HEALTH AND SAFETY MANAGEMENT

THE MANAGEMENT OF RISK

Irish Red Cross

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THE MANAGEMENT OF RISK

INTRODUCTION

Employers who create risk through work activities have a legal duty to understand those risks and make sure they are kept as low as reasonably practicable.

Health and safety legislation requires employers to protect the health safety and welfare of their workforce whilst at work. To demonstrate active management of health and safety at work, every employer has to make suitable and sufficient assessments of the risks (risk assessments) associated with their business and the workplace(s) from which they operate. Where the risk assessment indicates unacceptable risks, the employer must take action to reduce them to an acceptable level. Subsidiary legislation also contains a requirement for specific risk assessments to identify whether additional controls are required in specific circumstances.

The legal provisions behind the risk assessments described in this guidance are listed elsewhere in the health and safety management system supplied to you by Peninsula.

The significant findings of risk assessments and particularly the outcome have, by law, to be explained to any workers who may be affected by their content. Where five or more persons are employed in the same organisation, the assessment must be in writing. Risk assessments must be carried out by a competent person(s); that is a person(s) who has the necessary training, knowledge and understanding of the risk assessment process and relevant practical experience of the work activity involved. Significant benefit can be gained by involving local supervisors, safety representatives or employees in the process; they have detailed knowledge and insight into what goes on and how risk may be controlled in practice.

This guidance contains:

- An explanation of when and how to complete risk assessments; and
- Examples of completed assessments.

Using BusinessSafe Online, risk assessments can be opened, completed and saved on-line and the system will store the information for future access, allowing you to print and edit each risk assessment at a later date. Alternatively, blank forms may be downloaded from BusinessSafe Online and used either for note taking before data is entered on-line or for the manual completion of risk assessments.

Assessments that have not been made on BusinessSafe Online should be kept in a Safety Records file. A copy of the completed assessments must be available for employees to see and should be used as part of their health and safety instruction. It may be appropriate to keep a copy of the assessment in the area to which it relates.

The significant findings of the assessments may also need to be incorporated into safe systems of work. Remember that where there is a formal safe system of work it should be recorded and available for day to day use, ideally as a laminated document displayed in the areas where the work takes place. If it is not readily available you will be unable to prove its existence or that it has been used as the basis for training the workforce.

ABOUT THIS GUIDANCE

This guidance contains advice on how to carry out risk assessments in a way that matches the Enforcing Authorities' own guidance - The Five Steps to Risk Assessment.

There are different types of assessments that need to be carried out. This guidance provides clear, concise information and the forms that will allow you, as an employer, or your senior managers to carry out 'task based' risk assessments including those tasks that involve the risk of fire.

You will find guidance on carrying out;

- General risk assessments.
- Hazardous substances and chemical agents risk assessments.
- Risk assessments for process related fire risks.
- Display screen equipment risk assessments.
- Manual handling risk assessments.
- New and expectant mothers risk assessments.
- Children and young persons risk assessments.

All workplace tasks and processes should be assessed using the guidance in the section 'General Risk Assessment' and recorded in BusinessSafe Online or on the paper equivalent form RA-BSO. The system will lead you through the risk assessment process following the 5 step approach specified by the Health and Safety Executive.

Assessments covered in the later sections, the use of hazardous substances and chemical agents etc. require that you obtain or consider specific detailed information before completing the risk assessment process. Specific checklists are provided to guide you through these additional tasks.

From time to time completion of a risk assessment will require action to identify specific levels of noise, vibration, dust or fumes in a workplace. This type of assessment is specialised and where such hazards are identified you will need to employ a specialist to carry out the measurements and help you identify whether and what additional control measures are necessary. The information from the specialist's detailed report should be summarised in the risk assessment record.

Separate guidance for general fire precautions and safety matters is provided to you as part of Peninsula's BusinessSafe health and safety management system. Fire safety law requires every person in control of a workplace to assess the means of escape, fire alarm systems, fire fighting equipment, fire procedures etc. and take action to ensure that in the event of a fire all occupants of a building can quickly escape to a place of safety. The fire safety guidance will help you meet that requirement.

The BusinessSafe system contains a series of Guidance Notes to help you complete your specific risk assessments. The Guidance Notes provide information and advice on particular individual subjects and the control measures normally required. They are routinely amended and updated to reflect current best practice. The latest version is always available to you in the BusinessSafe Online reference library. Although you are able to download and print

Guidance Notes we recommend that you use them on line to ensure that you always use the latest version.

You may also find that forms referred to in this file and other BusinessSafe documents do not exactly match the examples shown. Because we operate a system of continuous improvement (ISO 9001) we regularly revise our forms and guidance in the light of changing circumstance and feedback from our clients. You will always find the latest versions on line in BusinessSafe. If the revised versions are unclear or you are in anyway uncertain do not hesitate in contacting us for advice.

Further advice on any health and safety at work issue is available at all times from Peninsula's BusinessSafe 24 Hour Advice Service.

- In the Republic of Ireland call 01 855 5050 option 2;
- In Northern Ireland call 0844 892 2786 option 2;
- From elsewhere call 0844 892 2772 option 2.

TERMINOLOGY

It is important that a number of terms used in the guidance are clearly defined and understood. They are set out and defined here.

Hazard

A hazard is anything that has the **potential** to cause harm.

For example:

- Mechanical contact hazards e.g. the blade of a circular saw
- Access hazards e.g. an extension lead across the floor of a corridor
- Manual handling hazards e.g. lifting a heavy sack of ingredients
- Corrosive substances hazards e.g. sodium hypochlorite - bleach
- Moving vehicle hazards e.g. a reversing vehicle.

It is always important not to confuse hazards with outcomes, for example an uneven floor is a hazard whilst a trip or fall is the outcome of exposure to the hazard. Similarly a trailing cable is a hazards, the outcome is that someone trips over it.

Significant Hazard

A hazard becomes 'significant' when the result of ignoring it or failing to deal with it will lead to injury or loss (physical or financial). In risk assessment we have to determine which hazards are so 'significant' as to require action.

Risk

Risk is the **probability, chance** or **likelihood** that harm will actually be caused.

Control Measure

Where a serious hazard has been identified you are legally obliged to eliminate it if that is a reasonably practicable course of action. Where this is not possible **control measures** are required to reduce and control the risk of harm being caused to an acceptable level; by providing for example:

- safety devices;
- specific training for personnel;
- appropriate protective clothing;
- appropriate safety signs to warn of the risks.

Worst Case Outcome

Every hazard has a number of possible outcomes. For example, a knife cut to a finger can result in a scratch, a cut that might require stitches or in the most exceptional of cases the loss of the finger.

The loss of the finger, in this instance, would be a 'worst possible outcome'. But in completing a risk assessment we should be considering the worst possible realistic outcome. Risk assessment is about identifying and controlling foreseeable as opposed to possible risk.

Remember this point when completing risk assessments, identifying the level of risk and the appropriate control measures - we should consider only the **worst case foreseeable outcomes**. If we follow this process we will not end up prohibiting sensible and legitimate activities.

In the risk assessment process we usually identify five levels of **worst case foreseeable outcome**.

1. **Fatality** - Death of an employee or any other person due to a work activity.
2. **Severe Injury** - Major injuries to an employee, for example:
   - Fractures (other than to the fingers, thumbs or toes).
   - Loss of consciousness.
   - Amputation.
   - Dislocation of shoulder, hip, knee or spine.
   - Loss of sight.
   - Eye injury caused by chemicals, hot material or a penetrating injury.
   - Injuries requiring resuscitation.
   - Injuries resulting in admission to hospital for more than 24 hours.
   - Acute illness from absorbing a substance which requires medical treatment.
   - Injury as a result of violence in the workplace.

3. **Lost Time Injury** - injuries which are not listed above but cause an employee to be away from work or unable to do their normal work for more than three consecutive days after the day of the accident (including non-work days), for example:
   - Sprained ankle.
   - Broken toe.
   - Severe laceration to the hand.

4. **Minor Injury** - injuries which do not result in the employee being unable to do their normal work for more than three consecutive days, for example:

- Small cut.
- Minor burn.
- Bruising.

5. No Foreseeable Risk of Injury - Important because damage may still be caused to plant, equipment, product or property.

WHAT IS RISK ASSESSMENT?

In everyday life we all make several risk assessments a day without even thinking about them. In crossing a road you look both ways, assess the traffic hazard, assess the risk of being hit and decide whether it is safe to cross, safer to wait, or to find a controlled crossing. In driving we make the same assessment of hazard and risk and make decisions for every move we make, whether it is pulling out from a side road, overtaking, or in dealing with an amber traffic light. If we don't make sensible decisions based on the situation, the information available to us, and our knowledge of the Highway Code, the Rules of the Road, we run the risk of being injured or of injuring someone else. In this case the Highway Code, the Rules of the Road, is a Guidance Note giving a series of control measures for safe driving. This is risk assessment in its most obvious form.

Employers have to carry out risk assessments to identify the hazards that face their workforce (and others), to evaluate the risks from those hazards and to identify the measures required to control those risks to an acceptable level. Where the control measures in place are less than those identified as necessary, action must be taken to supplement those existing control measures.

Risk assessments will be required for all work activities and specific tasks that involve significant risk.

The process should not be over-complicated, but should identify:

- The 'significant hazards' that employees may be exposed to.
- Who could be harmed and how?
- What is the likelihood that someone could be harmed by the hazard?
- How the hazards are controlled and whether any action is required to deal with the hazard.

In most businesses and workplaces the hazards are fairly obvious. Identifying them is a simple but necessary task. You may already be aware that certain machinery in your workplace could cause harm or that there is a place on your site where pedestrians have to cross a traffic route. If so, the risk assessment procedure helps to ensure that you have taken reasonable precautions to identify appropriate standards and to prevent and avoid harm being caused.

When Should A Risk Assessment Be Carried Out?

A risk assessment should be carried out when:

- No risk assessment for a particular task has yet been done.
- There are changes in processes, equipment, personnel or premises.

- An accident or near-miss has occurred.

If you have any doubts about what is required, either in general terms or in the terms of a specific risk assessment you only have to call our 24 Hour Advice Service; our Advisors will be pleased to offer advice and guidance. You may also ask the Health and Safety Consultant assigned to your business. They will be able to help you harness the knowledge and understanding you have of your business and work activities so that you can complete your risk assessments. They will be able to work through examples or examine existing risk assessment documents with you. Please ensure that you utilise their experience and knowledge while they are with you.

In BusinessSafe Online you will also find a library of partially completed risk assessments for a number of common issues and processes. These can be used as a starting point for your own risk assessments. They will need to be amended to reflect the situation at your premises, the specific hazards there and the specific local measures you have in place to control those hazards and risks from them. They may also prompt you to additional controls that you should or could put in place to further reduce the risk.

The Five Step Approach

This is the standard risk assessment system recommended by the Health and Safety Executive and Enforcing Authorities everywhere in the European Union. Generally the most appropriate approach to risk assessment is to base it on the tasks carried out by your workforce on a daily or routine basis. In this way you may be able to produce risk assessments that reflect similar work done by several members of staff.

For example, the tasks done by four workers in an accounts office could be covered by one risk assessment. In general all four workers will be doing the same type of work using the same or similar equipment and facilities. However, if the workers carry out a variety of different tasks, or do their work in multiple locations, you will need to consider whether there are significant differences that require you to assess each of the tasks individually and record separate risk assessments.

In some situations you may be able to group hazards into a single assessment. For example in some premises an assessment of 'Workplace Transport' could include hazards from delivery vehicles, fork-lift trucks and pedestrian vehicle hazards. In others the hazards and risks from the use of fork-lift trucks could be so significant that a separate risk assessment might be required for particular areas of the site or for particular types and applications of fork-lift truck. It is in this type of situation that the Advice Service may be able to assist.

Electricians, for instance, should carry out individual risk assessments for each site they work on because hazards and risks will differ from site to site; although a 'generic' site risk assessment could be used and altered to suit the conditions on each site.

Risk assessments can be broken down into five steps;

- Step 1 - Identify the hazards and what could be the outcome.
- Step 2 - Decide who might be harmed and how.
- Step 3 - Evaluate the risks and decide on precautions - this means identifying any existing control measures and deciding whether any additional controls are required.

- Step 4 - Record the findings and implement them - Document the assessments and do what you have proposed.
- Step 5 - Review the assessments and update where necessary.

Both BusinessSafe Online and our hard-copy assessment format (form RA2) follow this 5 step approach.

Remember, a business that has a total of five or more employees must keep a written record of its significant risk assessments.

TYPICAL HAZARDS FOUND IN WORKPLACES

BusinessSafe Online contains a list of common high level hazard descriptions which can be used in completing risk assessments. Before using them you need to consider if and how they apply to your business and whether better more accurate descriptions are appropriate. Do not confuse hazards with outcomes. For example, slips, trips and falls are the outcome of exposure to a hazard such as an uneven floor or a trailing cable. They are not, in themselves, a hazard.

The hazards set out in the following pages are provided as examples of those found in workplaces. The lists are not exhaustive; they are intended as prompts when you look for the hazards present in your workplace.

1. Mechanical Hazards

Trapping hazards	**Impact hazards** (Includes puncture)	**Contact hazards** (cutting, friction or abrasion)	**Entanglement hazards** (rotating parts)	**Ejection hazards** (e.g. of work piece or part of tool)
• Two moving parts or one moving part and a fixed surface. • Conveyor belt and drive. • Vee belt and pulley. • Power press. • Mangle. • Guillotine. • Scissors. • Stapler. •	• Something that may strike or stab someone or can be struck against. • Moving vehicle. • Robot arm. • Sewing machine. • Drill. • Hypodermic needle. • Pendulum. • Crane hook. • Hammer.	• Something sharp or with a rough surface. • Knife, chisel, saw etc. • Blender blade. • Circular saw blade. • Sanding belt. • Abrasive wheel. • Lawnmower blade.	• Drill chuck and bit. • Power take-off shaft. • Pipe threading machine. • Abrasive wheel.	• Cartridge tool. • Thicknessing machine. • Hammer and chisel. • Abrasive wheel. •

2. Hazards Associated with Materials and Substances

Combustion hazards	**Flammable substances** (including highly and extremely flammable- see also explosive below)	**Oxidising substances**	**Dust explosion hazards**
• Timber stack. • Coal store. • Paper store. • Grease. • Magnesium. • Straw. • Plastic foam. • Oxygen.	• Petrol. • Propane gas. • Methane. • Carbon dioxide. • Methanol. • Paraffin. • Acetone. • Toluene.	• Organic peroxide. • Potassium permanganate. • Nitric acid. • Explosive material. • Fireworks. • Propriety explosives. • Detonators. • Some oxidising agents. • Highly flammable gas.	• Coal dust. • Wood dust. • Aluminium powder. • Flour. •

Corrosive and irritating materials	Dust and explosion hazards	Fumes	Vapours	Gases
• Sulphuric acid. • Caustic soda. • Man-made mineral fibre.	• Asbestos fibres. • Silica dust. • Dust mite faeces. • Pigeon droppings. • Coal dust. • Grain dust. • Wood dust.	• Lead fume. • Rubber fume. • Asphalt fumes.	• Acetone. • 1,1,1-tri-chloroethane. • Dichloromethane. • Benzene. • Isocyanates.	• Carbon dioxide. • Hydrogen sulphide. • Carbon disulphide. • Sulphur dioxide.

Mists	Asphyxiants	Ingestion hazards	Contact hazard
• Oil mists. • Printing ink mist. • Legionella.	• Nitrogen. • Carbon dioxide. • Argon.	• Toxic, harmful, corrosive and irritant liquids. • Poisons, e.g. all harmful aerosols, polluted water, contaminated food and drink.	• Swarf. • Rough timber. • Concrete blocks. • Molten metal. • Frozen food.

3. Hazards Associated with the Work Environment.

Access	Work at heights	Obstruction	Stacking, storing hazards	Work with liquids, dusts, grain etc.
• Damaged floors. • Trailing cables. • Oil spills. • Water on floor. • Debris. • Wet grass. • Sloping surfaces. • Uneven steps. • Changes in floor level. • Locked and obstructed exits.	• Fragile roof. • Edge of roof. • Edge of mezzanine floor. • Work on ladder. • Erecting scaffold. • Hole in floor.	• Low headroom. • Sharp projections.	• High stacks. • Insecure stacks. • Inadequate racking. • Stacking at heights.	• Grain silo. • Tank. • Reservoir. • Sump. • Work over rivers. • Work near canal.

Light	Temperature	Confined spaces	Ventilation
• Glare. • Poor lighting. • Stroboscopic effect. • Arc welding. • Molten metal.	• Work near furnace. • Cold room. • Outdoor work: • Hot weather. • Cold weather. • Wind chill factor. • Work in snow, rain	• Work in • Tanks. • Chimneys. • Pits. • Basements. • Unventilated rooms. • Silos, Vessels.	• Fumes. • Odours. • Tobacco smoke.

•

4. Hazards associated with the work methods

Manual handling	Repetitive movements	Confined spaces
• Lifting. • Lowering. • Carrying. • Pushing. • Pulling. • Hot or cold loads. • Rough loads. • Live loads, i.e. people or animals.	• Keyboard work. • Using screwdriver. • Using hammer and chisel. • Bricklaying. • Plucking chickens. • Production line tasks. • Supermarket checkout. •	• Seated work. • Work above head height. • Work at floor level. •

5. Other Hazards

Electrical, pressure, stored energy, stability, overloading

Electrical hazards	Pressure hazards	Stored energy hazards	Stability hazard	Overloaded or defective due to mechanical failure
• Electricity: • Electricity above 240v. • Electricity (240v). • Electricity (110v). • Ignition sources: • Static. • Batteries.	• Compressed air. • Compressed gas. • Steam boiler. • Vacuum. • Hydraulic systems.	• Springs under tension. • Springs under compression. • Hoist platform, lift cage. • Conveyor tension weight. • Raised tipper lorry body. • Counterweight. • Load carried by weight.	• Inadequate crane base. • Fork-lift truck on slope. • Machine not bolted down. • Mobile scaffold too high. • Scaffold not tied.	• Crane overload. • Chain sling. • Eye bolt overloaded • Scaffold over load. • Hopper overfill.

Radiation, noise, vibration and thermal hazards

Radiation hazards	Noise hazards	Vibration hazards	Thermal hazards
• Ionising radiation: • X rays. • Alpha and Beta radiation. • Neutrons. • Non ionising radiations: • Microwave. • Radio frequency. • Laser. • Ultraviolet. • Infrared.	• Pneumatic drill. • Operation of plant. • Entertainment and music in pubs and clubs.	• Pneumatic drill. • Operation of plant. • Chain saw. • Electric sander. • Electric drill. • Hand electric planer. • Garden equipment. • Hand food blenders.	• Hot surface. • Using blow lamp. • Welding flame or arc. • Refrigerant. • Steam.

Hazards associated with work organisation

Contractors	Organisation of work	Work in public areas
• Work above employees. • Use of harmful substances. • Contractors welding. • Process fumes. • Services (e.g. underground electricity cables). • Stored hazardous materials.	• Monotonous work. • Stress. • Too much work. • Lack of control of job. • Work too demanding.	• Trailing cables. • Traffic/plant movement. • Obstruction to blind person. • Obstruction to prams etc. • Work over public.

Others

Attack by animals	Attack by people	Natural hazards
• Bees. • Dog. • Bull. • Fleas. • Snake. • Horses. • Cattle.	• Criminal attack. • Angry customer. • Angry person. • Drunken person. • Drug abuser.	• Lightning. • Flash flood.

COMPLETING A RISK ASSESSMENT

The following pages lead you through the process of making and recording a risk assessment. (The BusinessSafe Online User Guide and HELP tools may also be of use.) In addition to the general requirement (A) to assess risks arising from work related activities there are, as previously mentioned a number of situations where the general risk assessment must be supported by other details or be based on a specific situation.

These are explained in the following sections;-

A General Risk Assessment

B Risk Assessment where Substances Hazardous to Health are present.

C Risk Assessment where there are Process Related Fire Hazards

D Risk Assessments of Display Screen Equipment Users.

E Risk Assessment where there are Manual Handling Hazards

F Assessment of Risks faced by a New and Expectant Mothers

G Assessment of Risks faced by an employee who is a Child or Young Persons.

The risk assessment process is the same, whatever its type; all assessments in BusinessSafe Online follow the 5 Step Approach. The process described below should be used for each type of assessment. Always include the name of the lead assessor, the names of any other people involved, the date of the assessment and mark it as 'Live' when complete.

Each assessment follows the same basic process but some may include a checklist or, as in the substances hazardous to health risk assessment, a substance information sheet.

These instructions should be read in conjunction with the risk assessment pages in BusinessSafe Online or applied to the hard copy risk assessment form - form RA-BSO. Online you are led through the steps; the paper version, page 15, can't do this and is in the format of a printed version of an assessment completed online. Blank copies of form RA-BSO can be downloaded from the Document Library or ordered by calling 0844 892 2772.

When carrying out the risk assessment process, a subjective opinion should be given regarding the expected effects of a hazard. You should compare what control measures are already in place with what further control measures will be required to be in place to make the work activity safe.

Step 1 - Identify the Hazards and the Potential Outcomes (column 2 of RA2)

The identification of hazards can only be done accurately through observation and consideration of the work activity. Consider initially a list of subjects or tasks to be assessed e.g. the drawing office, the welding shop, the paint shop, use of fork-lift trucks etc. In BSOO use this list to create an index of risk assessments before going on to complete them one by one. Alternatively, complete them one by one as you assess a particular activity.

Observe the work taking place looking for potential hazards (refer to the lists in the previous pages if you need a prompt) and add them to a BusinessSafe Online assessment.

GENERAL RISK ASSESSMENT

Company Name:
Site Address:
Location

Title	**Date of Assessment:**	**Risk Assessor:**
Risk Assessment Reference	**People Involved in Making This Assessment:**	
Task/Process	**People at Risk:**	

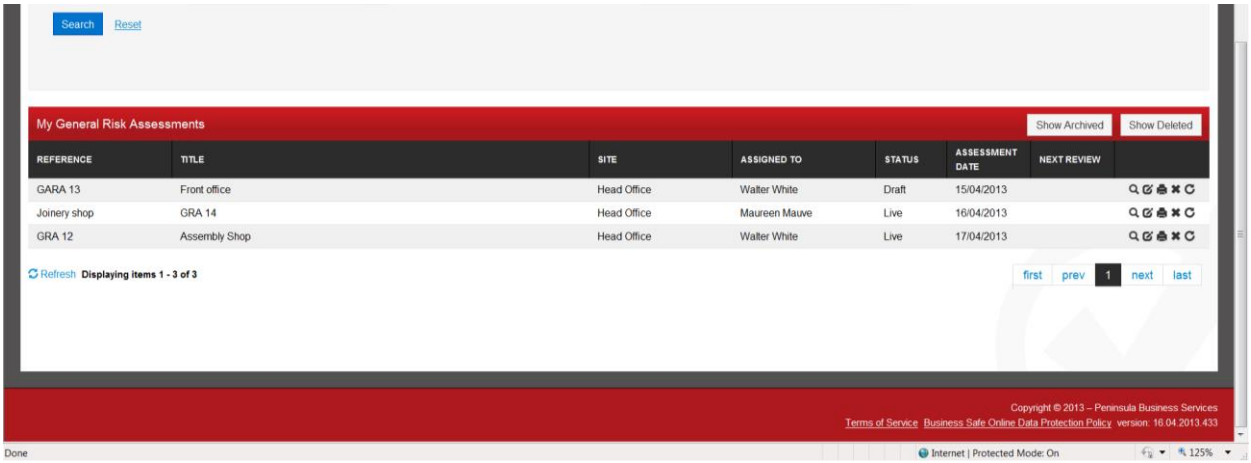
Hazard:			
Control Measures:			
1			
2.			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1.			

Hazard:			
Control Measures:			
1			
2.			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1.			

Review date	**Reviewer**

Involve supervisors and the workforce in the risk assessment process - they will be aware of hazards which are not immediately obvious. Don't just consider routine work; ask about what happens when things aren't going to plan. What hazards appear during tool setting and adjustment, breakdown repairs or during maintenance? Ask who goes where, to do what; and assess any additional hazards revealed by the answers.

From BusinessSafe Online
Risk Assessment Index



Manufacturers' instruction booklets for equipment or Safety Data Sheets (SDS) for hazardous substances and chemical agents are essential for you to be able to identify hazards connected with their use. Use them as a source of information.

Accident Book entries, sickness records and health surveillance records can also help you to identify workplace hazards.

Step 2 - Decide Who May Be Harmed

On the Hazards-People Tab of BusinessSafe Online (people at Risk on the hard copy) identify who could be affected by the hazard or its outcomes. Do not forget that among your workforce and visitors to the workplace there may be some who are particularly vulnerable. These include;-

- New employees.
- Young workers. (See section G on Young Persons)
- Trainees, of any age.
- New or expectant mothers. (See section F on New or Expectant Mothers)
- Staff with disabilities. (consider physical, mental, visual and hearing disabilities)
- Visitors, contractors, maintenance engineers who will not be aware of all the workplace hazards.
- Members of the public, or people who share the workplace with you and could be affected by your activities, including residents.

For personal assessments relating to individual employees use the Personal Risk Assessment module of BusinessSafe Online using the General Risk Assessment to record your generic approach to the issues.

Step 3 - Identify Any Existing Control Measures – Evaluate and Decide What Actions Need To Be Taken

On the Control Measures Tab of BusinessSafe Online or column 3 of RA2 note the precautions that are already in place to control the hazards listed in column 2. For example:

BusinessSafe Online

Hazard: Hazardous substances. Risk of ill-health due to exposure to solvent fumes from adhesive 123.			
Control Measures:			
1. Local exhaust extraction provided. Purchased as suitable for use with Solvent 123. System maintained in house.			
2.			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1.			

or

BusinessSafe Online

Hazard: Falling objects. Risk of head and other injury from work pieces and debris falling from edge of mezzanine floor.			
Control Measures:			
1. Toe boards fitted at bottom of guardrails to prevent work pieces or debris falling from or being kicked over the edge of the floor.			
2.			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1.			

If there are no existing control measures you should state in column 3 - *"No control measures are in place".*

Now you have to evaluate the risk and decide what further measures, if any, are necessary to deal with the hazards; noting them under Further Control Measures Required.

Evaluating the risks

When you have identified workplace hazards and any control measures that may already be in place you need to evaluate any continuing risk to your workforce and others. This evaluation of the continuing risk is required to support decisions about the need for additional control measures and the priority for their introduction.

Making these decisions can seem quite difficult, especially if you have not done risk assessments before or you do not have a history of incidents in your workplace. It's not that difficult. In practice you have to ask two questions;

1. What is the most likely **worst case foreseeable outcome** (see page 5)?

2. What is the chance of that outcome happening?

Consideration of some examples may help illustrate the point.

Warehouse

In a busy warehouse, workplace transport is identified as a significant hazard because delivery vehicles are coming and going almost continuously throughout the working day. In addition there are constant fork-lift truck movements to load and unload the vehicles and to put the goods in and out of store. The most likely worst case foreseeable outcome here is a fatal injury; not only is the risk obvious, it is also supported by statistical evidence.

In this warehouse workers are routinely present in the loading bays and in the aisles of the warehouse. No control measures such as the use of high visibility clothing or restricting entry to essential personnel are in place. So the risk of someone being struck by a moving or reversing vehicle is high.

There is therefore a high risk of a fatal injury.

Office

The office environment contains a wide range of fixed and portable electrical apparatus. Although computers and other IT equipment are portable it is a fact that they are rarely moved around the premises.

Contact with mains electricity can result in death by electrocution. However, in this office the fixed electrical installation and equipment is inspected and tested in accordance with the 'Wiring Regulations' by a competent electrician at 5 year intervals and the portable apparatus is formally inspected and checked at recommended intervals. The system is also fully protected by residual current devices.

Because of the nature of the equipment and its use, and the control measures in place the worst realistically foreseeable outcome would be a lost time injury and the risk of an electrical injury is low.

Shop

A clothes shop uses a hazardous solvent cleaner to spot clean clothes that become soiled whilst being handled by staff and customers or when being tried on. The supplier's data and product labelling indicate that the solvent is hazardous to health by inhalation. However the company only purchases the solvent cleaner in 250 ml bottles fitted with an applicator and use no more than a bottle every three to four months. It is used in the shop whenever a soiled garment is noticed.

In the circumstances, although the solvent is hazardous to health, the quantity on the premises and the circumstances in which it is used, present little risk to the employees using it infrequently for a few seconds at a time. The risk is low and acceptable.

A different evaluation would be appropriate if the solvent were purchased in greater quantities and used, from an open container, by just one employee in a small back room. Control measures would undoubtedly be required.

If the worst case foreseeable outcome is a fatal accident and even with the existing control measures in place there is more than a remote chance of it happening, it is imperative that additional control measures are put in place. This should be given the highest of priorities.

Where the worst case foreseeable outcome is of a serious injury or ill-health and there is more than a remote chance of it happening control measures will also be required. The priority for their introduction will depend on the particular circumstances.

Principles of prevention

The principles behind the reduction of work related risks are contained in the legislation. A hierarchy of controls is set out. You are required to consider them in order, moving from top to bottom of the list until you find a solution that is reasonably practicable. You do not have the choice of choosing to provide personal protective equipment (at the bottom of the list) if it is reasonably practicable to eliminate the risk or adapt the process (towards the top of the list).

The hierarchy of controls that you have to follow is:-

1 Eliminate the risk (often though not always possible).

2 Adapt the technical process (where control measures are technically possible).

3 Prevent access to the hazard (e.g. by guarding or physical distance).

4 Adapt the job or working method to reduce the risk.

5 Replace the dangerous with less dangerous.

6 Provide information, instruction, training and supervision to all who may be affected.

7 Issue personal protective equipment (PPE).

8 Provide welfare facilities (e.g. washing facilities for the removal of contamination).

Whatever the control measures adopted for any given situation, employers will also have to consider:-

- The need for training - to ensure that all workers and others exposed to work related hazard(s) understand the nature of the dangers and the safe, correct working procedures – the safe system of work.
- The need for planned maintenance of equipment or the workplace when some of the control measures may need to be temporarily removed to allow the maintenance to progress. You will need to assess the risks from these activities and maybe introduce alternative controls for their duration.

Where a process requires a written safe working procedure, sometimes referred to as a ‘safe system of work’ or ‘method statement’ this should be explained to the workforce and others. It should be easy to understand and follow; ideally it should be on a single sheet in bullet point

form. It may be used as a training aid when instructing new staff or during toolbox talks. These safe working practices may be displayed next to a workstation or included in a booklet for reference by the workforce. One of the legal requirements surrounding risk assessment is that the workforce should be made aware of the 'significant findings'. The issue of a 'method statement' is one way to achieve this. Laminating copies of safe working practices before they are displayed helps keep them clean and prolongs their working life.

The Enforcing Authorities recognise that taking all reasonably practicable measures to control risk does not completely eliminate risk. Health and Safety law does not require the elimination of all risk – just that it is managed and controlled to a tolerable (societally acceptable) level. For example even on the best constructed and maintained staircase, built to all recognised standards, there will always be a risk of someone slipping and falling. No one has ever suggested that we should stop building or using stairs!

Control measures

There are always situations where it is not possible to remove the risk completely. In these cases you should do what is reasonably practicable to control the risks to an acceptable level.

The cost of improving health and safety need not be great. For instance, putting non-slip material on external steps should be inexpensive, but failing to carry out such simple work could result in a far greater cost if an accident were to happen on those steps because they were slippery.

As the hierarchy of controls suggests, the best course of action is, wherever possible, to completely remove the hazard. This is often possible, for example:-

- By prohibiting and preventing pedestrians entering areas where fork-lift trucks are operating.
- Providing drive through loading bays to prevent the need for large goods vehicles to reverse into confined spaces.
- Replacing solvent based paints and inks with their water-based equivalents.
- Providing mechanical equipment to lift heavy or repetitive loads eliminating the need for manual handling.

Processes and plant can be adapted to reduce a hazard for example the provision of reversing cameras on vehicles or fixed CCTV cameras and displays to avoid the need for workers to enter or closely approach hazardous situations.

Physical guards or barriers can be used to prevent access to dangerous parts of machinery or restrict access to danger areas. For machinery there are many national and international standards for their construction and the protection of operators. Meeting these standards will achieve compliance with legal requirements. Where the risk is from workplace traffic the provision of pedestrian walkways or a pavement is a simple way of segregating people and vehicles.

Sometimes the control measures are already identified for you. For example, equipment and machinery manufacturers will provide technical instructions that explain the safeguards and safety devices incorporated into the machine. They should explain if additional measures need to be provided by the purchaser and what you need to do to enable the equipment to be used

safely. Please note that safety guards have to be suitably designed, must be provided with new equipment and should never be removed to allow the work to be undertaken. This would be a direct offence in law.

The information contained in substance Safety Data Sheets (SDSs) provides the basis for the control and use of hazardous substances and chemical agents.

In other cases appropriate control measures are already identified by the Enforcing Authorities, in guidance notes, approved codes of practice and commentaries, and by trade organisations and associations in codes of practice, national standards and published examples of best practice. In every case you must decide what control measures are appropriate to your situation. BusinessSafe provides a series of guidance notes which contain information about recognised control measures for the range of typical hazards in specific work related processes. They outline the measures that should be in place for most (if not all) your significant workplace hazards. Peninsula's BusinessSafe Consultants will assess your Health and Safety arrangements against the control measures outlined in the guidance notes.

When you have identified existing control measures record them on BusinessSafe Online against each identified Hazard.

Now decide what, if any, further control measures are required and what needs to be done.

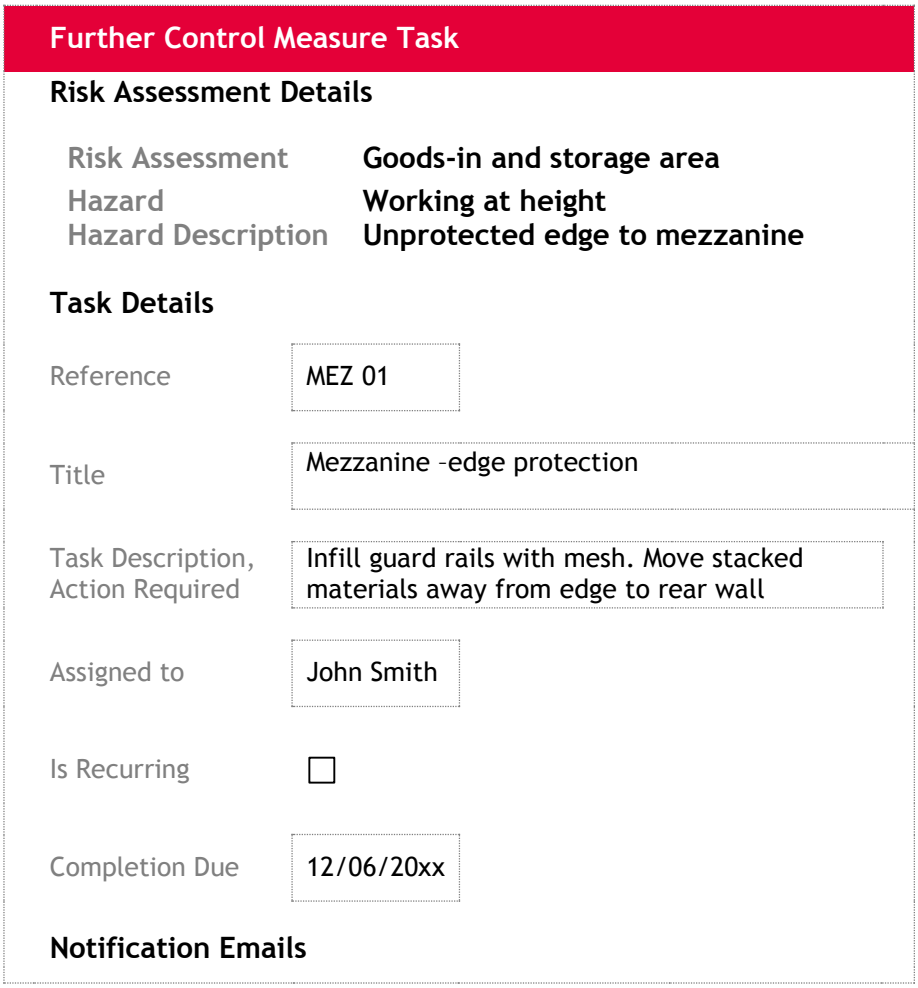
Further control measures.

The ultimate aim of risk assessment is to confirm that your health and safety system and arrangements maintain compliance with legal standards. Where this is not the case the assessment will indicate the 'compliance gap' between your actual performance and the required standard. It will identify the actions you need to take and the further control measures required to meet the legal minimum standards or best practice.

The final stage of the risk assessment process is therefore to allocate responsibility for action and a target 'date for completion'. The responsible person, the manager with responsibility for health and safety, must decide the priorities bearing in mind both the degree of risk and the ease with which the action can be taken.

Obviously the highest risks should be a priority but don't ignore lower risk matters that can very quickly, often at low cost, be put right. The individual actions can be delegated to several people, so that no one person carries an excessive load or responsibility. Properly completed risk assessments will provide an audit trail that can also be used to demonstrate to Enforcing Authority Inspectors and others, a continuing commitment to your Health and Safety management responsibilities. They will demonstrate a record of continuous improvement.

In BusinessSafe Online each additional measure is added by allocating the task to yourself or one of your employees; employees who are BusinessSafe Online users will receive a message informing them of the new task. They and their managers will also be able to see the status of these further control measure tasks in the My Tasks page of the system (page 22). The My Tasks page along with the risk assessment pages will also allow Peninsula Health and Safety Consultants to monitor how well the business is managing health and safety at work.



Further Control Measure Task

Risk Assessment Details

Risk Assessment	**Goods-in and storage area**
Hazard	**Working at height**
Hazard Description	**Unprotected edge to mezzanine**

Task Details

Reference	MEZ 01
Title	Mezzanine –edge protection
Task Description, Action Required	Infill guard rails with mesh. Move stacked materials away from edge to rear wall
Assigned to	John Smith
Is Recurring	☐
Completion Due	12/06/20xx

Notification Emails

Step 4 - Record Your Findings

If your business has in total five employees or more you must record your significant risk assessments. Completion of risk assessments in BusinessSafe Online meets this requirement. Similarly hard copy assessments will meet the requirement. Both systems will help employers meet the requirement that significant findings from the risk assessment process should be brought to the attention of employees affected by the hazards and risks. Completed assessments can be provided to each employee or a single copy can be posted on a notice board.

Step 5 – Review and update

Employers are required to keep their risk assessment under regular review. In BusinessSafe Online a default period of 12 months, which can be changed, is set. The system will prompt reminders to the person assigned as responsible shortly before the review is due. The period between reviews is entirely flexible and should be based on risk. Workplaces and activities that are unlikely to change over time and where staff turnover is low will require review less often than areas of high risk, or where the situation is constantly changing, or where staff turnover is high etc. In these high risk areas a shorter interval may be appropriate.

Risk assessments should also be reviewed whenever there are significant changes in the workplace. For example:

- When there are changes in personnel.

- After the installation of new equipment or new and amended work processes.
- Whenever there is an accident, incident or near miss.

SUMMARY

Risk assessments must be 'suitable and sufficient' - they do not have to be perfect! For the risk assessment to be judged suitable and sufficient you will need to show that:

- You have considered all of the work tasks including occasional or seasonal tasks.
- A proper check was made so that the significant hazards have been identified.
- You identified who may be affected.
- You have dealt with all the obvious and significant hazards, taking into account the number of people who could be involved, and readily available information.
- You have considered what happens when things go wrong, for example, when machinery breaks down and needs repair and maintenance or hazardous substances are spilt.
- The precautions you have put in place are reasonable and the remaining risk is low.
- Appropriate steps have been taken to remove or control the risks.
- You have reviewed your assessment when an incident causing injury or damage has occurred.

This process can be used for every type of assessment that employers need to complete. It is really quite simple - identify the hazards, decide who could be harmed and how seriously, how likely is it to happen and what precautions are needed to minimise the risk.

The risk assessment process can be likened to pushing a car from a standing start on a level surface. It takes a fair amount of effort to make the car move, but once it begins to move, a lot less effort is required to keep it moving forward. With risk assessment the initial effort required to produce effective assessments is considerable but once the process has started it needs only an occasional input to keep it in operation and keep assessments up to date.

Little and often will produce the most effective results.

GENERAL RISK ASSESSMENT

Before starting the risk assessment process, outlined in the previous pages, at your workplace take time to consider the activities and tasks that take place. Begin by creating, in BusinessSafe Online, a list of subjects to be assessed or if the on-line system is not to be used form RATL, Task List, (page 15) will serve the same purpose. These lists will help you to identify the hazards to which employees and others (visitors, contractors, members of the public etc.) are exposed. Don't forget to also consider parts of the workplace that are rarely used or visited but where hazards may be present (e.g. storage areas, roof spaces, effluent treatment plant, switch rooms etc.). The examples given later may suggest some starting points.

Once you have identified activities for risk assessment, prioritise them for action. You may find that some tasks contain no element of risk and do not need a formal written risk assessment. There will be others where the risk assessment is simple and easily repeated with the same result each time it is made. Although you may wish to do so, these do not have to be recorded – risk assessment is not intended to be a bureaucratic process or an activity carried out for the sake of it – it should be seen as an active aid in managing significant risks. Many tasks will contain an element of significant risk and, therefore, need to be risk assessed. Even rarely undertaken tasks will require risk assessment where there is significant potential for mishap. You must always be prepared to justify decisions not to complete a risk assessment of any particular task. It is worth noting that when the Enforcing Authorities prosecute a health and safety offence after an accident one of the frequently charged offences is 'failure to have completed a suitable or sufficient risk assessment'.

Where the risk assessment relates to risks to individuals from the use of display screens or manual handling of loads or involves a young person or a new or expectant mother there are specific issues which need to be taken into account in the risk assessment. These assessments are usually very specific and personal in nature, in BusinessSafe Online they are completed as personal risk assessments to ensure that the checklist forms are used, that access to them is restricted and they remain confidential.

Activities involving hazardous substances and chemical agents require an assessment of the health risks posed. This will depend upon the nature of the substances, their physical properties and the quantities used. BusinessSafe Online provides a separate module for this and there are also specific hard copy aids to this assessment.

RISK ASSESSMENT WHERE SUBSTANCES HAZARDOUS TO HEALTH, (CHEMICAL AGENTS) ARE PRESENT

(see also Guidance Note 5-14 – The Use of Hazardous Substances)

Many substances found in the workplace have been identified as being harmful to health. Sometimes the effects become apparent after a short period (e.g. after exposure to carbon monoxide or arsenic). Sometimes the effect does not become apparent until after a long period of latency (e.g. mesothelioma, lung cancer due to exposure to asbestos, may not be diagnosed until 20 years after exposure). In other cases the effects become apparent somewhere between these extremes.

The onset of harmful effects from exposure to hazardous substances is linked to the nature of the material, the amount to which a person is exposed and the length of time for which they are exposed. This means that some less hazardous materials, used in small quantities and from time to time, can often be used with no special precautions other than the provision of general ventilation. Particular examples include domestic cleaning chemicals, paint brush cleaners and the like. For these substances simple sensible precautions will suffice. For the more hazardous substances more extensive precautions and procedures will be necessary.

The ill health effects of exposure to hazardous substances range from occupational asthma through skin irritation, dermatitis, respiratory illnesses or disease, bacterial infections, viral infections to mutagenic and carcinogenic effects. To protect their workers from these effects all employers are required to consider risks to the health of their workforce from the use of hazardous substances. Where risks are identified the employer is specifically required to consider the elimination of the hazardous substance. Where that is not possible they must control its use so that the health of their workforce is not at risk.

Hazardous substances in the workplace may be;

- Chemicals or substances brought into the workplace as raw material or for use in the work process e.g. process chemicals, printing inks, solvents;
- Chemicals or substances brought into the workplace to support the operation of the business, e.g. floor cleaners, polishes, office supplies;
- Chemicals or substances produced as part of the business process or as a by-product of the business, e.g. wood dust;
- Micro-biological arising from contact with organisms present at the workplace e.g., legionella and in waste products.

All must be assessed for risk to the health of the workforce.

The risk assessment process does not have to be complicated. It has to be proportionate to the risks presented by the substances in use. Most small employers use only a limited range of hazardous substances in support of their business. Many of these substances will be similar to, if not the same as, those used at home for cleaning and pest control so the process should not be over complicated. Employers who fall into this category should follow the advice given in this section of this guidance.

Where your Peninsula Health and Safety Consultant has identified that the use of or workplace exposure to hazardous substances is more significant (medium to high hazards and risk) you will have been issued with additional information entitled 'The Management of

Substances and Agents Hazardous to Health' and you need to follow the more detailed advice given there.

Whether a small or significant user of hazardous substances don't forget that if you have any doubts or concerns about this process you can call the BusinessSafe 24 Hour Advice Service for further guidance and information.

Advice for businesses using small quantities of less hazardous substances.

Basically the risk assessment requires you to consider some simple questions; much the same as you might ask when using a fly-spray or similar product at home, for example;

- What is the safe method of use for this product?
- Do I need to wear gloves when I use this product?
- When I have applied this product do I need to leave the room? For how long?
- Is there an alternative that would be safer to use; that would be of less risk to me, my children, my cat, dog; that means I don't have to wear gloves, etc.?

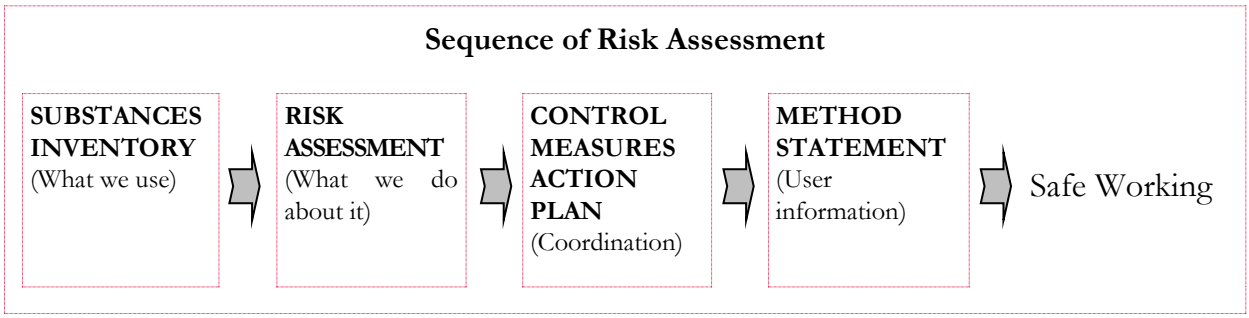
It is much the same at work. The employer needs to ask similar questions about the use of the substance, its effects and its impact on all the people at work. They then need to consider what has to be done to make sure that the substance can be safely used. At work it is imperative that the risks and safe working arrangements are explained to all the workers who handle or use or are exposed to the hazardous substance and that those safe working arrangements are adopted and followed in practice.

Table 1: Hazard Symbols

You are helped in this process by the legal requirements placed on the supply chain to identify and label any hazardous substances that you purchase. If the substance has been identified as hazardous it will carry a warning symbol as shown in table 1. The supplier will also have given you a Safety Data Sheet (SDS) which sets out statutory information about the substance, precautions for use, information on how to deal with spillages, disposal, etc. A typical Safety Data Sheet (SDS) in the latest format is reproduced at Appendix 1.

Both the orange coloured and diamond shaped symbols are in current use. The orange symbols are phased out and will not have been used on new cans and packages after 2015. In 2017 it will become illegal to supply any hazardous substance that is not labelled to the latest requirements.

The assessment process can be broken down into the following four stages



In BusinessSafe Online the hazardous substances module a virtual Wizard helps employers create;

- an inventory of all hazardous substances in use
- an assessment of the hazard posed by use of those substances and an indication of appropriate control measures
- a record of control measures in place and
- details of further control measures required.
- A future development will allow employers to create an Information Sheet, containing substance data, and providing employees with the detail and instructions on the safe method of work that they are expected to follow when using the substance.

For employers who do not use BusinessSafe Online hard copy forms are available.

- Hazardous Substances Inventory (form HSI - page 31) – used to list all substances in use and decide whether a detailed assessment is required.
- Risk Assessment (form RA-BSO – page 14) – used to carry out and record the assessment.
- Control Measures Action Record (form CMAR) – used to gather, document and control the actions required in various risk assessments.

Form HSSI, Hazardous Substances Safety Information Sheet, (page 32) can be used to record hazard and safety data and the safe method of work that has been identified. It can then be issued to employees who may be affected for their information and in support of their training and instruction. At present the form is only available as hard copy and can not be completed in BusinessSafe Online.

Step 1. Use the BusinessSafe Online Hazardous Substances Inventory (page 31) or Form HSI (page 31) to create an inventory of all substances used within the business including;

- Substances supplied for use in work activities (paints, cleaning agents, adhesives, solvents etc.)
- Substances produced as part of work activities (dusts, fumes etc.)
- Substances which occur naturally (dust when processing or moving grain)
- Biological agents (bacteria and other micro-organisms)

For each substance at (i), record the supplier, and whether you have the relevant Safety Data Sheet (SDS). If the substance does not have a hazard symbol on the label it is low risk and requires no further consideration; it should be marked with NO against 'Assessment Required'. Where the substance has a hazard warning consider how much of the substance you or your workforce use, when it is used, by whom and the hazard data information (SDS section 15 - Risk or Safety Phrases and the Hazard Classification) to decide whether the substance needs a full substances assessment. If you use substances that would be used in the home (but not in excessive quantities) and you use them according to the instructions on the label you do not need to do a more detailed assessment. In this case record NO 'Assessment Required'. Other than making sure that your employees are informed about any low level potential hazards and risks and the correct method of use no further action is required.

Step 2. Substances that require assessment will need a detailed Risk Assessment. In BusinessSafe Online the assessment module will include information you have supplied in completing the inventory. It will ask for further information about the quantity used and the physical properties. Using this information the system will indicate and appropriate control system and checklist. Use this information to assess and list the control measures that already exist and to identify any further control measures that are required.

If using a hard copy system these calculations must be made using the guidance and basic data alone, using form RA-BSO.

Step 3. Where additional control measures are required allocate them to employees as tasks and set target dates for completion. These tasks and actions taken can be subsequently tracked in My Planner.

In a hard copy system the further control measure tasks should be allocated and then list them on form CMAR to create an easily monitored Action Plan.

Step 4. Finally, whether using BusinessSafe Online or hard copy, transfer details of the required control measures and any other instructions considered necessary onto the form Hazardous Substances Safety Information (HSSI) (page 32). This will provide information to workers and anybody else who may be affected by the substance. Keep it simple and easy to understand, informing anyone who reads it of the dangers and the safe method of working. Train those who may be affected and keep a record of that training. Make sure that supervisors know what is required. Laminated copies of the form can be given to individual workers as a basic work instruction or method statement or made available for information in the area where the work takes place.

When assessing the risks to health from hazardous substances that are produced as a by-product, arise naturally or biological agents it is appropriate to list them in the hazardous substances inventory. However they cannot always be assessed using the hazardous substances module because it may not be possible to identify with accuracy the hazard symbols or hazard and precautionary phrases that apply. In this case use the General Risk Assessment module for this purpose.

Monitoring and Review

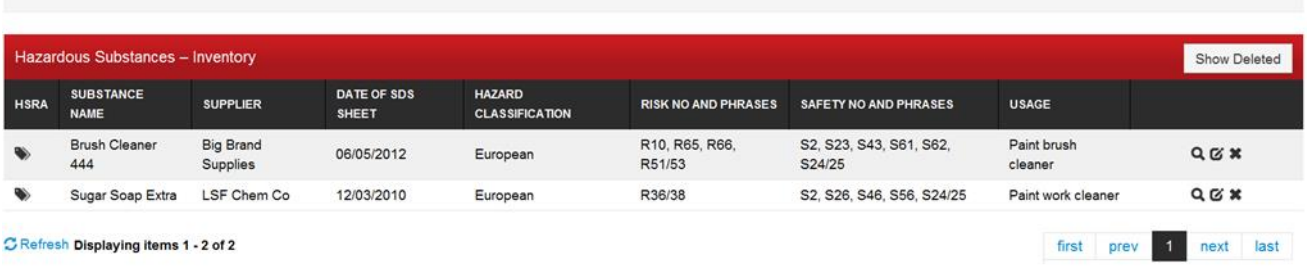
Control measures should be monitored periodically to confirm that they are still effective and that the work situation has not changed significantly. It is recommended that the assessment should be reviewed annually with a written record of the review. In most cases this means simply checking that workers are still following the documented safe procedure and that they are aware of any dangers.

Talk to employees who use the substance when changes to control measures are proposed and after they have been implemented to see what they think and if they have any further suggestions.

Review your assessment if any person complains of feeling unwell or reports any untoward effects as a result of exposure to a hazardous substance.

The Peninsula 24 Hour BusinessSafe Advice Service is available to help with questions about particular substances and the completion of paperwork.

BusinessSafe Online - Hazardous Substances Inventory



HAZARDOUS SUBSTANCES INVENTORY SHEET

Form HSI

Use this form to maintain an inventory of all substances used in the course of the business.

Substance Name	Supplier	Date of SDS sheet	Risk Numbers and phrases	Hazard classification	Safety Numbers and phrases	Assessment required Yes/No	Details of use	Ref Number
Brush Cleaner 444	Big Brand	6/5/2012	R10 Flammable R65 Harmful May cause lung damage if swallowed R51/53Toxic to aquatic organisms R66 Repeated exposure may cause skin dryness or cracking	Harmful	S2 Keep out of the reach of children S24/25 Avoid contact with skin and eyes. S62 If swallowed do not induce vomiting, Seek medical advice. S61 Avoid release to the environment. S23 Do not breathe vapour or spray S43 In case of fire use foam/dry powder /CO2 – Never use water	Yes	Paint brush cleaner, paint thinning	BB444
Sugar Soap Extra	LSF Chem Co	12/3/2010	R36/38 Irritating to eyes and skin	Harmful	S2 Keep out of the reach of children S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S46 If swallowed, seek medical advice immediately and show this container or label S56 Dispose of this material and its container at hazardous or special waste collection point S24/25 Avoid contact with skin and eyes.	Yes	Paint work cleaner	SS5

Irish Red Cross

HAZARDOUS SUBSTANCES SAFETY INFORMATION SHEET

Form HSSI

Use this form to provide information to employees and others in relation to a particular substance in use for work purposes – it should be made available or displayed in the area where the substance is used.

This information sheet links to Hazardous Substances Risk Assessment No. -

NAME OF PRODUCT OR SUBSTANCE:

MANUFACTURER'S NAME:

USE OR EXPOSURE (DETAILS OF THE WAY IT IS USED):

DATE OF SAFETY DATA SHEET (SDS):

LOCATION OF SDS:

IS THIS HAZARDOUS SUBSTANCE GENERATED AS A RESULT OF A PROCESS?

HAZARD WARNING SYMBOL ON CONTAINER LABEL:

Identify

☐ ☐ ☐ ☐ ☐ ☐ ☐ .

☐ … ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Workplace Exposure Limit (WEL):

Stated Risk and Safety Phrases or

Hazard and Precautionary Statements from Safety Data Sheet;

POTENTIAL HARM OR ILL EFFECTS: (state what harm may occur)

Is health surveillance required? YES / NO

ACTION TO BE TAKEN IN CASE OF EMERGENCY: FIRST AID ARRANGEMENTS:

SPILLAGE RELEASE ACTION:

MANAGEMENT CONTACT (in case of emergency):
Name:
Telephone No:

DESCRIBE STORAGE ARRANGEMENTS AND WORK METHOD: (including precautions and controls to be implemented)

Continue overleaf if necessary

Date of Issue:

Date of Review:

Nam of Assessor:

Name of Assessor:

Position:	**Position:**

STORAGE ARRANGEMENTS AND WORK METHOD (continued from previous page)

RISK ASSESSMENTS WHERE THERE ARE PROCESS RELATED FIRE HAZARDS. (Processes involving DANGEROUS AND EXPLOSIVE SUBSTANCES)

Please read our Guidance Notes 4-6 and 4-7 – The Control of Flammable Substances and Dangerous Substances and Explosive Atmospheres before reading this section and attempting to carry out a risk assessment for process related fire risks. You will need to be aware of and understand the advice in those guidance notes when you assess the risk from such materials in your workplace.

Employers are required to carry out risk assessments to deal with the fire risks that may be present at their workplace. There are two aspects to fire risk assessment;

- an assessment under health and safety legislation of the risk of fire and injury for specific tasks or processes involving potential sources of fire or the use of dangerous or explosive substances; and
- an assessment of the general fire risks and controls at their premises, i.e. general fire precautions, adequacy of means of escape, fire alarms, fire fighting equipment, fire instruction and training, maintenance of equipment etc.

This section deals only with the fire and explosion risks from processes carried out in the workplace. It does not relate to general issues of fire safety in premises; for this you should refer to the Fire Risk Assessment and Management information that has been provided.

A process related fire and explosion risk assessment will need to consider potential sources of ignition and the use of flammable and highly flammable chemical substances and agents or explosive substances whenever they are used e.g. paints, varnishes and solvents. It will cover the use of flammable gases such as propane, oxygen and acetylene. It will also have to consider flammable or potentially explosive substances generated in the course of a work activity; for example wood flour and dust. The process related risk assessment will cover the way in which the risks are managed, the way that a dangerous substance is used and how the risks from that use are controlled.

Note that while flammable, highly flammable and explosive substances will normally carry a warning symbol on their container many substances that can become explosive carry no warning label because in their normal state they are not explosive or dangerous. Particular examples are flour and sugar. When bagged they are not explosive but when used the dust they generate can become an explosive mixture given a source of ignition. And if the dust is generated as a by-product of the process, e.g. wood dust in a joinery shop, it can, unless controlled, become an explosion hazard.

Begin the assessment by identifying what hazards are present. This can only be done accurately by observations in the workplace. You should look at the work that is being carried out to identify specific tasks such as welding and paint spraying that could provide the source of ignition for a fire. You should consider the quantities of the substances that are used, the nature of the process and how it is contained and controlled. You should also identify any chemicals and substances that by their nature could increase the risk of a fire and also provide the fuel source to feed a fire.

The hazard warning signs -

				
Danger	**Danger**	**Warning**	**Danger**	**Danger**
May cause or intensify fire; oxidiser	**Explosive; severe projection hazard**	**Flammable solid**	**Highly flammable liquid or vapour**	**Extremely flammable liquid or vapour**

will always indicate that you should be assessing the risk of fire and personal injury from their use (you will also need to make a Substances and Agents Hazardous to Health assessment). In addition manufacturers' instruction manuals for equipment or material Safety Data Sheets (SDS) for substances are essential for you to be able to identify fire hazards.

You may also see the older orange version of these warning signs which will be phased out during 2017.

When considering the risks and how they might be controlled remember the hierarchy of control measures.

- Eliminate the risk altogether.
- If that is not possible adapt the process – use technically feasible control measures.
- Prevent sources of ignition reaching the dangerous substances.
- Adapt the job or working method to reduce the risk.
- Replace the dangerous with less dangerous.

Poor housekeeping can substantially increase the risk of fire. For example, poor storage of packaging materials, waste and litter, some dusts (wood, paper etc.) and poor cleaning regimes can all provide fuel for a fire.

Electrical equipment used in close proximity to dangerous and explosive substances must be specially made for the location in which it is used. The wrong type of electrical equipment and poorly installed or maintained electrical equipment and cabling can provide an ignition source, as can smoking or processes that generate heat or sparks (e.g. plumber's torches, welding or grinding operations).

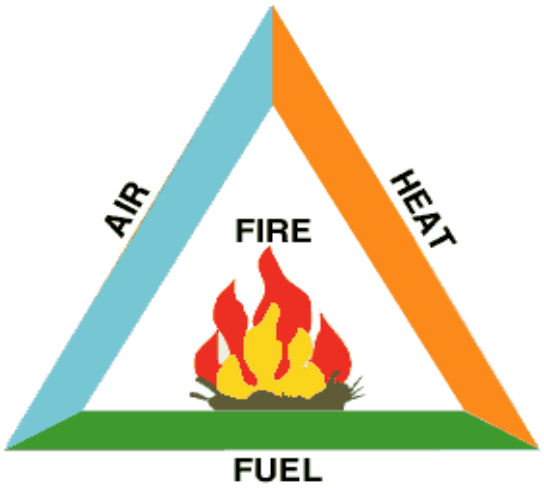
Involve your employees and supervisors in the risk assessment process. They will be more aware of hazards which may not be immediately obvious, particularly during cleaning and maintenance and may be able to identify control measures that will work in practice without affecting efficiency.

In every case consider whether you have provided clear and concise information, instruction and training and made sure that it is understood. Consider whether supervisors have the information and authority needed to adequately manage the risks in the processes under their control.

Use the General Risk Assessment section of BusinessSafe Online or form RA2 to record your findings and identify any additional control measures that may be required for process fire hazards.

These dangerous and explosive substances risk assessments are particularly important to the management of health and safety in the workplace. They are also important for the health and safety of your business. Records show that businesses that suffer from a significant process related fire suffer such disruption that the majority close down within one year of the fire.

It is important to remember that many dangerous substances are also hazardous to health. If this is the case remember to include them in your Hazardous Substances Inventory and assess them for occupational health risks.



RISK ASSESSMENT OF DISPLAY SCREEN EQUIPMENT USERS

Before attempting to carry out a Display Screen Equipment Risk Assessment, please read Guidance Note 5-11– Display Screen Equipment and DSE User Eye Tests and Spectacles.

Employers are required to assess the risks to every regular user of display screen equipment from the use of that equipment. The assessment needs to cover;

- The general environment - lighting, ventilation, workspace.
- The equipment provided - chair, desk, keyboard and screen.
- The employee - posture, eye strain, work load and work related stress.

The first step is to identify the workers who use display screens on a regular basis.

Because many workers are likely to be display screen users the authorities accept that self-assessment by the worker is legitimate. This type of personal risk assessment can be completed and managed within BusinessSafe Online in the Personal Risk Assessment module. It can also be managed as a hard-copy process. Both systems use a self-assessment questionnaire and the questions shown in the hard copy version of form DSEQ (overleaf). Employees should be invited to complete the questionnaire and return it to a trained assessor, who will consider the responses given by the user. In hard copy the form should be signed by both the user and their manager or assessor.

If the user identifies any areas of concern in their self-assessment the assessor must discuss these with the employee. The problems may be resolved by simple adjustments to seating or the position of the display screen itself. Sometimes the provision of gel wrist supports, footrests, document holders or local lighting is the simple answer to the user's concerns.

Occasionally more significant action by the employer may be necessary to improve ventilation or reduce glare. The assessor will identify the further control measures required or refer the issues to senior managers creating Task List entries.

DSE assessments should be carried out every time that a workstation is moved, that a worker moves to a different workstation or when new equipment is installed. Employees who share workstations (job-shares or hot desks) will need to complete individual assessments on form DSEQ.

When the assessor needs to carry out a further assessment of the DSE user and the workstation this can only be done by an accurate observation of the user at work. The user must, of necessity, be involved in the assessment but it is well worth involving supervisors who may subsequently have to manage the outcome. Keep completed self-assessment forms secure and in personal files in accordance with the Data Protection Act.

A generic assessment of the business' approach to DSE assessments will also be required. It will indicate the issue, the measures that are used to control potential risks for the majority and identify those where additional measures are required.

DISPLAY SCREEN EQUIPMENT

Form DSEQ

SELF ASSESSMENT QUESTIONNAIRE

See Guidance Note 5-11 - Display Screen Equipment, DSE User Eye Tests and Spectacles.

Name of person, user: **Location of workstation:**

DSE Use		**Remarks**
1. Is the use of DSE a requirement of your work on a daily basis?	Yes / No	
2. Do you use the DSE for continuous or near continuous spells of an hour or more at a time?	Yes / No	*Whether you answer Yes or No please go on to complete the rest of this form.*
Screen		**Remarks**
3. Is the screen located in front of you when using the equipment?	Yes / No	
4. Is the top of the screen level with your eye level?	Yes / No	
5. Can the screen be tilted and adjusted to a comfortable position?	Yes / No	
6. Is the screen free of reflections e.g. windows, overhead lighting?	Yes / No	
Keyboard, Mouse		**Remarks**
7. Can the keyboard be moved to a comfortable position in front of you?	Yes / No	
8. Is there sufficient room in front of the keyboard to rest your wrists when not using the keyboard?	Yes / No	
9. Are the keyboard symbols clear and legible?	Yes / No	
10. Can you operate the mouse or trackball without reaching?	Yes / No	
11. Can you operate the mouse or trackball with your hand/wrist resting on the desk?	Yes / No	
12. Is there adequate space to manoeuvre the mouse?	Yes / No	
Chair		**Remarks**
13. Is the height of the chair adjustable?	Yes / No	
14. Is the backrest adjustable for height and tilt?	Yes / No	
15. Do you know how to adjust the height of the chair and backrest?	Yes / No	
16. Is the chair fitted with arms?	Yes / No	

17. If YES: When the chair is correctly adjusted do the arms of the chair come into contact with the desk? See section on Posture.	Yes / No	
Desk		**Remarks**
18. Is there adequate work surface to allow a flexible arrangement for the screen, keyboard and mouse operation?	Yes / No	
19. Is there adequate knee room to obtain a comfortable position?	Yes / No	
20. Is there adequate lighting?	Yes / No	
21. Is there adequate humidity in the atmosphere?	Yes / No	
22. Is the work arranged so that there are breaks away from the DSE?	Yes / No	
Posture		**Remarks**
23. When positioned to use the keyboard are your upper arms in line with your upper body?	Yes / No	
24. With your fingers on the keys are your wrists straight?	Yes / No	
25. When in this position is your back supported by the chair's backrest?	Yes / No	
26. When in this position do your feet rest comfortably on the floor without the seat digging into the back of your knees or thighs?	Yes / No	
Eye Tests		**Remarks**
27. Have you had your eyes tested for use with DSE?	Yes / No	
Pain		**Remarks**
Have you ever suffered from work related aches or pains in your: 28. Wrists 29. Forearms 30. Neck 31. Eyes 32. Back	 Yes / No Yes / No Yes / No Yes / No Yes / No	
Have you ever suffered from epilepsy?	Yes / No	
Signed by User:	Date:	
Manager's Comment: Manager's Signature: Position:		

RISK ASSESSMENT WHERE THERE ARE MANUAL HANDLING HAZARDS

You should read Guidance Note 5-9 - Manual Handling before reading this section and attempting to complete a Manual Handling Risk Assessment.

Manual Handling includes the pushing and pulling of loads as well as lifting and carrying. Injuries caused by manual handling are amongst the most common in the UK workplace – about one third of the reported total. As a consequence there is a separate set of legal requirements relating to manual handling at work. Among the requirements is a specific obligation to assess the hazards and risks (as explained above) to employees, which can arise from lifting a load, repetitive twisting or turning, pulling or pushing.

The Enforcing Authorities have published good advice on the identification of manual handling hazards, the provision of mechanical handling aids and other methods or reducing the risks. The guidance sets out a series of steps, issues and questions that have to be considered in each case. We have set these out in the form of a checklist which can be used in respect of individual tasks or workers and will help complete a personal risk assessment in BusinessSafe Online or a hard copy form RA-BSO.

Both systems use the questions in form MHIC (overleaf) to record the significant features of each lifting operation as it relates to the differing capabilities and capacities of each of your workers. The questions are all related to issues that bear on safe lifting, carrying, pushing and pulling. Where the answer to any question is YES a hazard is present. By reference to the guidance note and observing the lifting practice you will be able to identify whether a risk of a manual handling injury exists. Make notes on form MHIC of any existing precautions and any additional measures that you judge necessary to reduce the risks to acceptable levels.

Use completed forms MHIC to guide completion of a generic manual handling risk assessment as a formal risk assessment of manual handling operations across your worksite. Where different standards or conditions apply in different parts of the workplace and for different processes complete an assessment form for each task or department.

If you carry out a personal manual handling assessment the completed assessment will be protected to Data Protection Act principles Hard copy assessments should be kept in secure personal files and protected as required by the Data Protection Act.

MANUAL HANDLING INFORMATION CHECKLIST

Form MHIC

See also Guidance Note 5-9 – Manual Handling

Task Location:		
Task Undertaken:		
Questions to consider:	Yes/No	**Comments -** a YES response indicates that further action may be required. Record any relevant comment here.
The Task – does it involve:-		
Holding loads away from the trunk?		
Twisting or stooping?		
Reaching upwards?		
Large vertical movement?		
Long carrying distances?		
Strenuous pushing or pulling?		
Unpredictable movement of loads?		
Repetitive handling?		
Insufficient rest and recovery?		
A work rate imposed by a process?		
The Individual's capability-does the task job:-		
Require unusual capability?		
Endanger those with a health problem?		
Endanger those who are pregnant?		
Call for special information or training?		
The Loads – are they:-		
Heavy? What is the weight and frequency?		
Bulky or unwieldy?		
Difficult to grasp?		
Unstable or unpredictable?		
Intrinsically harmful (e.g. sharp, hot etc)?		
The Environment: are there:-		
Constraints on posture?		
Poor floors?		
Variations in levels?		
Hot or cold or humid conditions?		
Strong air movements?		
Poor lighting conditions?		
Other factors:		
Is movement or posture hindered by clothing or personal protective equipment?		
Record any further comments or notes on the back of this sheet -		
Completed by:	Date:	
Position:	Link to Risk Assessment Form Ref:	

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ASSESSMENT OF RISKS TO A NEW AND EXPECTANT MOTHERS AT WORK

Guidance Note 1-11 – New and Expectant Mothers contains detailed information which should be used as guidance when completing a risk assessment for a new or expectant mother.

As a starting point remember that neither pregnancy nor motherhood should be regarded as ill health. Safety implications arising from a pregnancy or for a nursing mother can be dealt with through normal health and safety procedures.

Because some hazards in the workplace can affect the unborn child and prospective mother and may also affect the new mother during a period after return to work the law requires employers to assess the risks to NEMs in the workplace and where necessary take steps to reduce them.

There are two parts to this risk assessment. Firstly an assessment of any chemicals, processes or activities that might have an effect on an unborn foetus should be completed, and the results and risks made known to any worker of child bearing age. Secondly whenever an employer is notified or becomes aware that a worker is pregnant a specific risk assessment must be made of that woman's work to identify any risks to her or her unborn child. This assessment may need to be repeated as the pregnancy progresses to ensure protection throughout the term. A similar assessment is required when she returns to work as a nursing mother.

Both BusinessSafe Online and hard copy personal risk assessments use the questions in form NEMA (overleaf) to assess these hazards and risks allowing actions to be planned and implemented as necessary, to protect both the child and mother. Because they contain personal information BusinessSafe Online treats these files as confidential as required by the Data protection Act. Hard copy assessments should also be kept in secure personal files and protected as required by the Data Protection Act.

NEW AND EXPECTANT MOTHERS (NEM) RISK ASSESSMENT CHECKLIST

Form NEMA

Important Notes:

- This assessment should be completed by both the pregnant woman and a supervisor. It should be signed by both to indicate that the answer to each question and the suggested control measures are agreed. It will be appropriate to relate to our Guidance Note 1 -11 – New and Expectant Mothers during the completion of this form.
- You may also find it helpful to refer to other topic related Guidance Notes as you complete this checklist.
- The assessment may need to be reviewed more than once as the pregnancy or return to work develops. It should always be reviewed at the request of the New and Expectant Mother.
- The assessment should clearly state what control measures are already in place and indicate the new control measures required – confirmation regarding the implementation of new control measures should be given in the comments section.

Assessment for (name of NEM): ..				
Assessment prepared by (Name of supervisor): .. Signature: ..				
Date of Assessment				
Is this the first NEM assessment for this pregnancy?	**Y / N** If NO when was the last assessment made?			
Has the NEM named above taken part in this assessment	Y / N		Signature of NEM	
1 - Movement and posture	**Yes**	**No**	**n/a**	**Control Measures**
Does the job involve awkward twisting or stretching	☐	☐	☐	
Does the woman have to stand for periods of, for example more than two-three hours without a break?	☐	☐	☐	
Does she have to sit for periods of more than two-three hours?	☐	☐	☐	
Are there space restrictions (for example, working behind a desk)? If yes, will these cause more restricted movement as the pregnancy develops?	☐ ☐	☐ ☐	☐ ☐	
2 - Manual Handling	**Yes**	**No**	**n/a**	**Control Measures**
Does the job involve twisting, stooping or stretching to lift objects?	☐	☐	☐	
Does the job involve the lifting, pushing or pulling of heavy loads?	☐	☐	☐	
Does the job involve rapid repetitive lifting (even of lighter objects)?	☐	☐	☐	
Does the job involve lifting objects that are difficult to grasp or awkward to hold?	☐	☐	☐	
3 - Protective equipment and uniforms	**Yes**	**No**	**n/a**	**Control Measures**
If the woman needs to wear protective aprons, overalls etc., are they provided in suitable sizes?	☐	☐	☐	
If uniforms are obligatory are they provided in maternity sizes?	☐	☐	☐	

Are the materials used comfortable for all pregnant women to wear?	☐	☐	☐	

4 - Hazardous substances – infection risks & chemicals	Yes	No	n/a	Control Measures
Are there any infection risks in the work? For example: clearing up spilled body fluids or disposing of used syringes.	☐	☐	☐	
Work with raw meats	☐	☐	☐	
If yes to either of the above, are hygiene precautions adequate?	☐	☐	☐	
Are any chemicals used at work known to be of risk to women of child bearing age?	☐	☐	☐	
If yes to above, are pregnant workers kept away from work that could increase exposure?	☐	☐	☐	
5 - Working Time	**Yes**	**No**	**n/a**	**Control Measures**
Is the woman expected to work long hours or overtime?	☐	☐	☐	
Does she have some flexibility or choice over her working hours?	☐	☐	☐	
Does the work involve very early starts or late finishes?	☐	☐	☐	
Does the work involve night work between the hours of, for example, 11pm to 7am?	☐	☐	☐	
6 - Work-related stress	**Yes**	**No**	**n/a**	**Control Measures**
Are there tasks which are known to be particularly stressful, for example dealing with irate customers?	☐	☐	☐	
Are colleagues and supervisors supportive toward the pregnant worker?	☐	☐	☐	
Is the woman aware of what to do if she feels she is being bullied or victimised?	☐	☐	☐	
Has the individual risk assessment taken into account any concerns the woman has about her own pregnancy?	☐	☐	☐	
7 - Extremes of cold or heat	**Yes**	**No**	**n/a**	**Control Measures**
Does the work involve exposure to temperatures that are uncomfortably cold (below 16ºC) or hot (above 27ºC)?	☐	☐	☐	
If protective clothing is provided against the cold is it suitable for the pregnant worker?	☐	☐	☐	
Is the worker exposed to cold draughts even when the average temperature is acceptable?	☐	☐	☐	
Are there arrangements for sufficient breaks and access to hot and cold drinks?	☐	☐	☐	

8 - Work at height	Yes	No	n/a	Control Measures
Does the work involve a lot of climbing up and down steps or ladders?	☐	☐	☐	
Does the work involve carrying items up or down stairs or ladders?	☐	☐	☐	
If a mobile platform is used to access higher levels, is there enough room for a pregnant worker to use it safely?	☐	☐	☐	
9 - Work-related violence	**Yes**	**No**	**n/a**	**Control Measures**
Is the job one which is perceived to have a high risk of violence (for example security work, single staffing in a petrol station)?	☐	☐	☐	
Is there always support at hand to help any staff who may be threatened or abused by customers?	☐	☐	☐	
Are managers and supervisors aware of the extra risks posed by violence to pregnant women?	☐	☐	☐	
10 - Welfare issues	**Yes**	**No**	**n/a**	**Control Measures**
Is there somewhere quiet for pregnant workers to rest or lie down?	☐	☐	☐	
Are new or expectant mothers provided easy access to toilets and allowed sufficient breaks, where needed?	☐	☐	☐	
Is there a clean, private area to express breast milk?	☐	☐	☐	
Is there somewhere safe for them to store expressed milk?	☐	☐	☐	

Comments (please include confirmation regarding new control measures implemented):

ASSESSMENT OF RISKS TO AN EMPLOYEE WHO IS A CHILD OR YOUNG PERSON.

A Young Person is any person under eighteen years of age. A child is any person under the compulsory school leaving age.

You should read Guidance Note 1-12 – Employing Children and Young Persons before reading this section and attempting to complete a Children and Young Person's Risk Assessment.

Legal provisions prohibit the employment of children and young persons from working in certain industries and processes. Where their employment is permitted employers have to take account of the young person's lack of knowledge and experience, their physical limitations and their immaturity which means that they require close supervision.

Before employing a young person whether temporary, permanent, sponsored or on work-experience an employer must complete a risk assessment for the work that they are expected to do. They must identify the hazards and risks, make sure that suitable control measures are in place and specify the training that the young person will need to receive. Remember that the Enforcing Authorities consider young people at work to be vulnerable and that the controls must be sufficiently robust to protect their health and safety and ensure their welfare.

The results of the risk assessments and the control measures should be discussed with and explained to the young workers. In some cases, particularly where a child is being employed the assessment and controls should be discussed with the parents or guardians of the young person – see the Guidance Note. You must always be sure that the person who is to supervise the young person has been involved in or had the results of the assessment explained to them.

Essentially a young person's risk assessment is no different from any other risk assessment. In a young person's risk assessment the assessor needs to consider the needs for extra training and constant supervision on account of their immaturity. However, whilst the risk assessment will be basically the same in terms of the hazards, the required control measures will need to be capable of dealing with the added issues surrounding the immaturity and lack of experience of the young person to whom the assessment relates.

Form CYPIC used in both BusinessSafe Online and hard copy assessments (overleaf) allows you to consider the circumstances of each young person and their intended workplace and intended work activity. You should not allow any young worker to do any work activity until you have considered these elements. If the young person is moved to another department or process a new risk assessment should be made.

In a hard copy system form RA-BSO should be used to complete a formal risk assessment for the work of the young person based on the data in the checklist. Because they contain personal information completed forms should be kept in secure personal files and protected as required by the Data Protection Act; this is an automatic feature of BusinessSafe Online.

CHILDREN AND YOUNG PERSONS INFORMATION CHECKLIST

Form CYPIC

Name of Young Person:		
Task Undertaken:		
Questions to consider:	Tick if Yes √	Comments regarding control measures that must be adopted when the task is undertaken
Is the person a: **Young Person** (under 18) **Child** (under school leaving age)		
The task - does it involve:		
Use of dangerous machinery?		
Use of other machinery?		
Lifting and carrying activities?		
Repetitive handling of articles?		
Hot work (welding etc.)?		
Use of fixed electrical equipment?		
Use of portable electrical equipment?		
Use of air powered or pressure equipment?		
Driving of vehicles?		
Use of flammable substances?		
Use of hazardous substances?		
Exposure to toxic substances?		
Exposure to other dangerous substances?		
Work with animals?		
Work in places where articles may fall?		
Maintenance of equipment?		
Work with display screen equipment or visual display unit?		
Pre-determined work rates?		
Work in high-pressure atmospheres?		
Work where structural collapse is possible?		
Environmental factors - does the work involve:		
Work in hot conditions?		
Work in cold conditions?		
Work in the open air?		
Work in wet conditions?		
Work in confined spaces?		
Working at height?		
Work near open pits, vats, reservoirs or tanks?		
Work in excavated areas?		
Work in noisy conditions?		
Work with ionising or non-ionising radiation?		
Use of personal protective equipment - does the task require the YP to wear PPE:		
Occasionally?		
All the time?		
Individual capability - does the task require:		
Unusual capability?		
Special training (e.g. safety passport, manual handling etc.)?		
Other factors:		
Is there a possibility of hand-arm vibration or full body vibration due to use of equipment?		
Comments:		
Completed by: Position: Date:		

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EXAMPLES OF COMPLETED RISK ASSESSMENTS

The following pages show examples of completed risk assessments produced in BusinessSafe Online. They are included as a guide to the issues that should be considered, what should be included in the documentary record and the identification of additional control measures. Other examples can be found online in the BusinessSafe Online Risk Assessment Library.

When completing your own risk assessments avoid any temptation to copy the example word for word. Some of those in the library require additional details to be added; they may also include entries that do not relate to your business.

To be acceptable to enforcing authorities and others your risk assessments must relate to **your** business, **your** circumstances and the hazards, risks and controls that you have in place.

Example Risk Assessment 1

The ABC Administration Company Ltd **GENERAL RISK ASSESSMENT**

Business Unit 4, Your Town

Title Offices and admin**.**	**Date of Assessment:** 18/10/2016	**Risk Assessor:** S Wright
Risk Assessment Reference. 123	**People Involved in Making This Assessment:** W Jones	
Task/Process Administration, sales and accounts	**People at Risk:** Employees, contractors, visitors.	

Hazard: Manual Handling – Risk of sprains and strains due to lifting boxes of stationery, archive boxes, equipment & water bottles.

Control Measures:

1 Staff trained.

2. High shelves used for light objects

3. Nominated staff change water bottles. See separate Risk Assessment.

Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1. Provide suitable trolley or aid for handling boxes of paper and heavy objects.	C Evans	01/12/2016	Action Due

Hazard: Uneven, wet or slippery floors - risk of injury caused by slips, trips or falls

Control Measures:

1 Staff training.. Work areas kept clear. Floors and stairs in good condition

2. Good housekeeping. Good lighting, including stairways. Cable covers protect trailing cables

Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1. Consider slip resistant flooring in kitchen area when it is next replaced.	S Wright	01/07/2017	Action Due

Hazard: Electrical – Risk of electric shock and burns from faulty electrical equipment.

Control Measures:

1. Installation tested every 5 years by electrical contractor. Equipment maintained, routine testing of portable equipment.

2. No double adapters. Non-essential equipment turned off at night.			
3. Staff trained.			
Hazard: Hazardous substances – risk of chemical burns and ill-health.			
Control Measures:			
1 Staff training			
2. Proprietary cleaning chemicals only. Used as label at low strength. SDSs consulted.			
Hazard: Display Screen Equipment - risk of eye strain and upper limb disorders.			
Control Measures:			
1 DSE training & assessments for all staff. Eye tests provided and arranged where necessary.			
2. DSE users have planned breaks from screen use			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1. Service window blinds so that they can easily be adjusted to reduce glare on computer screens next to windows	W Jones	14/02/2017	Action Due
Hazard: Asbestos – Survey has detected presence of asbestos in the ceiling tiles			
Control Measures:			
1 Tiles in good condition and present no day to day risk. Condition checked regularly and warning signs and labels displayed			
2. Employees trained and instructed.			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1. Implement a system to ensure that visiting contractors who may need to disturb the ceiling tiles are made aware of their asbestos content. As soon as wear and tear becomes apparent replace the tiles with asbestos free.	S Wright	01/01/2017	Action Due

Review date November 2017 **Reviewer** S Wright

Example Risk Assessment 2

The ABC Country Inn Ltd **GENERAL RISK ASSESSMENT**

Business Unit 4, Your Town

Title Pub Cellar	**Date of Assessment:** 10/09/2016	**Risk Assessor:** T Taylor
Risk Assessment Reference. O23	**People Involved in Making This Assessment:** A Bateman	
Task/Process Cellar work and stock storage.	**People at Risk:** Employees, contractors.	

Hazard: Pressure systems – if stored incorrectly gas cylinders, air receivers and beer kegs may explode causing injury.

Control Measures:

1 Only trained and competent staff are authorised to make adjustments and connections.

2. Kegs and casks stored as advised by brewery. Unused gas cylinders stored horizontally, wedged and away from heat. -Cylinders in use chained upright.

Further Control Measures Required:	Assignee	Due Date	Status

Hazard: Uneven, wet or slippery floors - risk of injury caused by slips, trips or falls

Control Measures:

1. Passages and delivery areas kept clear and well maintained (no stairs). –All areas provided with good lighting. –Spillages and breakages cleared up straight away.

2. Good housekeeping. Good lighting, including stairways. Cable covers protect trailing cables

Further Control Measures Required:	Assignee	Due Date	Status
1. Consider slip resistant flooring in kitchen area when it is next replaced.	S Wright	01/03/2017	Action Due

Hazard: Manual handling - risk of musculoskeletal injury from handling heavy items, kegs, crates etc. during deliveries and returns.

Control Measures:

1. Cellar at ground level. -Trolley and sack hoist used to move kegs and crates to and from delivery vehicle. -Draymen do most of the work.

2. Staff trained by brewery to move kegs, crates and heavy items.

Further Control Measures Required:	Assignee	Due Date	Status
1. Arrange manual handling training for staff appointed since training was last given in October 2014.	T Taylor	02/11/2016	Completed

Hazard: Gas equipment. Faulty equipment could lead to explosion or CO poisoning

Control Measures:

1. Boiler checked annually by Gas Safe engineer. -Staff trained to recognise and report faults.

Hazard: Hazardous substances – risk of chemical burns and ill-health

Control Measures:

1. Staff trained and authorised to connect and disconnect CO2 cylinders. Cylinders used and stored upright – chained in place.

2. Data sheets available for all chemical substances in use. -Chemicals are of low hazard and labelled. -Staff trained. -Appropriate PPE provided – eye shields and gloves

Further Control Measures Required:	Assignee	Due Date	Status
1. Provide a suitable gas alarm monitor for cellar area. To go off in the event of a gas leakage. Seek brewery advice.	T Taylor	02/01/2017	Action Due
2. Ask cleaning chemical suppliers if there are suitable safer alternatives to the pipe and general cleaners that we currently use.	T Taylor	02/01/2017	Action Due

Hazard: Asbestos – Survey has detected presence of asbestos in the roof sheets over the storage shed in the rear yard.

Control Measures:

1. The sheets have been painted over in the past, are in good condition and present no day to day risk. Condition checked regularly and warning signs and labels displayed.

Further Control Measures Required:	Assignee	Due Date	Status
1. Implement a system to ensure that visiting contractors who may need to disturb the ceiling tiles are made aware that these roofing sheets asbestos content. Particularly if they are to work in the vicinity of the roof. As soon as wear and tear becomes apparent replace with asbestos free.	S Wright	02/11/2016	Completed

Review date 10 November 2017 **Reviewer** T Taylor

Example Risk Assessment 3

The ABC Garages Ltd **GENERAL RISK ASSESSMENT**

Business Unit 4, Your Town

Title Body shop.	**Date of Assessment:** 04/01/2015 **Risk Assessor:** H Rootes
Risk Assessment Reference. RGO 29	**People Involved in Making This Assessment:** H Morris
Task/Process Vehicle body repairs and finishing	**People at Risk:** Employees, contractors, visitors.

Hazard: Use of flammable substances – Risk of fire and burns.

Control Measures:

See separate hazardous substances and premises fire risk assessments.

Hazard: Noise – risk of hearing loss due to use of noisy hand tools and equipment**.**

Control Measures:

1 Noisy work restricted to rear workshop. Staff trained, ear protection provided.

2. Good housekeeping. Good lighting, including stairways. Cable covers protect trailing cables

Further Control Measures Required:	Assignee	Due Date	Status
1. Make use of ear protection compulsory for all who enter rear workshop. Display warning signs..	H Morris	8/02/2015	Completed
2. Seek advice on hearing checks for panel beaters.	H Rootes	1/03/2015	Completed

Hazard: Electrical – Risk of electric shock and burns from faulty electrical equipment.

Control Measures:

1. System maintained and tested by electrical contractor. RCDs fitted at distribution boards...

2. Low voltage hand lamps used. Portable equipment checked regularly

Further Control Measures Required:	Assignee	Due Date	Status
1. Consider benefits of replacing all 240v hand tools with 110v equipment.	H Rootes	01/09/2015	Completed

Hazard: Vibration – risk of occupational ill-health from exposure to vibrating tools.

Control Measures:

1 Staff training			
2. Proprietary cleaning chemicals only. Used as label at low strength. SDSs consulted.			
Hazard: Airbags - risk of injury when working with and repairing air bags.			
Control Measures:			
1. Staff training, secure storage of old and new units. Warning signs displayed in work area..			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1. Make sure all staff including new starters are aware of procedures. Put up warning sign in rest room.	H Rootes	11/02/2015	Completed
3. Arrange to replace older tools with new tools that have vibration damping and vibration reduction measures built-in. All to have been replaced over the next 2 years.	H Morris	15/04/2016	Completed
Hazard: Poor housekeeping – risk of injury as a result of slips, trips and falls.			
Control Measures:			
1. Good house-keeping in place, for business efficiency and quality. See it shift it policy.			
Hazard: Mechanical – risk of injury from the use of powered machinery and equipment.			
Control Measures:			
Considered in a separate risk assessment.			
Hazard: Vehicle movements – risk of injury by being struck by a vehicle being moved or moving whilst under repair**.**			
Control Measures:			
1 Parked vehicles braked and chocked. Vehicles driven slowly in and out of workshop.			
Hazard: Working at height – risk of injury from falling from mezzanine storage area and from steps and ladders during vehicle repairs.			
Control Measures:			
1. Handrails at edge of mezzanine storage area and access stairway.			
2. Workers trained to use steps and ladders safely.			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1 Consider in filling handrails to prevent anything falling over the edge of the mezzanine floor.	H Morris	14/06/2015	Completed

2. Over the next 18 months replace step ups and step ladders with working platforms suited to our work	H Rootes	01/06/2016	Completed

Review completed date	04/01/2016	**Reviewer**	H Rootes
Review due date	04/01/2017	**Reviewer**	H Morris

Example Risk Assessment 4

The ABC Printing Company Ltd **GENERAL RISK ASSESSMENT**

Business Unit 4, Your Town

Title Use of off-set litho printing press.	**Date of Assessment:** 18/10/2016	**Risk Assessor:** J Timpson
Risk. Assessment Reference PS 14.	**People Involved in Making This Assessment**: A Roland	
Task/Process Printing	**People at Risk:** Employees, contractors, visitors.	

Hazard: Mechanical - -Hand and arm injuries from in-running nips between inking and damping rollers, between plate, blanket and impression cylinders, and between impression and transfer cylinders. -Injury from un-expected start-up during multi-manning.
Control Measures:
1 Interlocked guards fitted by manufacturer. Trained and skilled operators who carry out daily safety device and guard checks (not recorded).
2. Slow running with guards open cannot be enabled unless nip bars are properly located.
3. Audible warning of start-up. Emergency stop buttons fitted.
4. All operators fully trained and competent – records held.
5. Machine maintained by supplier – records available. Weekly operator safety checklist used and records kept.
Hazard: Hazardous substances - skin disorders from contact with and ill-health from inhalation of fume from printing inks and solvents
Control Measures:
1 Trained operators.
2. SDS used to develop controls and safe systems of work- see also hazardous substances risk assessments
3. Safety containers used for solvents and wipers
4. -Barrier creams and hand cleaners provided

Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1. Speak to suppliers to identify any solvent based inks or cleaners that could be replaced with solvent free or less hazardous products and check that customers are content with the change.	J Spratt	20/04/2017	Action Due

Hazard: Electrical – Risk of electric shock and burns from faulty electrical equipment.			
Control Measures:			
1 Machine installed by competent electrical contractor working for supplier. Machine and electrical components maintained.			
2. Electrical equipment in hazardous zone where solvents and solvent based inks are used is Ex certified.			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1. Check that Ex hand lamps are available and used when working near to solvent based ink and cleaners.	R Herring	14/11/2016	Overdue
Hazard: Uneven, wet or slippery floors – risk of slips, trips and falls from machine platforms, on spillages, from articles left on floor.			
Control Measures:			
1 Instructions issued relating to regular floor cleaning and keeping gangways and work areas free from hazard. -Waste bins provided. Daily cleaning regime.			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1. Check that recent starters have received adequate training	A Roland	14/12/2016	Completed
Hazard: Manual handling – movement of paper stocks and printed goods (back strain and WRULD).			
Control Measures:			
1 Trolley, fork lift and mechanical aids provided for moving loads. Staff have received on-site training –records available.			
2. Fork lift truck drivers trained on-site and appointed.			
Further Control Measures Required:	**Assignee**	**Due Date**	**Status**
1. Make sure that line managers and supervisors understand their responsibilities for oversight and enforcement of control measures.	J Timson	14/11/2016	Completed

Review date 01/12/2017 **Reviewer** S Wright

Big Brand Safety Data Sheet

BIG BRAND BRUSH CLEANER 444
(Issue 3 – November 2015)

SECTION 1 IDENTIFICATION OF SUBSTANCE/PREPARATION & COMPANY

1.1 Product Identifier

Product/Material	**BRUSH CLEANER 444**
REACH Registration Name	Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%).
REACH registration No	01-2119458049-33
Pure Substance/mixture	Substance

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	A highly refined solvent suitable for general degreasing purposes, brush cleaning and paint thinning. Manufacture of substance, distribution of substance, Formulation & (re)packing of substances and mixtures, Uses in Coatings, Use in Cleaning Agents, Lubricant, Metalworking fluid, Use as a fuel, Lamp oil, Barbecue lighter, Functional Fluids, Road and construction applications, Laboratory activities, Rubber production and processing, Water treatment chemical, Polymer processing.

1.3 Details of the supplier of the safety data sheet

Supplier:	Big Brand Company
Address:	Solvent House ANYTOWN PC1 2XX
Telephone:	0171 xxx 1xxx
Fax:	0171 xxx 2xxx
Emergency Number:	0911 xxx xxx5
E-mail Address:	sales@bigbrandchems.com

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008
For the full text of the H-Statements mentioned in this Section, see Section 2.2.

Classification
Flammable liquids - Category 3 – (H226)
Aspiration toxicity - Category 1 – (H304)
Specific target organ systemic toxicity (single exposure) - Category 3 – (H336)
Specific target organ toxicity - repeated exposure - Category 1 - (H372)
Chronic aquatic toxicity - Category 2 – (H411)

DIRECTIVE 67/548/EEC or 1999/45/EC
For the full text of the R-phrases mentioned in this Section, see Section 16

Symbol(s)
Xn - Harmful
N - Dangerous for the environment

Classification
R10 – Xn ; 48/20 –Xn ; R65 - R66 - R67 - N; R51-53

2.2. Label elements
Labelled according to: REGULATION (EC) No 1272/2008

Contains Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)
EC-No 919-446-0
Hazard pictograms

Signal Word
DANGER

Hazard Statements
H226 - Flammable liquid and vapour
H304 - May be fatal if swallowed and enters airways
H336 - May cause drowsiness or dizziness
H372 - Causes damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P260 - Do not breathe dust/ fume/ gas/ mist/ vapours/ spray
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting
P273 - Avoid release to the environment

Supplemental Hazard Statements
EUH066 - Repeated exposure may cause skin dryness or cracking

2.3. Other hazards

Physical-Chemical Properties	Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread near ground level to sources of ignition.
Properties Affecting Health	Vapours inhaled in strong concentration have a narcotic effect on the central nervous system.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Chemical nature	A complex and variable combination of paraffinic, cyclic and aromatic hydrocarbons having a carbon number range predominantly of C9 to C12 and boiling in the range of approximately 135°C to 220°C. The aromatic content is between 2% and 25%.

Chemical Name	EC-No	REACH Registration No:	CASNo	Weight %	Classification (Dir. 67/548)	GHS Classification
Hydrocarbons, C9-C12, n-alkanes, cyclics, aromatics (2-25%)	**919-446-0**	**01/2119458049-33**	**^**	**100**	**R10; Xn;R65 R66, R67 Xn;R48/20 N;R51-53**	**Flam. Liquid 3 (H226) Asp. Tox. 1 (H304) STOT SE 3 (H336) STOT RE 1 (H372) Aquatic Chronic 2 (H411)**

Additional information	The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this MSDS Total aromatic content: 15-20 %. Contains

Chemical Name	EC-No	REACH Registration No:	CASNo	Weight %	Classification (Dir. 67/548)	GHS Classification
Xylenes (mixed isomers o, m, p)	215-535-7	01-2119488216-32	1330-20-7	100 0-3	R10 Xn;R20/21-65 Xi;R36/37/38	Flam. Liq. 3 (H226) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335)
1,3,5-Trimethylbenzene	203-604-4	01-2119463878-19	180-67-8	0-1	R10 Xi;R37 N;R51-53	Flam. Liq. 3 (H226) STOT SE 3 (H335) Aquatic Chronic 2 (H411)
Ethyl benzene	202-849-4	01-2119489370-35	100-41-4	0-1	F;R11 Xn;R20-65-48/20 Xi;R36/37/38	Flam. Liq. 2 (H225) Acute Tox. 4 (H332) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335) STOT RE 2 (H373)

For the full text of the R-phrases mentioned in this Section, see Section 16
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first-aid measures

General advice — IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.

Eye contact — Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing.

Skin contact — Remove contaminated clothing and shoes. Wash off with soap and water.

Inhalation — In case of exposure to intense concentrations of vapours, fumes or spray, transport the person away from the contaminated zone, keep warm and allow to rest.

Ingestion — If swallowed, do not induce vomiting - seek medical advice. Risk of product entering the lungs on vomiting after ingestion. In this case, the casualty should be sent immediately to hospital.

Protection of First-Aiders — Use personal protective equipment.

4.2. Most important symptoms and effects, both acute and delayed

Eye contact — Burning feeling and temporary redness.

Skin contact — Prolonged or repeated contact may dry skin and cause irritation.

Inhalation — Vapours inhaled in strong concentration have a narcotic effect on the central nervous system. Irritation of the respiratory tract due to excess fume, Causes headache, drowsiness or other effects to the central nervous system, loss of consciousness.

Ingestion — If swallowed accidentally, the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious pulmonary lesions (medical survey during 48 hours). Nausea, Vomiting, Abdominal pain.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician — Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media — Foam. Dry powder. Carbon dioxide (CO2). Water spray.

Unsuitable Extinguishing Media — Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Special Hazard	Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled in confined spaces or at high concentration.

5.3. Advise for Fire-fighters

Special protective equipment for fire-fighters	In case of a large fire or in confined or poorly ventilated spaces, wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Other information	Cool containers/tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

General Information	Use personal protective equipment. Evacuate non-essential personnel. Ensure adequate ventilation, especially in confined areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material.

6.2. Environmental precautions

General Information	Prevent further leakage or spillage if safe to do so. Dyke to collect large liquid spills. The product should not be allowed to enter drains, water courses or the soil. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up	Use non-sparking hand tools and explosion proof electrical equipment. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Following product recovery, flush area with water.

6.4. Reference to other sections

Personal Protective Equipment	See Section 8 for more detail
Waste treatment	See section 13
Other information	Remove all sources of ignition. Stop all work that requires a naked flame, stop all vehicles, stop all machines and equipment that may cause sparks or flames.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling	For personal protection see section 8. Use only in well-ventilated areas. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing.
Technical measures	Ensure adequate ventilation. Do not spray at high pressure (> 3 bar). While moving the product to avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Do not allow splash loading and ensure that the product is poured slowly, particularly at the beginning of the operation.
Prevention of fire and explosion	Operate only on cold and degassed tanks in Ventilated premises (to avoid risk of Explosion).

Handle away from any source of ignition (open flame and sparks) and heat (hot manifolds or casings). Do not smoke. Use explosion proof electrical equipment. Take precautionary measures against static discharges. Do not use compressed air for filling, discharging or handling.

Design installations (machinery and equipment) to prevent burning product from spreading (tanks, retention systems, interceptors (traps) in drainage systems).

Hygiene measures

Ensure the application of strict rules of hygiene by the personnel exposed to the risk of contact with the product. When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended. Do not dry hands with rags that have been contaminated with product. Do not use abrasives, solvents or fuels. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures/Storage Conditions:

Design the installations in order to avoid accidental emissions of product (due to seal breakage, for example) onto hot casings or electrical contacts. Storage installations should be designed with adequate bunds so as to prevent ground or water pollution in case of leaks or spills. Use explosion proof electrical equipment. Keep in a bunded area. Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Ground/bond containers, tanks and transfer/receiving equipment. Store at room temperature. Keep containers tightly closed and properly labelled.

Materials to Avoid

Strong acids. Oxidizing agents.

Packaging material

Keep only in the original container or in a suitable container for this kind of product. steel. Stainless steel.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits Components with workplace

Chemical Name	European Union	The United Kingdom	Ireland
Xylenes (o,m,p mixed isomers) 1330-20-7	TWA 50 ppm TWA 221 mg/m3 STEL 100 ppm STEL 442 mg/m3 S*	STEL 100 ppm STEL 441 mg/m3 TWA 50 ppm TWA 220 mg/m3 Skin	TWA 50 ppm TWA 221 mg/m3 STEL 100 ppm STEL 442 mg/m3 Skin
benzene 100-41-4	TWA 100 ppm TWA 442 mg/m3 STEL 200 ppm STEL 884 mg/m3 S*	STEL 125 ppm STEL 552 mg/m3 TWA 100 ppm TWA 441 mg/m3 Skin	TWA 100 ppm TWA 442 mg/m3 STEL 200 ppm STEL 884 mg/m3 Skin
1,3,5-Trimethlbenzene 108-67-8	TWA 20 ppm TWA 100 mg/m3		TWA 20 ppm TWA 100 mg/m3

Legend See section 16

Advisory OEL CEFIC-HSPA : 350 mg/m3

Chemical Name	European Union	The United Kingdom	Ireland
Xylenes (o ,m,p- mixed isomers) 1330-20-7		650	We are not aware of any national exposure limit

DNEL Worker (Industrial/Professional)

Chemical Name	Short term, systemic effects	Short term local effects	Long term, systemic effects	Long term local effects

Hydrocarbons, C9-C12 n-alkanes, isoalkanes, cyclics, aromatics (2-25%) ^			44 mg/kg bw/day (dermal) 330 mg/m3/8h (inhalation)	

DNEL General population

Chemical Name	Short term, systemic effects	Short term local effects	Long term, systemic effects	Long term local effects
Hydrocarbons, C9-C12 n-alkanes, isoalkanes, cyclics,, aromatics (2-25%) ^			26 mg/kg bw/day (dermal) 71 mg/m3/24h (inhalation) 26 mg/kg bw/day (oral)	

Exposure controls

Occupational Exposure Controls

Engineering Measures — When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment. Apply technical measures to comply with the occupational exposure limits.

Personal Protective Equipment

General Information — Protective engineering solutions should be implemented and in use before personal protective equipment is considered. These recommendations apply to the product as supplied. If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

Respiratory protection — In the case of vapour formation use a respirator with filter model Type A. In case of vapours and aerosol formation:. Respirator with combination filter for vapour/particulate, Type A/P2. Warning! Filters have a limited use duration.

Eye Protection — If splashes are likely to occur, wear: Safety glasses with side-shields.

Skin and body protection — Wear suitable protective clothing. Protective shoes or boots.

Hand Protection — Hydrocarbon-proof gloves for aromatic hydrocarbons. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

Repeated or prolonged exposure

Glove Material	Thickness	Break through time	Remarks
Nitrile rubber	>0.55mm	> 480 min	EN 374
PVA		> 480 min	EN 374
Fluorinated rubber Viton (R)	(*)	> 480 min	EN 374 (*)all layer thickness

In case of contact through splashing

Glove Material	Thickness	Break through time	Remarks
Neoprene	>0.75mm	>60min	EN 374

Nitrile rubber	>0.38mm	>60min	EN 374

Environmental exposure controls

General Information Do not allow material to contaminate ground water system

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

9.1. Information on basic physical and chemical properties

Colour		Colourless	
Physical State @20°C		Liquid	
Odour		Characteristic	
Property	Values	Remarks	Method
pH		Not applicable	
Melting point/range	-76 °F	Not applicable	
Boiling point/boiling range	158 -191 °C		ISO 3405
	316 -376 °F		ISO 3405
Flash point	>= 40 °C		ISO 13736
	>= 104 °F		ISO 13736.
Evaporation rate	57	EtEt=1	DIN 53170
Flammability Limits in Air			
Upper	7 %		
Lower	0.7 %		
Vapour Pressure	1.9 hPa	@ 20 °C	
Vapour density		No information available	
Density	785 kg/m3	@ 15 °C	ISO 12185
Water solubility	.	Substance is a UVCB. Standard tests for this. endpoint are not appropriate	
Solubility in other solvents		Soluble in many common organic solvents	
logPow		Not applicable	
Autoignition temperature	> 230 °C		ASTM E 659-78
	> 446 °F		ASTM E 659-78
Viscosity, kinematic	0.95 mm2/s	@ 40 °C	ASTM D 445
Explosive properties	Not considered explosive based on chemical structure and oxygen balance considerations		
Oxidizing Properties	This product is not considered oxidising based on chemical structure considerations.		
Possibility of hazardous reactions	Not applicable		

9.2. Other information

Surface tension	0.0245 N/m	@ 25 °C	EN 14370
Pour point	< -60 °C		

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity None under normal processing.

10.2. Chemical stability

Stability Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous Reactions None under normal processing.

10.4. Conditions to Avoid

Conditions to Avoid	Heat, flames and sparks. Take precautionary measures against static discharges.

10.5. Incompatible Materials

Materials to Avoid Strong acids.	Oxidizing agents.

10.6. Hazardous Decomposition Products

Hazardous Decomposition Products	Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity Local effects, Product Information

Skin contact	Prolonged or repeated contact may dry skin and cause irritation.
Eye contact	This substance does not meet the EU criteria for classification. Burning feeling and temporary redness.
Inhalation	This substance does not meet the EU criteria for classification. Vapours inhaled in strong concentration have a narcotic effect on the central nervous system. Irritation of the respiratory tract due to excess fume, Causes headache, drowsiness or other effects to the central nervous system, loss of consciousness.
Ingestion	Symptoms :. Nausea, Vomiting, Abdominal pain. If swallowed accidentally, the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious inhalation pulmonary lesions (medical survey during 48 hours).

Acute toxicity Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrocarbon, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	LD50 > 15000 mg/kg bw (rat – OECD 401)	LD50 (24h) > 3400 mg/kg bw (rat)	LC50 (4h) > 13100mg/m3 (vapour) (rat – OECD 403)

Sensitization

Sensitization	Not classified as a sensitizer.

Specific Effects

Carcinogenicity	This product is not classified carcinogenic.
Mutagenicity	The mutagenic potential of the substance has been extensively studied in a range of in-vivo and in-vitro assays.
Germ Cell Mutagenicity	Genetic toxicity: negative.
Reproductive toxicity	No information available.
Developmental Toxicity	Results of guideline developmental toxicity studies on the substance and OECD developmental toxicity screening studies showed no evidence of developmental toxicity in rats.

Repeated Dose Toxicity

Subchronic toxicity	No information available.
Target Organ Effects (STOT)	
Target Organ Effects (STOT)	Central nervous system.
Specific target organ systemic toxicity (single exposure)	Vapours may cause drowsiness and dizziness.
Specific target organ systemic	Causes damage to organs through prolonged or repeated exposure.

toxicity (repeated exposure)

Aspiration toxicity	The fluid can enter the lungs and cause damage (chemical pneumonitis, potentially fatal).

Other information

Other adverse effects	Frequent or prolonged skin contact destroys the lipoacid cutaneous layer and may cause dermatitis.
Precautionary Statements	Dispose of contents/container to an approved waste disposal plant.

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Acute aquatic toxicity Product Information

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
Hydrocarbons, C9-C12, nalkanes, isoalkanes,cyclics, aromatics (2-25%) ^	ErL50 (72h) = 4.1 mg/l (Pseudikirchneriella subcapitata – OECD 201) ErL50 (72h) = 4.6-10mg/l (Pseudokirchneriella subcapitata – OECD 201) NOELR (72h) =0.76 mg/l (Pseudokirchneriella subcapitata – growth rate- OECD 201) NOELR (72h) = 0.22 mg/l (Pseudokirchneriella subcapitata - biomass – OECD 201)	EL50 (48h) = 10-22 mg/l (Daphnia magna – OECD 202)	LL50 (96h) =10-30mg/l (Oncorhynchus mykiss – OECD 203)	

Chronic aquatic toxicity Product Information -Not applicable.

Chronic Aquatic toxicity- Component Information

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
Hydrocarbons, C9-C12, nalkanes, isoalkanes,cyclics, aromatics (2-25%) ^		NOELR (21d) = 0.28 mg/l (daphnia magna – OCDE 211)	NOELR (28d) = 0.13 mg/l (oncorhynchus mykiss QSAR Petrotox	

Effects on terrestrial organisms

No information available.

12.2. Persistence and degradability

General Information — Readily biodegradable (75% after 28 days).

Biodegradation						
Type:	**Method**	**Sampling time**	**Specific effects**	**Values**	**Unit**	**Biodegradability**
	OECD 301F	28 DAYS		75	%	Readily biodegradable

12.3. Bioaccumulative potential

Product Information	Measured experimental data on hydrocarbon UVCB substances are not meaningful, since each of the constituents is likely to behave differently.
logPow Component Information	Not applicable

12.4. Mobility in Soil

Soil	Substance is a UVCB. Standard tests for this endpoint are not appropriate.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment	This substance is considered not to be PBT and vPvB.

12.6. Other adverse effects

General Information No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products	Dispose of in accordance with the European Directives on waste and hazardous waste.
Contaminated packaging	Empty containers may contain flammable or explosive vapours. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EWC Waste Disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: TRANSPORT INFORMATION

ADR/RID

UN/ID No	UN 1300
Proper shipping name	TURPENTINE SUBSTITUTE
Hazard class	3
Packing Group	III
ADR/RID-Labels	3
Environmental hazard	Yes
Classification Code	F1
Tunnel Restriction Code	(D/E)
ADR Hazard Id (Kemmler No.)	30
Description	UN 1300, TURPENTINE SUBSTITUTE, 3, PG III, (D/E)
Excepted Quantity	E1
Limited quantity	5L

IMDG/IMO

UN/ID No	UN 1300
Proper shipping name	Turpentine substitute
Hazard class	3
Packing Group	III
Marine Pollutant	P
EmS No.	F-E, S-E
Description	UN 1300, TURPENTINE SUBSTITUTE, 3, PG III, (40°C c.c.)
Excepted Quantity	E1
Limited quantity	5 L
Proper shipping name	UN 1300, TURPENTINE SUBSTITUTE, 3, PG III, (40°C c.c.). MARINE POLLUTANT

ICAO/IATA

UN/ID No	UN 1300
Proper shipping name	Turpentine substitute
Hazard class	3
Packing Group	III
ERG Code	3L
Special Provisions	A3
Description	UN 1300, TURPENTINE SUBSTITUTE, 3, PG III
Excepted Quantity	E1
Limited quantity	10 L

ADN

UN/ID No	UN 1300
Proper shipping name	Turpentine substitute
Hazard class	3

Hazard Labels	3
Packing Group	III
Environmental hazard	Yes
Classification Code	F1
Description	UN 1300, TURPENTINE SUBSTITUTE, 3, PG III
Excepted Quantity	E1
Limited quantity	5 L
Ventilation	VE01

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or Mixture

European Union

REACH

The EC substance definition is included in the CAS related number description for global inventory entries

Other regulations

Directive 1999/13/EC on the limitation of emissions of volatile organic compounds
Directive 2004/42/EC on the limitation of emissions of volatile organic compounds
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Related CAS 64742-82-1

International Inventories

The substance is listed or exempted from listing in the following inventories:
Europe (EINECS/ELINCS/NLP)
U.S.A. (TSCA)
Canada (DSL/NDSL)
Australia (AICS)
Korea (KECL)
China (IECSC)
Japan (ENCS)
Philippines (PICCS)
New Zealand (NZIoC)

15.2. Chemical Safety Assessment

Chemical Safety Assessment A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER HEALTH AND SAFETY INFORMATION

Full text of R-phrases referred to under sections 2 and 3

R10- Flammable
R11 - Highly flammable
R36 - Irritating to eyes
R37 - Irritating to respiratory system
R38 - Irritating to skin
R65 - Harmful: may cause lung damage if swallowed
R66 - Repeated exposure may cause skin dryness or cracking
R67 - Vapours may cause drowsiness and dizziness
R20/21 - Harmful by inhalation and in contact with skin
R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of H-Statements referred to under section 2 and 3

H226 - Flammable liquid and vapour
H304 - May be fatal if swallowed and enters airways
H336 - May cause drowsiness or dizziness
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H411 - Toxic to aquatic life with long lasting effects

EUH066 - Repeated exposure may cause skin dryness or cracking

Abbreviations, acronyms
bw = body weight
bw/day = body weight/day

Legend Section 8
+ Sensitizer
** Hazard Designation
M: Mutagen
* Skin designation
C: Carcinogen
R: Toxic to reproduction

This safety data sheet serves to complete but not to replace the technical product sheets. The information contained herein is given in good faith and is accurate to the best of knowledge at the date indicated above. It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk. The information given herein in no way dispenses the user from knowing and applying all provisions regulating his activity. The user bears sole liability for the precautions required when using the product. The regulatory texts indicated herein are intended to aid the user to fulfil his obligations. This list is not to be considered complete and exhaustive. It is the user's responsibility to ensure that he is subject to no other obligations than those mentioned.

This safety data sheet complies with the requirements of Regulation (EC) No 1907/2006