materials must be removed from area immediately.</p> <p>Ensure contents of damaged aerosols and/or containers are 'drained/discharged' safely into suitable external containers so that their contents can be disposed of correctly &amp; safely; - Allow 24 hours for full dissipation.</p> <p>General inspections by technical staff /Building Manager</p> <p>Fault/maintenance reporting procedures.</p> <p>The manager looking after Fire Safety should liaise with the local authority Fire &amp; Rescue Service, so as to be aware of the levels of response to the site and considered this information when undertaking and reviewing the fire risk assessment.</p>	<p>Consider Specialist Foam or Dry Powder Extinguishers.</p> <p>Fire Extinguisher training for all warehouse Staff</p> <p>Fire Marshal Training for Key Staff</p> <p>All Staff trained in fire issues; particularly the findings from fire risk assessment, inclusive of all content;</p> <p>First-Aid Training – Team of trained first-aiders?</p> <p><b>Note:</b> Any automatic sprinkler system shall need to be discussed with the Insurers as there may not be a need due to the stand-alone properties of the building. (TBA)</p>		
Cleaning and maintenance of equipment	Staff and/or visitors within the Unit at the time.	<p>Only genuine and verified replacement parts specifically designed for use permitted on all repairs</p> <p>Air monitoring – as specified above, if required</p> <p>Ventilation inspected/tested by competent specialised contractor if and as necessary</p> <p>Maintenance and examinations of equipment by competent persons.</p> <p>Information provided to everyone re-risk of dust build-up, and possible explosion caused by same, to update their specific maintenance risk assessment.</p>	<p>Maintenance and record keeping procedures</p> <p>Working Contractors to be issued with 'Permit-to-Work' documentation prior to commencing any work.</p> <p>No Hot-Work to be carried out whilst stocks of Aerosols are in this Unit.</p>	<b>20</b> High (4 x 5)	

<p>Dust Build-up – possibility that this can cause an explosive atmosphere within the Unit</p>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>Over a period of time, dust can build-up on ledges, shelves, rafters, etc. This can cause a ‘secondary’ explosion in the case of an initial explosion caused by fume build-up</p> <p>Ensure only strict work activities within this Unit; No other activities to be undertaken</p> <p>Ensure ALL goods are securely stored whilst in this Unit</p> <p>Information provided to everyone re- risk of dust explosion (<i>see maintenance above</i>)</p> <p>Security – authorised persons only, key control access</p> <p>Relevant Signage to be deployed</p> <p>General inspections by trained technical staff</p> <p>Fault / maintenance reporting procedures.</p>	<p>Schedule required to periodically remove any residual and accumulated dusts within the Unit.</p>	<p><b>10</b> High (2 x 5)</p>	
<p>Spillage of any substance within the Unit</p>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>ALL Staff trained in the clearing-up of substance spillages using spill kits supplied.</p> <p>Contaminated clean-up materials to be placed within lidded metal bins for disposal through authorised persons via specified waste disposal companies.</p>	<p>Documented Spillage procedures</p> <p>Barriers, Cones, Tape, etc., shall be used to contain area</p> <p>Staff Training on spillages &amp; Spill-Kit Training</p> <p>Authorised Waste Disposal</p>	<p><b>15</b> High (3 x 5)</p>	
<p>Fork Lift Trucks (FLT)s</p> <p>VNA trucks only to be used inside Unit racking (<i>Very Narrow Aisle</i>)</p> <p>All FLT)s (<i>including VNA</i>) are of Electric design</p>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>All Staff who use specified FLT equipment must be fully trained</p> <p>No internal combustion engines shall be used inside the unit as this could become an ignition source.</p>	<p>FLT Training on VNA vehicles in place for all Staff?</p> <p>Ensure no-one uses FLT)s unless they hold the relevant VNA certification.</p>	<p><b>15</b> High (3 x 5)</p>	
<p>Battery Charging Stations</p>		<p>Battery charging stations shall only be situated near or close to external doorways so as to allow for natural ventilation of battery fumes (if</p>	<p>Equipment must be safe under normal operation.</p>		

		<p>any) to be dispersed. These stations must not be 'in the way' when a FLT is 'on-charge' if this is during normal working hours.</p> <p>Guide rails for the VNA FLTs shall be checked on a regular basis for security and integrity in each aisle in turn.</p> <p>Thorough Examination to be maintained up-to-date on all FLTs at all times. <i>(at least Annually, if not sooner)</i></p>			
<p>Loading &amp; Un-Loading of Delivery Vehicles</p>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>This shall only be carried out within the external yard/delivery area outside the front of the Unit.</p> <p>Segregation of vehicles &amp; pedestrians must be carried out at all times in this area.</p> <p>No vehicles with internal combustion engines shall be allowed inside the unit as this could become an ignition source.</p>	<p>FLT Training in place for all Staff?</p> <p>Ensure no-one uses FLTs unless they hold the relevant certification.</p> <p>Equipment must be safe under normal operation.</p>	<p><b>15</b> High (3 x 5)</p>	
<p>PPE</p> <p>General Warehouse PPE</p> <ul style="list-style-type: none"> <li>• Hard hat (EN 397:2012+A1:2012)</li> <li>• Safety glasses (EN 166:2001 until November 2024 then EN ISO 16321-1:2022)</li> <li>• Safety goggles (EN 166:2001 until November 2024 then EN ISO 16321-1:2022)</li> <li>• Ear defenders – Overhead 'Muffs' type EN 352-1:2020</li> <li>• Ear defenders – Plug type EN 352-2:2020+A1:2024</li> <li>• Gloves (EN 388:2016+A1:2018 ABCDE) (the letters ABCDE now represent the</li> </ul>	<p>Staff and/or visitors within the Unit at the time.</p>	<p>All Staff to wear PPE that is relevant to the task they are carrying out at the time; e.g.</p> <ul style="list-style-type: none"> <li>• General Warehouse Duties</li> <li>• FLT Drivers</li> <li>• Maintenance Staff (Contractors)</li> <li>• Cleaners</li> <li>• Other Staff</li> <li>• Visitors</li> </ul> <p>Minimum mandatory PPE expected shall be;</p> <ul style="list-style-type: none"> <li>• Safety Footwear (<i>Rubber-Soled</i>)</li> <li>• Gloves</li> <li>• Hi-Vis Vest/Jacket</li> </ul>	<p>The correct &amp; necessary PPE shall be determined by further risk assessment review at later date.</p> <p>Office Staff &amp; Visitors will be expected to wear the minimum mandatory PPE requirements when inside this unit.</p> <p>Consider anti-static PPE &amp; clothing</p>	<p><b>15</b> High (3 x 5)</p>	

<p>new Cut resistance levels, formerly 12345)</p> <ul style="list-style-type: none"><li>• Safety footwear (EN ISO 20345:2022)</li><li>• Hi-vis vest (EN ISO 20471:2013+A1:2016)</li><li>• Coveralls (EN 13034:2005+A1:2009)</li></ul>					
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Information, Instruction & Training	Staff	<p>Training is carried out for ALL Staff.</p> <p>Staff also to be instructed on dealing with Visitors inside the premises, whether this be Visitor or Contractor or Other.</p>	<p>Training to be inclusive of;</p> <ul style="list-style-type: none"> <li>• DSEAR</li> <li>• COSHH</li> <li>• Emergency Procedures</li> <li>• Safe Equipment <i>(as applicable)</i></li> <li>• Air Monitoring <i>(as applicable)</i></li> <li>• Temperature Checks</li> <li>• Spillage Control &amp; Clean-up Procedures</li> <li>• Deliveries &amp; Pedestrians</li> <li>• Waste Disposal Procedures</li> <li>• FLT (<i>VNA Type</i>)</li> <li>• PPE</li> </ul>	<p><b>25</b> High <i>(5 x 5)</i></p>	
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**Summary;**

There are no apologies for any repetition within any part of 'Stage One' of this assessment as separate issues may involve the same or similar controls to be adopted or undertaken in order to meet full compliance; also, some things are best repeated.

Through this DSEAR risk assessment, it has been concluded that the storage of flammable liquids in both Aerosols and Containers is appropriate at this Unit, and under the **Dangerous Substances & Explosive Atmospheres Regulations 2002 (Amended) (DSEAR)**, the whole Unit has been designated as a 'Zone 2' controlled area.

As a reminder, the issues stated below must be fully addressed;

This assessment, therefore, requires the following safety measures and procedures to be addressed;

- Suitable and sufficient control measures;
- Suitable and sufficient mitigation measures;
- General safety measures;
- Emergency procedures to be implemented in the event of an incident.

More can be read directly from the assessment.

Security Issues: To minimise the risk of fire or explosion, you should take appropriate precautions to prevent uncontrolled or unauthorised access, including trespass, to the stored flammable aerosol and liquid containers. These precautions should include appropriate arrangements to secure the site against trespass outside normal work hours; and in particular guard against the possibility of tampering, vandalism and arson.

Separated Building Issues: The company should ensure that flammable liquid storage areas and facilities are adequately separated from;

- site boundaries;
- occupied buildings;
- process areas;
- fixed ignition sources and other features that pose a threat;
- other incompatible materials and dangerous substances within the storage area or facility.

The purpose of this separation is to delay and ideally prevent an incident elsewhere (*on site or off-site*) threatening the flammable storage area/facility.

Equally, in the event of an incident in the area/facility itself, it is intended to allow people to escape from the effects of the incident without suffering harm.

Limiting the scale or nature of an incident and delaying its escalation also provides opportunity to implement emergency procedures.

PPE Issues: The provision of suitable personal and respiratory protective equipment (*PPE/RPE as required*) should not be a substitute for providing appropriate safety measures on the plant, facilities, equipment and work processes. The purpose of PPE, including as appropriate any RPE, should be where this addresses a residual risk that remains after implementing all such appropriate safety measures to these workplace items and work processes that it is reasonably practicable to do so.

Where there is a risk of electrostatic discharge causing ignition, PPE (*i.e. footwear and as appropriate, clothing*) should be provided to guard against this risk. This risk assessment has highlighted the question of whether or not, due to the nature of the work activities and operations carried out by the employee, the PPE clothing provided should be flame retardant.

General Fire Precautions: These are primarily concerned with ensuring people can safely escape to a place of safety in the event of a fire in the workplace. This includes the provision of;

- adequate and appropriate means of detection and giving warning in case of fire;
- adequate means of escape, i.e., 'walked & tested' fire exit routes, etc.;
- suitable means of fighting fire;
- specifying the action to be taken in the event of fire; and...
- appropriate and adequate training of staff in the company's fire safety procedures.

Periodic re-training will normally be required. Such training should include the following aspects;

- the types of flammable liquid & aerosols stored, their properties and hazards (*COSHH*);
- general procedures for safe handling;
- use of PPE (*and RPE as applicable*);
- housekeeping;
- reporting faults and incidents, including minor leaks and spills; and emergency procedures, including response to spillages, raising the alarm, calling the fire and rescue service and the use of appropriate firefighting equipment.

Written procedures shall be required for controlling the risks from the storage of flammable liquids & aerosols, and these should be used as the basis for training.

This entire 'Stage One' assessment will require reviewing as soon as controls have been adopted and all necessary actions have been dealt with accordingly, as well as any further issues that arise following this assessment, which can be dealt with in 'Stage Two' of this DSEAR Risk Assessment at that time.

#### **Additional Points for consideration;**

Comply with fire safety legislation;

- In addition to a fire risk assessment undertaken in compliance with national fire safety legislation, an assessment should be undertaken by a competent person in accordance with the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).
- Premises where 150 tonnes or more of flammable aerosols (including LPG) are stored need to be managed in compliance with the Control of Major Accident Hazards Regulations (COMAH).

Protect business continuity;

- All businesses should take steps to maintain the continuity of their operations by making and rehearsing a suitable emergency plan.

Provide suitable training for staff;

- All relevant staff, including temporary staff, should have induction and follow-up training concerning the hazards of the products stored, correct handling techniques, good housekeeping, emergency procedures and procedures for dealing with damaged or leaking stock.
- Training should provide clear advice regarding the use of portable fire extinguishers to fight a fire in the vicinity of stored aerosols. Staff should be warned against continuing to fight a fire if aerosols have become, or are likely to become, involved.

Apply effective fire safety management;

- The use of lift trucks in an aerosol warehouse should be carefully managed.

- Organisations storing aerosols (*or LPG*) should establish access (*either on-site or immediately available off-site*) to a source of competent expert advice to provide training on aerosol safety and advice in case of an incident.
- Ensure that fork lift trucks have suitable protection for the hazard zone in which they are to be used. Category 3 Equipment is equipment which is deemed safe under normal operation within a zone classification of 'Zone 2'.

Store aerosols safely;

- Bulk stocks of aerosols should be segregated and isolated from other materials, preferably by being housed in a separate building.
- Where this is not possible, stocks of aerosols may be totally enclosed within a stout steel mesh cage of appropriate size and strength, including self-closing doors, to prevent projection of exploding aerosols.
- Special care should be taken in the storage and handling arrangements of aerosols to prevent accidental damage due to crushing, falling or impact.
- Aisles should be of adequate width to allow free movement of lift trucks or automated equipment used for the handling of aerosols.

Establish procedures for managing waste and damaged containers;

- Any damaged aerosols (*aerosols affected by rusting, impact or other causes*) should be immediately removed from the storage area to the open air where any flammable vapours can be safely dispersed.
- Powered vehicles must not be used to move damaged stock unless they are specially adapted for use in flammable atmospheres. Vehicles powered by internal combustion engines should not be used.

Provide effective fire protection;

- Premises used for the storage of aerosols should be protected by a sprinkler system to prevent a fire spreading to aerosols and to limit a fire involving aerosols.
- It is important that arrangements are made to provide the best possible access for firefighting.

### **Definitions;**

DSEAR:

- The 'Dangerous Substances and Explosive Atmospheres Regulations 2002' set minimum requirements for the protection of workers from fire and explosion risks related to dangerous substances and potentially explosive atmospheres. The Regulations apply to employers and the self-employed at most workplaces in Great Britain where a dangerous substance is present or could be present.

#### 'Stage One;

- This refers to an initial DSEAR Assessment, which is carried out on the initial understanding that there are no controls whatsoever, which in turn, will not cloud the issues that are needed to be addressed.
- It is only at 'Stage Two,' which is purely a review of 'Stage One,' following that everything has now been addressed from that initial assessment, that we can make sense of the controls which must be in place in order to comply with the Regulations.

#### 'Zone 2': (under the DSEAR Regs)

- Explosive atmosphere may occur under abnormal operation and only persists for a short period.
- unlikely to occur in normal operation, if it does will only be for short periods, i.e. <10hrs per annum but still sufficiently likely as to require controls over ignition sources.
- Equipment (*i.e. fork lift trucks etc*), must be safe under normal operation within this Zone. (*This is classed as 'Category 3' equipment*).

#### Aerosol:

- An aerosol is a suspension of solid or liquid particles in a gas, normally the air. This is inclusive of LPG.

#### Aerosol dispenser:

- A non-reusable container made of metal, glass or plastic containing a gas compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state. Aerosol dispensers have become commonly known simply as 'aerosols.' In this documentation, the term 'aerosol' refers to an aerosol dispenser together with its contents unless otherwise stated. Obviously, in the case of LPG the container is re-useable.

#### Flammable and extremely flammable aerosols:

- The labelling requirements of the Aerosol Dispensers Regulations 2009 which implements the Aerosols Dispensers Directive (ADD) in the UK, refer to the contents of aerosols being 'flammable' or 'extremely flammable'.

Aerosols are classified as follows in accordance with a specific testing regime:

- the aerosol is classified as 'extremely flammable' if it contains 85% or more Flammable components and the chemical heat of combustion exceeds or is equal to 30kJ/g; or...
- the aerosol is classified as 'non-flammable' if it contains 1% or less flammable components and the chemical heat of combustion is less than 20 kJ/g.

Aerosols may be classified as 'flammable' after undergoing further tests based on the heat of combustion and an ignition distance test. Those that do not meet the specified requirements are determined to be 'extremely flammable.'

Liquefied petroleum gas (*LPG*):

- Commercial butane or propane or any mixture of the two.

Propellant:

- A liquefied, compressed or dissolved gas that provides the pressure inside the aerosol dispenser. The propellant may, or may not, be part of the active ingredients of the formulation of the product.