Premier Proteins Safety Statement

Premier Proteins (2000) Ltd.
Poolboy,
Ballinasloe,
Co. Galway.

Safety Statement

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Section 1

1 Introduction

1.1 Safety Policy

It is the policy of Premier Proteins Ltd. to ensure, so far as is reasonably practicable, the safety health and welfare at work of all it's employees.

The matters to which this policy extends include:-

- The design, provision and maintenance, so far as is reasonably practicable, of a safe place of work
- Carry out risk assessments and review them when necessary.
- The design, provision and maintenance, so far as is reasonable practicable, of safe access to and egress from, the place of work.
- The design, provision and maintenance of plant and machinery that are safe so far as reasonably practicable.
- The provision of systems of work that are planned, organised, performed and maintained so as to be safe, so far as is reasonably practicable.
- The provision of such information, instruction, training and supervision is necessary to ensure safety at work, so far is as reasonably practicable.
- The provision of maintenance of personal protective equipment to ensure safety at work where it is not reasonably practicable to control or eliminate hazards or in prescribed circumstances.
- The preparation and revision, as necessary, of plans to be followed in emergencies.
- To ensure, so far as is reasonably practicable, safety and the prevention of risk to health at work in connection with the use of any article or substance.
- The provision and maintenance of welfare facilities.
- The obtaining where necessary, of the services of a competent person for the purpose of ensuring safety at work, so far is reasonably practicable.

The duties of employees are to:
1.Take reasonable care of their own safety and health, and that of others who may be affected by their acts or omissions at work.
2.Co-operate with others in the company to fulfil our statutory duties.
3.Not interfere with, misuse or wilfully damage, anything provided in the interest of safety and health.

To ensure that this policy is effective, we will:
1.Review it annually, or on significant changes in our business.
2.Make any such changes known to employees.
3.Maintain procedures for communication and consultation between all levels of staff on matters of safety health, and welfare.

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Signed _____ Dated _____
Rendering Director

1.2 Administration

The safety statement will be available to all staff and in particular the safety representative(s). A copy of the safety statement will be kept in the canteen, the general office and in the Safety co-ordinators office.

1.3 General Duties

Premier Proteins Ltd. commits itself to ensuring that the place of work, access to the egress from it are as safe as is reasonable practicable. In considering safety at the place of work the following issues will be addressed:-

1.3.1 CONDITION OF PLACE OF WORK

Every place at which any person has at any time to work will be kept in a safe condition and safe means of access to and egress from every such place will be provides. This will include floors, walkways, stairs, ladders, platforms, confined spaces, transport, emergency exits. The Workplace Regulations and associated codes of practice will be the standard used by the company.

1.3.2 LIGHTING, HEATING, VENTILATION AND WELFARE FACILITIES

These will be provided to the standard laid down in current legislation and codes of practice.

1.3.3 NOISE

Noise will be reduced to the greatest extent reasonably practicable. In this regard Premier Proteins Ltd. will abide by the terms of the Noise Regulations 1990. A Noise Survey will be carried out in compliance with the Regulations.

1.3.4 DUST AND FUMES

These will be extracted by extraction systems where reasonably practicable so that occupational exposure limits will not be exceeded.

1.3.5 STORAGE

Chemicals will be stored according to the terms of the Code of Practice and Material Safety Data Sheets (MSDS). A Central storage facility will be provided. Tight controls will be exercised in the whole area of chemical storage and use. A separate storage facility will be provided for flammable bottled gas.

1.3.6 HOUSEKEEPING

Too many accidents occur because of slips, trips, falls and collisions. The company recognizes the problem caused by poor housekeeping and will organize audits and campaigns to highlight the problem and too help keep workplaces tidy and safe for people to work.

1.3.7 FIRE

All places of work are designed to comply with current fire legislation. Means of escape are provided from all areas. Adequate and suitable fire fighting equipment will be provided. Fire drills and training of workers will be carried out at regular intervals.

1.4 Personal Protective Equipment

In circumstances in which it is not reasonably practicable to eliminate or control the hazards in the workplace Premier Proteins Ltd. will provide and maintain such suitable protective clothing or equipment as appropriate to ensure the safety, health and welfare of workers.

The type of personal protection depends on the hazards to which the worker is exposed. The Company keeps abreast of new information on hazards which require personal protection and only purchase equipment to the highest standard. All equipment bought by the Company for use by workers is manufactured to European codes of practice.

The identification of the correct personal protective equipment for any specific application is the responsibility of the management of the operation who will liaise with the safety co-ordinator. The Company will abide by the terms of the Personal Protective Equipment Regulations (Part V of the Safety, Health and Welfare at work (General Applications) 1993. (SHAWAWR)

First line supervision is responsible for ensuring that the worker has the training to complete safely a task that requires personal protection and also to ensure that the equipment is worn.

Premier Proteins is committed to training and re-training workers in the use of Personal Protective Equipment. The Company is equally committed to ensuring that the equipment is worn at all times.

1.5 PEOPLE

Premier Proteins Ltd. is committed to provide information, instruction, training and supervision as is necessary to ensure safety at work so far as is reasonably practicable. Training may by considered as the creation of a learning situation within attitudes, knowledge and skills to change behaviour are acquired. All training is based on an analysis of the task to be completed and safety training will be based on the hazards of the particular task.

All Premier Proteins Ltd.' employees will receive training in safety procedures. This will continue to be developed as part of an ongoing programme whereby employees will be trained in all the hazards in their workplace and the precautions to be taken at each stage to ensure safety. This training programme will also include management and supervisory training.

Training for safety involves:-

1 Introduction Training
2 Job Safety Training
   - Manual Handling
   - Chemical Handling
   - Personal Protection
   - Emergency Response
   - Fire evacuation
   - Fire Fighting
   - First Aid
   - Mechanical/Electrical
   - Housekeeping/Place of work.
3 Refresher training for relapse prevention.

The Company recognises that the most important link in the safety chain is first line supervision and special attention will be paid to ensuring that supervisors understand and are committed to the principles of safety.

All training and safety carried out by the Company will take account of the guidelines in Occupational Health and Safety Training issued by the health and Safety authority.

1.6 CONSULTATION PROCESS

It is the policy of Premier Proteins Ltd. to consult the employees for the purpose of the making and maintenance of arrangements to enable the Company and the employees to co-operate effectively in promoting and developing measures to ensure their safety, health and welfare at work and in ascertaining the effectiveness of such measures.

The company recognises the employee's right to appoint a representative to represent them in consultations in safety with the company.

The Company will co-operate with the Safety Representative:-

- In providing information necessary for safety.
- In advising the representative when an inspector is touring the place of work.
- In facilitating the representative in the discharge of his functions.
- In allowing time off for training.

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1.7 EMPLOYEE CO-OPERATION

An essential ingredient in Premier Proteins Ltd.' Safety Policy is the commitment of it's employees to the principles of safety outlined in this Statement.
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This commitment when translated into action means that each employee will:-

1. Take reasonable care of his/her own safety and the safety of anyone affected by his/her own actions.

2. Co-operate with the Company so that the company will comply with legislation on safety.

3. Use all the personal protective equipment provided by the company in such a manner as to provide the protection intended.

4. Report any defects in place, plant procedure that might endanger safety.

5. Not misuse anything provided for securing safety.

In addition to the above Premier Proteins Ltd. encourages employees to :-

1. Support the safety Consultation Process.

2. Take a full and active part in all training programmes for safety which the Company organises.

3. Actively participate in fire safety including drills and fire fighting training.

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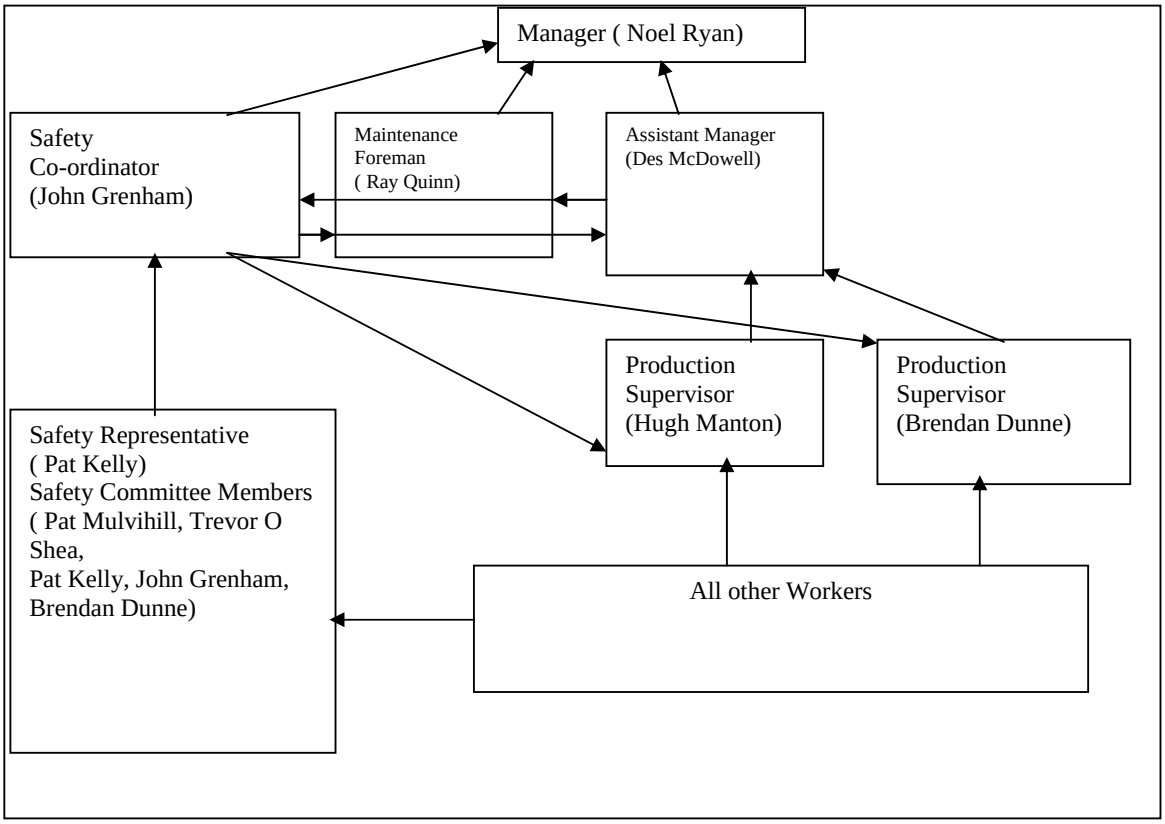
For Premier Proteins Safety policy to be successful and for the avoidance of accidents it is essential that the employees co-operate as requested.

1.8 ASSIGNMENT OF RESPONSIBILITIES

The Managing Director and the Plant Manager is ultimately responsible for the safety, health and welfare of all employees under the Safety, Health and Welfare at work act. This responsibility is delegated to supervisory staff for safety in their own areas.

Organisation chart showing the lines of communication within the company.



The main area with potential for accidents is the production area. The production manager is responsible to ensuring,

- That all fixed guards on machines are in place.
- That all interlock systems are functioning satisfactorily.
- That access to and egress from all areas where people have to work are within the standards laid down in law and codes of practice.
- That all specified personal protection is worn.
- That all workers are trained to carry out required tasks (or if trainee status, under immediate supervision).
- That workers follow the correct procedures.

The Plant Manager is responsible for procuring the resources necessary for implementing the Safety Programme.

The maintenance Manager is also responsible for ensuring that all pressure vessels and lifting gear (fork lifts and cranes, gantries and lifting machines) are examined by the Insurance Company's Engineer within the periods laid down by the safety in Industry acts, '55 and '80. He is also responsible for keeping the records required by the legislation.

1.9 ACCIDENTS

All accidents are investigated as practicable after the accident and a report filled out as per Accident Investigation Procedure (see safety procedures section)

The Company recognises the right of the safety Representative to investigate accidents and will co-operate in all reasonably practicable ways to facilitate the Safety Representative.

Each accident will be looked at critically by the company from the point of each view of place, plant, procedures and people, to see if there are weaknesses in the Safety programme and to tighten controls where necessary.

The company will comply with it's statutory obligations under the Safety Health and Welfare at Work act to report all reportable accidents to the Health and Safety Authority on form I.R.I. and to enter them into the General Register. The Accidents book will be kept by the Plant Manager.

1.10FIRE & FIRST AID EMERGENCIES

The Company recognises the need for constant vigilance with regard to the risks posed by fire. There are flammable materials, such as Flammable gases, cardboard, oils, in use throughout the premises and effective management policy is essential to ensure the situation is under control at all times.

The amount and type of fire extinguishers in the factory are based on I.S.291 – use, sitting and maintenance of Portable fire extinguishers, and B.S. 5306 part 3 – Fire extinguishing Installations and Equipment on premises. These extinguishers are checked regularly by competent persons.

Fire drills will be organized annually. Assembly points will be marked. Fire doors and escape routes will be kept unobstructed and clearly marked. A copy of the fire plan will be included as an appendix to the safety statement.

Due to the small numbers employed in company and the shift nature of the activity and companies policy on first aid is to use the local Accident and emergency. Minor cuts and scraps may be treated on site but any other injury is to be treated at Accident and Emergency. **All injuries must be reported to supervisors.**

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Signed: _____ Date: _____

1.11 Occupational Health & Hygiene Co-ordinator

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1.12Emergency Preparedness Coordinator

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1.13SAFETY AUDITS

The safety co-ordinator will organise Safety Audits from time to time in conjunction with the production and/or maintenance supervisors. These audits will consist of a check on :-

- Housekeeping, including floors, walkways, stairs.
- Safe place of work above ground level.
- Machinery guarding
- Correct procedures
- Fire exits and equipment.
- Suitability of personal protective equipment
- Hand tools
- Electric's, including the test of R.C.D.s (E.L.C.B.s).
- Storage of gases and chemicals.
- Control of contractors.
- Any accidents in the area since the previous audit.
- Any other hazards
- Action taken on improvements recommended since the previous audit.

1.14 SAFETY RULES FOR CONTRACTORS

Contractors work in Premier Proteins Ltd.' premises for occasional work, such as building (including maintenance), specialist repairs, e.g. air, lifting gear, machine installation. These contractors must comply with the following arrangements:-

- Not to put risk any Premier Proteins Ltd.'s employee.
- Produce their own Safety Statement to Premier Proteins Ltd. on demand.
- Carry appropriate insurance cover
- Work through the liaison person assigned by Premier Proteins Ltd..
- Take all safety precautions with systems of work, equipment, personal protection etc.
- Report any accidents or dangerous occurrences to the liaison person.
- Cordon off the boundaries of the contractors operation, where possible ,and mark them with warning signs.
- Provide any emergency safety equipment which may be required for the contractor's operation.
- Follow strictly the terms of any permit to work system force at the time of contract.
- Not to borrow any Premier Proteins Ltd.'s equipment without express written permission from the Maintenance or Production Manager.

For its part the company will abide by section 8(2) of the safety health and welfare at work with regard to the obligations imposed on it concerning safe place of work for contractors and safe plant and equipment provided by the company and used by the contractor.

Section 2

2 General Hazards

Section 2 of this safety statement deal with general hazards identified throughout the plant An outline of the hazards involved, summary of the relevant legislation and the companies policy and procedures where applicable are included in each subsection.

2.1 Fire

2.1.1 Hazards from Fire

- There are three hazards to which staff are exposed when a fire arises, and one which may occur later. Firstly and obviously the fire itself can cause burns, either directly or by heating surfaces with which the employee is subsequently in contact.
- Secondly, and this is in some ways a more immediate hazard and more likely to confront staff, there is the hazard of smoke which on inhalation can cause both short-term acute effects and longer-term health effects arising from materials which give off toxic fumes.
- Thirdly, at the time of the fire staff may not evacuate in an orderly fashion, and there are many examples of broken ankles, bruising from collision with desks and similar injuries caused by exposure to the hazard of an emergency evacuation.

After an incident in which people were at risk, or perceived themselves to be at significant risk, there is always the possibility of some staff experiencing stress which may inhibit their ability to work normally for a period afterwards.

People who are not employees but are in the building at the time of a fire are exposed to the same hazards as were described in the above .This may be exacerbated by unfamiliarity with both the building and the fire evacuation procedures. Thus the hazards may be the same but the risks may effectively be greater. This applies to contractors, members of the public, clients and other visitors, new staff and temporary staff before they have received a fire safety briefing as part of their induction.

2.1.2 Fire Policy

a)Premier Proteins 2000 is committed to the provision of safe workplaces, and this includes appropriate fire precautions to prevent fires, detect them if they arise and ensure the safe and swift evacuation of everyone from a building in which a fire has started.

b)The Manager is responsible for ensuring that Premier Proteins 2000 complies with the general requirements for good fire protection, including the maintenance of a valid fire safety certificate for new or altered building(s), the maintenance and testing of fire detection and fire fighting equipment and the provision of suitable fire exit routes with appropriate signage and maintained and tested emergency lighting.

c) The Manager shall also act as the senior person responsible for ensuring that there is both a coordinated staff training programme and that evacuation exercises are held regularly and the outcomes evaluated with a view to maintaining emergency readiness.

d) A fire risk assessment will performed for each area throughout the site.. Included in the assessment will be details of :- materials that can sustain a fire, highly flammable materials, sources of ignition, fire detection, fire fighting, evacuation and staff training/awareness.

e)Managers who appoint or manage contractors are required to ensure that the fire safety precautions are brought to their attention, and receive assurances that they will be respected and complied with.

f) A fire register will be maintained and will contain details of all fire procedures, alarms, drills, extinguisher (and inspection) and escape routes. A brief report on the success of the fire drill will also be included along with weakness high lighted.

g)Fire evacuation drill will be held at least annually

i)Every staff member is responsible for maintaining fire safety by avoiding creating fire hazards with either flammable materials (careful storage, disposal) or sources of ignition (smoking, electrical equipment). Fire exits and routes must be kept clear and, in the event of an alarm, staff are required to make an orderly exit and assemble at the appointed assembly point.

j) Staff hosting visitors are required to draw their attention to the fire safety arrangements, and to guide them out in the event of an evacuation.

2.1.3 Procedure : Fire Inspection Alarm and Drill

Fire Extinguisher Inspection

- On a weekly basis obtain the most up to date Fire Extinguisher Inspection List.
- Locate all fire extinguishers on the list and inspect as follows
- Check that Extinguisher is at location specified. If a wall mount is provided then check the that extinguisher is mounted
- Check that plastic seal is in tact. If not then remove to the work shop for replacement . Replace with spare extinguisher. And record details
- If pressure gauge is still in green and the contents are still in the cylinder and there are no other sign of discharging then it may be allowable to replace seal. Replacement of seal is to be done **only by Maintenance Foreman**
- Count the number of fires hoses present and read off the factory water pressure (gauge located outside RMS personnel door)
- Record all inspection details on Fire Extinguisher Inspection List and sign and date

Fire Alarm Test

- The purpose of the fire alarm test is firstly to check the system is operating properly and secondly to familiarize all personnel with the fire alarm sounds and procedures.
- Carry out the fire alarm check every week on Fridays between 12:00 hrs and 13:00 hrs.
- Using a special Key, activate one of the call points by inserting key , turning, pull down and wait for alarm to activate. Activate different call point each week to ensure that each one is checked in the course of a year.
- Allowed The alarm to sound for 10 to 15 seconds
- After this period reset the alarm and the panel (located at the weigh bridge) by pressing ***2113 - Silence - Reset*** . Note the key must be removed for this to happen. This will cancel alarm and reset the system
- Record details of the fire alarm test on the Fire Alarm test log.
- Notify Maintenance if any faults are detected.

Evacuation Drill

- At intervals of no more than 1 year carry out an Emergency evacuation drill. The safety coordinator will be set date for the drill to take place
- Using special key activate any call point. And start a stopwatch.
- Note the zone detected by the fire alarm
- Allow all personnel to make their way to the fire assembly point at the main gate. It may be helpful to note the arrival time at the assembly point.
- Count all personnel including contractors and visitors. When count is complete stop stopwatch and note the duration. If count results in discovery of missing personnel note location where individual normally works and were last seen (THIS WILL BE IMPORTANT INFORMATION OF EMERGENCY SERVISES IN CASE OF REAL SITUATION).
- Record any problem raised by the fire drill.
- Changes to this procedure are likely to result form each drill. (eg counting procedure missing person procedure…..) . Changes are to be made by the safety co-ordinator.

2.1.4 Procedure : Fire and Evacuation

PURPOSE
The purpose of this document is to outline the steps to be taken should a serious fire arise at the plant .

Procedure
In the event of the fire being discovered raise the alarm by activating the emergency evacuation alarm (break-glass call points)
When the Emergency evacuation alarm is heard ALL staff should make their way to the nearest building exit and assemble at the plant fire assembly point at the Main Gate.
Simultaneously conduct a count of all staff and Visitors (including outside contractor) AND Summon Emergency fire services if necessary
Switch off all pumps at WWTP (ref Procedure Emergency Response)

Alarm System
The Alarm system is to include RED FLASHING LIGHTS WERE NOISE IS LIKELY TO DROWN OUT audible alarm
Alarm to be activated by break glass call points

FIREFIGHTING
Fire fighting is only to be attempted where the fire is readily controllable and not life threatening.
Dry Powder and Carbon Dioxide extinguishers should be used in most cases.
The use of water and hose is extremely DANGEREOUS giving the nature of the products (ignition temperature is a lot higher than water - result in spreading of fire) and the number of ELECTRIC CONTROL PANELS in the factory area

Fire Drill

A fire drill will be conducted annually
Time to total evacuation and completion of count will be recorded

2.2 Manual Handling

2.2.1 Hazards from Manual Handling

Lifting, putting down, pulling, pushing, carrying or in any other way moving or holding still any material or object by personal, physical effort involves risk of causing injury to the person concerned. More than one third of the lost time accidents reported to the Health and Safety Authority (HSA) are the result of injuries sustained during manual handling operations.

The most common injuries arising from manual handling are basically musculo-skeletal problems, "strained back" meaning any strain to muscles, ligaments, tendons. The same then applies to shoulder, neck, arms, wrists, etc. (see Paras. 4:1 to 4:3 for more detailed information).

Understanding the reason for the back being particularly vulnerable requires some basic anatomy, but essentially there is a flexible column of vertebral bones separated by gel-filled discs and any force other than a direct, vertical, downward force risks squeezing the discs out from between the vertebrae, twisting stretches the discs and excess weight compresses the discs. In each case both short-term effects and longer-term degeneration from repeated efforts can occur

2.2.2 Manual Handling Policy

a)All manual handling operations shall be identified and listed, and this listing subject to annual review by each manager for her/his staff.

b)All such manual handling which has the foreseeable potential for causing an accident and injury shall be reviewed annually to see if it is necessary to carry out such work.

c)All such manual handling which, for the time being, it is necessary to carry out shall be subject to an annual technical review to establish what environmental improvements and/or reduction of load and/or mechanical aids may be provided to reduce the risk of accident.

d)All such manual handling shall be carried out by workers provided with appropriate training in lifting and handling techniques.

e)All relevant employees are reminded of their obligation to participate in training provided by the company to ensure that they understand how, safely, to handle manually, and to work to the guidelines provided in that training and subsequently by their managers.

f)All employees are requested to report to their managers in the event of any problem with manual handling, defects in environment or equipment, or personal health status which could affect their ability to work safely.

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2.3 Slips Trips and Falls

2.3.1 Hazards of Slips Trip And Falls

The definition of the slips, trips and falls are as follows:

1.Slips occur when the contact or grip between the foot and the floor surface is ineffective such as on a wet smooth surface. This can result in the person losing their balance.

2.Trips occur when the foot coming into contact with an obstruction and its expected movement is prevented leading to loss of balance.

3.Falls can be the result of a slip or trip and mean that the person has lost control of their balance completely and loses their footing. A fall may occur at ground level but more seriously from a height, next to a traffic route or into machinery.

A slip or trip may also result in the person dropping a load they are carrying. This may also cause injury to personnel, equipment or the load that has been dropped

The main hazards associated with slipping, tripping and falling are:

- ·slippery surfaces
- ·unsuitable footwear
- ·floor surface and floor coverings
- ·changes in level
- ·obstructions and protrusions
- ·poor visibility
- ·falls.

2.3.2 Slips trips and Falls Policy

(a) Premier Proteins 2000 is committed to providing a safe place of work and this applies to reducing the risks associated with slips, trips and falls.

(b)The production and workshop managers will ensure that this policy is implemented.

(c)Each workplace will be subject to regular review as appropriate to check the presence of slip, trip and fall hazards.

(d)The selection and specification of pedestrian routes will ensure that correct flooring, signs, marking and lighting levels are selected.

(e)The condition of floors, stairs and outside surfaces will be monitored by a responsible person and remedial action will be instituted where necessary.

(f)Records of maintenance and cleaning regimes will be kept and the effectiveness of cleaning and maintenance programmes will be monitored.

(g)It will be ensured that correct footwear is selected and used. This will include monitoring the provision of protective footwear, its suitability and replacement programme.

(h)Work at height or on roofs will be controlled and precautions in place to reduce the risk of falling.

(i)Incidents involving slips, trips and falls will be monitored and investigated to identify trends and causes.

(j)Work schedules will be arranged, so far as is practicable, to avoid persons having to run or rush about unnecessarily.

(k)Staff will be informed of the hazards, precautions and controls used to minimise the risks from slips, trips and falls.

2.4 Plant and Work Equipment

2.4.1 Hazards form Plant and Work equipment

2.4.1.1 Hazards to staff

Work equipment includes everything from a screwdriver used by the maintenance worker to a photocopier to the lift machinery in the lift motor room. The hazards which can arise depend upon the nature of the equipment and its use everything from burns (hot surfaces) to cuts (sharp edges) and trapping injuries. Hazards may arise because of the intrinsic nature of the equipment; for example, photocopiers generate very bright light which on repeated exposure could cause headaches and even harm eyes. Alternatively, equipment which is poorly maintained or used in the wrong way can lead to accidental injury, such as falling from a swivel chair when using it as a ladder to reach to replace a light bulb.

2.4.1.2 Hazards to maintenance workers

Each item of equipment which requires any level of maintenance requires the staff concerned to be competent and properly equipped to carry out their work. The hazards faced by even competent maintenance workers can be related to the intrinsic hazards associated with the equipment which face users as well. Also maintenance staff often are required to entertain serious hazards in order to carry out their work, such as electrocution, or back strain whilst moving machinery during maintaining and testing.

2.4.2 Plant and Work Equipment Policy

a)Premier Proteins (2000)Ltd. is committed to the selection, installation, use and maintenance of work equipment such that the health and safety of users and maintenance staff are protected.

b)Managers when performing risk assessments on the activities of their department are required to check on the work equipment used, to ensure that it is suitable for the purpose, in good condition, subject to maintenance arrangements and that the staff authorised to use it are adequately trained.

c)The manager is required to ensure that items of plant and equipment associated with the premises are suitably designed, installed and maintained for safety.

d)All members of staff are required to abide by any rules concerning authorisation for the use or maintenance of equipment, and to report as soon as possible any faults which they identify with any item of equipment. **If that fault is likely** to cause injury, the staff member is required to cease its use as soon as would be safe, take it out of service and report to the appropriate manager.

2.5 Pressurised Plant Systems

2.5.1 Hazards form Pressurised plant Systems

From a legislative viewpoint pressure systems can be divided into five categories namely, steam boilers, steam receivers, air receivers, pressurised containers of

flammable materials (or dangerous substances) and pressurised containers of any other type of substance. A pressure system can be defines as:

(a)a system comprising one or more pressure vessels of rigid construction, and associated pipework and protective devices;

(b)the pipework with its protective devices to which a transportable gas container is, or is intended to be, connected; or

(c)a pipeline and its devices.

Installed pressure systems

This form of fixed systems commonly operates on a ring main basis fixed to the building structure. It may incorporate a pipework system linked to a gas container, for instance a compressed gas cylinder, with plug-in connections for hand tools at different points in a workshop. In-situ carbon dioxide fire extinguishing system operate on this principle.

Mobile pressure systems

These can be defined as pressure systems which can be readily moved between and used in different locations but not including a steam locomotive or steam generator van within a train set. Examples of mobile pressure systems are portable air compressors, trailer-mounted mobile air compressors, breathing apparatus sets and large fire extinguishers, i.e. those over 23 kg total mass above 25 bar pressure.

Significant hazards

The main hazard arising from pressure systems, which incorporate pressure vessels, has always been that of explosion, frequently causing deaths and major injuries. Explosions can be caused by:

- ·uncontrolled energy releases
- ·overheating in pressure vessels
- ·corrosion.

Uncontrolled energy releases

Uncontrolled energy releases can arise as a result of overheating and over-pressurisation, and the failure of a range of safety devices that must be installed, such as pressure valves and high and low water alarms. The long-term effects of corrosion can be a contributory factor in boiler explosions and failures of pressure systems.

2.5.1.1 Overheating in pressure vessels

The main causes of overheating incidents are:

(a)lack of testing and maintenance of controls and alarms, leading to malfunction; and

(b)occasionally inadequate standards of control.

These causes are associated with poor standards of management control.

Corrosion

Corrosion in boilers and other parts of a pressure system can result in loss of metal thickness, and therefore strength, wastage of metal at numerous sites in the system, "grooving", a form of mechanical corrosion, due to expansion and contraction of boiler parts, and through the burning of high sulphur content fuels in boilers.

On this basis, pressure vessels, in particular, should always be subject to particular requirements relating to the prevention of overheating and over-pressurisation and the control of corrosion.

Other hazards associated with pressure systems

Other hazards may include:

(a)Noise arising from burners and compressed gases stored in the system which may exceed the action levels specified in the Noise Regulations 1990 .

(b)Injection of compressed gases, in particular compressed air, through accidental contact with the skin, and introducing air bubbles into the muscular tissue and blood.

(c)Hazardous substances stored in a pressure system may be released as liquids or aerosols as a result of failure of the system or through operator error

2.5.2 Pressurised Plant System Policy

a)Premier Proteins (2000)Ltd. is committed to the selection, installation, use and maintenance of Pressurised Plant Systems and equipment such that the health and safety of users and maintenance staff are protected.

b)Managers when performing risk assessments on the activities of their department are required to check on the Pressurised Plant Systems used, to ensure that it is suitable for the purpose, in good condition, subject to maintenance arrangements and that the staff authorised to use it are adequately trained.

c)The manager is required to ensure that Pressurised Plant Systems and equipment associated with the premises are suitably designed, installed and maintained for safety.

d)All members of staff are required to abide by any rules concerning authorisation for the use or maintenance of equipment, and to report as soon as possible any faults

which they identify with any Pressurised Plant Systems. **If that fault is likely** to cause injury, the staff member is required to cease its use as soon as would be safe, take it out of service and report to the appropriate manager.

2.6 Lifting Equipment and Appliances

2.6.1 Hazards From Lifting Equipment and Appliances

2.6.1.1 Hazards to staff, visitors and others

The main hazards relating to lifting equipment relate to failure of the equipment due to overloading, incorrect assembly or design, inadequate maintenance or due to incorrect use. Resulting injuries are in general quite serious or fatal often involving crushing or trapped limbs.

2.6.1.2 Hazards to maintenance staff

Maintenance of such equipment will also generally involve a high degree of risk due to fact that such equipment is generally situated at a height and will also generally involve working with electricity. In addition some areas that need to be maintained, such as lift shafts, are considered to be confined spaces.

2.6.2 Lifting Equipment and Appliances Policy

Premier Proteins 2000 use a variety of lifting equipment on their premises. The risks associated with the use of such lifting equipment arise from failure of a load bearing element of the equipment, overturning of the lifting equipment or loads falling from a height.

Such incidents would result in limb entrapment or other serious injuries including death. Overall such risks are considered medium bearing in mind the control procedures as detailed below:

(a)All lifting equipment that is used on the premises will be CE marked and certified as designed to a relevant recognised international standard.

(b)When purchasing any such lifting equipment or appliances safety will be one of the factors considered.

(c)All new equipment will be risk assessed prior to commissioning with particular reference to the proposed area of usage.

(d)All lifting equipment and appliances are uniquely identifiable.

(e)All equipment will be certified by competent persons every six months, on installation or after a major repair. Where deemed appropriate the competent persons may decide that particular items of equipment should be certified on a more frequent basis depending on usage and the degree of risk the particular piece of equipment poses.

(f)Records of each certification carried out and to any other work carried out on each piece of equipment will be maintained by the Maintenance Engineer.

(g)The SWL will be prominently displayed on all lifting equipment and this will not be exceeded. Alarms will be fitted to equipment where possible.

(h)All lifting equipment will only be used by persons trained in its use.

(a)Persons who are required to work within an area where loads are carried above them will be required to wear hard hats and steel toe capped shoes.

(i)Mobile lifting equipment will only be used on secure stable surfaces.

(j)The Maintenance foreman is responsible for reporting to the HSA any dangerous occurrences using IR 3 or where required any inspection that indicated that repair work is necessary to continue to use a piece of equipment at its rated loading

2.7 Fork lift Trucks

2.7.1 Hazards from Forklift Trucks

Many of the hazards with fork lift trucks also apply to other forms of workplace transport. Fork lift trucks are, however, one of the most popular of workplace transports in use in warehouses and factories generally.

2.7.1.1 Definition of Fork Lift Trucks (Flts)

Fork lift trucks are very useful for transporting awkward or heavy loads for short distances around a warehouse or workshop for example.
There are two main categories:
1.Counterbalanced fork lift trucks counterbalanced FLTs use the front wheel axle in the same way as the fulcrum of a lever. The load is on one side and is counterbalanced by the weight of the machine on the other side. The fork arms or tines project outwards from the front of the vehicle. The mast can be tilted either backwards or forwards usually up to an angle of 15 degrees at most. The load can be moved vertically up and down on the projecting fork arms.
2.Non-counterbalanced fork lift trucks in non-counterbalanced FLTs the centre of the load is behind the fulcrum point. They are known as reach trucks or straddle trucks.

This type of FLT reaches out to deposit the load or straddles the stack for depositing the load. They are used for particular load stacking functions and are less versatile than the counterbalanced type.

Types of Lift Truck in Common Use

- Industrial counter balanced lift trucks - these are widely used and are suitable only for work on smooth floors/areas, they can be fitted with a wide range of attachments

- Rough terrain counter balanced lift trucks are similar to the above but have large wheels and pneumatic tyres so that they are safe to use on more uneven surfaces; they are often used on building sites

- Industrial reach trucks are often used in warehouse areas. They are designed for use on reasonably even surfaces. The mast reaches out to pick out loads and can then be reached back within the wheel base area so that they are useful in work spaces where room is limited and tight maneuvering is useful

- Pedestrian operated or controlled lift trucks. These are often electrically powered and the operator does not drive it but walks along side it controlling it with manually operated handles

- Telescopic materials handlers are fitted with a boom which can be lifted and lowered by hydraulic rams. The boom can reach out like a telescope. They tend to

be two wheel or four wheel drive and are used extensively in agricultural work and in the construction industry

- Side loading lift trucks are used in particular for transporting long loads , e.g. timber. The position of the driver is different to other lift trucks in that the drivers cab is at the front and to the side of the lift truck itself.

These are the chief but not only types of lift truck in widespread use. As well as the basic trucks some can also be fitted with various attachments, e.g. extensions to fork arms, clamps, crane jib attachments and booms.

There are many different types of lift truck and although this entry concentrates on lift trucks with fork arms the guidance provided will be useful for work with most types of lift truck, including those which have different sorts of attachments other than straightforward fork arms, e.g. hydraulically operated telescopic fork arms which are particularly useful for reaching more distant loads, clamps, booms, rotators, crane jibs, self-dumping hoppers, etc. Many of the hazards associated with fork lift trucks, also apply to other forms of workplace transport.

2.7.1.2 Significant Hazards

Nearly all risks arise from one or more of the following groups of hazards:

- FLT unsuitability
- Poor maintenance
- Traffic route inadequacies
- FLT operating factors

These are discussed in more detail below.

2.7.1.2.1 Fork Lift Truck (FLT) Unsuitability

FLTs must be suitable for the task assigned to them. Accidents such as tipping and rolling can result if the FLT has a lifting capacity or lift height too small for the loads being dealt with. Consideration must be given to the working environment to ensure that the FLT specification is such that it allows the vehicle to operate safely in the space provided. For instance, diesel trucks should not be used in confined spaces as they pose a risk of exposure to fumes.

Suitability of the FLT must also take into account the work station for FLT operators. Poor ergonomics in the truck such as seating and the position of controls can also lead to back and upper limb disorders for regular operators.

2.7.1.2.2 Poor Maintenance

If the FLT is not kept in good working condition, accidents can result from faults that have remained unchecked due to an inadequate servicing or maintenance schedule. For example, a braking system that has remained unchecked on lift trucks bearing loads in areas frequented by pedestrians can result in it being unable to stop rapidly to prevent danger to others or indeed the driver.

Other examples of poor maintenance includes incorrect tyre pressures, inoperative warning lights or signals etc. For example, when the vehicle's tyres are not inflated to the recommended pressure, the driver may experience difficulty in controlling or stopping the vehicle effectively. Poor maintenance of warning lights and sirens or horns can lead to accidents, for example if the driver fails to indicate when he is reversing, pedestrians could walk in the path of the vehicle which could lead to serious accidents.

2.7.1.2.3 Traffic Route Inadequacies

An obstructed traffic route or one which is poorly lit or signposted will increase the risk of accidents. This can include problems such as:

- ·uneven operating surfaces
- ·possibility for contact with overhead obstructions
- ·insufficient segregation of FLT and pedestrian routes
- ·inadequate visibility or warning systems for FLT operators and pedestrians, e.g. no reversing mirrors, drive slowly signs, loading or unloading delivery vehicles in busy areas with no supervision or proper control.

2.7.1.2.4 Operating Factors

FLT operators need to have sufficient training and instruction to be able to drive and manoeuvre the FLT safely. Operating factors, which could result in damage to the load itself or worse still, physical injury or even death to workers or other persons in the immediate vicinity, include:

- ·overloading
- ·overturning
- ·incorrect positioning of load on forks may cause longitudinal loading, lateral instability or impaired vision
- ·speeding
- ·incorrect use of controls, e.g. excessive forward tilt used at high-lift

- ·load displacement caused by heavy braking
- ·traversing inclines or travelling with FLT facing wrong way when negotiating an incline
- ·failure to ensure stacks are safe when stacking or before de-stacking
- ·carrying or lifting passengers
- ·driving under the influence of alcohol or drugs.

It is absolutely crucial that FLT drivers have an understanding of the operating features of the vehicle they are using and the effect of the work environment on the vehicle.

2.7.1.3 Other Hazards

Other hazards involved with work with or around FLTs include:

- Noise can affect the driver's hearing or distract the driver's attention when the vehicle is in motion. When daily personal exposure exceeds 90 dB(A), a noise assessment must be conducted (see Module on Noise). The vehicle manufacturer must provide relevant information about the levels of the noise emissions from their trucks.
- Refuelling or battery charging poses the risk of exposure to electricity or hazardous substances. Battery charging can be a hazardous operation because of the possible exposure to battery acid which can cause nasty burns and because of the possible build up of explosive hydrogen gas.
- Fumes. FLTs with an internal combustion engine can be run on petrol, diesel or liquefied petroleum gas (LPG). Hazards here arise from emission of exhaust fumes in confined space or spaces which are inadequately ventilated causing the risk of explosion, and/or asphyxiation.

2.7.2 Fork Lift Truck Policy

It is our policy to exceed, where possible, the minimum health and safety requirements of the law. We aim to provide a working environment that is both comfortable and that maximises the effectiveness of employees.

In order to achieve our goals, we will put in place arrangements and procedures for the assessment of risks from the use of fork lift trucks. The risk assessment will be

followed by the provision, maintenance and monitoring of appropriate control measures to minimise any risks identified.

Responsibility for implementing this policy lies with Assistant Managers and production supervisors who will delegate functions.

a)Employer's duties

The appointed managers must ensure that operators of FLTs meet training requirements before allowing them to operate fork lift trucks, and keep a record of training provided and received as evidence of competence.

We undertake to ensure that:

- ·only fork lifts which are built to a high standard and that comply with the appropriate CE mark, will be provided for the use of staff
- ·fork-lifts are fitted with overhead protective cabs to protect operators
- ·fork-lifts are maintained in good working order and condition and will be certified by a competent person as and when required by law
- ·fork-lifts are used in designated areas marked with appropriate safety signs

b)Operator's duties

A person must not operate a fork-lift truck unless:

- ·They are 18 years
- ·They have successfully completed an approved training course
- ·They have received appropriate training, information and instruction in the safe use of the particular type of fork lift in use at the workplace and a certificate from the employer to that effect
- ·They have undergone appropriate medical checks and are fit for the task. This does not necessarily mean that disabled employees who are suitably qualified will not be employed as fork lift truck operators
- ·They are experienced in or made familiar with the working environment

c)Safe operation

When operating a FLT, the following rules apply:

·STABILITY is crucial. Do not drive with the load in a raised position

·Consider the load in relation to the terrain

·Make sure regular maintenance checks are carried out and carry out visual checks on a daily basis

·Be vigilant. Visibility when driving a fork-lift is always partially blocked, so watch out for other people and vehicles or obstacles

·If your vision is completely blocked by a load, drive in reverse, using caution. But do not reverse up an incline

·Remember to park safely

·Control your speed and drive slowly as appropriate

d)It is our company policy to:

·Carry out pre-operating checks before driving

·Prohibit other staff from riding on the fork lift

·Report defects or problems to the nominated supervisor

·Prohibit unauthorised modifications to fork-lifts. Only those qualified to do so can make mechanical adjustments to the equipment

e)Refuelling or recharging:

When changing LPG cylinders or refuelling or changing batteries:

- ·Switch off the ignition
- ·Make sure the vehicle is parked safely and does not cause obstruction or block exit routes
- Change in designated well ventilated, no smoking areas only
- ·Check for leaks
- Charge away from potential sources of ignition
- ·Dispose of empty fuel cylinders safely, e.g. to the designated safe storage area
- ·Check all relevant fuel connections and cylinder securing devices

2.7.3 Safety Instruction for Operators

Introduction
Taking charge of a forklift is a very responsible duty. You are responsible for the safe operation of a powerful machine capable of lifting large loads but also capable of large amounts of damage and injury. This document outlines some of the basic precautions to be taken when driving a forklift.

Working load
Make sure you know the maximum working load of the forklift you are in charge of. If unsure then ask your supervisor

Keep load low when moving
When moving the forklift with a load keep it as low to the ground as posssible. This will keep the centre of gravity low and lower the risk to toppling the forklift.

Forks down
When driving with no load always keep the forks low to the ground. This is so that if you do hit someone the injury inflicted will not be to any vital organs

Be on the look out
Always be on the look out for other vehicles, people and obsticles.

Changing direction
Always stop and use the hand brake before changing direction. Always look behind you before putting fork lift into gear (forward or reverse)

No Sudden Braking
Avoid sudden braking as this may cause the forklift the skid and lose control

Drive Slowly
Drive slowly with the forklift.

No Passangers
There is no passenger seat on a forklift so don't take passengers. It is forbidden to carry passenger on a forklift

Horn
Use the horn in good time before turning a corner

Parking
Always park the forklift with the hand brake on and the tip of the forks resting on the ground

Report
Report all Accidents and Damage to your supervisor no matter how trivial it may seem

2.8 Hand Tools

2.8.1 Hazards From Hand Tools

2.8.1.1 Definition of hand tools

For the purposes of this risk assessment hand tools are defined as tools which are hand held and portable. Activities that are usually carried out using hand tools include:

- ·tightening or loosening screws, nuts or bolts, e.g. screw drivers, spanners etc.
- ·cutting or clipping, e.g. shears, stanley knives etc.
- ·drilling
- ·gouging, e.g. chisels
- ·sawing
- ·planing
- ·spreading of materials such as concrete, e.g. trowels
- ·pasting or painting surfaces, e.g. brushes
- ·striking an object, e.g. hammer, mallet, sledge hammer etc.

2.8.1.2 Significant hazards

There are a wide range of hazards associated with hand tools that depend not only on the tool used and the operation being undertaken, but also the source of its power. Hand tools can be either electrically powered, air driven or manually operated, for example using a manual drill presents hazards associated with rotating parts and contact with the drill bit, whereas an electric drill has additional hazards associated with electricity. The other factor to consider when identifying hand tool hazards is that they are mobile and can be used in different areas in the workplace. Therefore the situations and conditions in which they are used may differ substantially and need to be considered during any risk assessment. Once again consider the example of the electric drill, it may be used in an indoors, dry environment or in a wet, outdoor environment where there may be a risk of water affecting the electric circuits.

Injuries can result if the worker uses the tool incorrectly or uses the wrong tool for the job. Accidents can also occur if the hand tool is not well maintained and not fit to use.

In summary, most of the hazards associated with the use of hand tools arise from the following groups of hazards:

- 1.Contact with the hand tool.
- 2.Contact with the item being worked on with the tool.
- 3.Noise from the hand tool or operation.
- 4.Electricity.
- 5.Dusts and fumes.
- 6.Pneumatic operations.
- 7.Vibration.

These are discussed in more detail in the following sections.

2.8.1.3 Contact with the hand tool

Contact with the hand tool can result in injury in several ways. The main hazards are:

1.Entanglement items such as hair, rings, or clothing can become entangled in moving parts of hand tools especially rotating parts, for example rotating drill bits or chucks holding the component or holding the cutting part of the tool. Entanglement can result in parts of the body being drawn into the rotating part or being severed as the item entangled is ripped away or tightened.

2.Ejection material such as wood splinters or metal swarf being produced potentially causing eye injuries. If the chuck key that allows the handtool bits to be changed is left in during operation it may be ejected causing physical injury.

3.Hot surfaces parts of the hand tool may become hot during use especially when sawing or drilling. Contact with these surfaces may result in burns.

4.Contact with abrasive or sharp surfaces such as grinding wheels or saw blades leading to cuts, burns or severed fingers. Puncture wounds or stabbing can be caused by drills or blades.

5.Poorly maintained tools tools that have become blunt or damaged are more likely to slip resulting in abrasions or cuts, or break when being used. Examples are:

(a)chisels where the heads have become burred or mushroomed and therefore blunt;

(b)files without handles;

(c)blunt knives;

(d)screwdrivers with worn blades;

(e)split or loose shaft may lead to a hammer head becoming detached from shaft and causing physical injury.

6.Using incorrect tools for the job for example using a screwdriver for chiselling or using a sharp knife for stripping wires can result in slipping that may cause an injury. Using a low impact socket on an air gun may result in the socket bursting during use.

2.8.1.4 Contact with component

The material or item being worked on with the hand tool is known as the component. During the operation the component may become hot or the work may result in sharp edges and therefore contact with the component may result in burns or cuts. If the component is not clamped firmly into place during the work it may spin or move violently, for example during drilling, with the potential to cause harm to the operator. If the component or a part of the component breaks free it may cause damage to the worker or others in the immediate vicinity.

2.8.1.5 Noise

Noise may result from the hand tool itself for example electric sanding or sawing or from the action of the hand tool on the material being worked. Noise can affect the operators hearing or distract their attention. Where daily personal exposure exceeds 90 dB(A), employers must reduce it as far as is reasonably practicable and ear protection must be provided and worn (refer to Module on Noise). Manufactures of hand tools with CE markings will have assessed the noise levels that result from its use and can be asked for this information.

As hand tools are portable they are likely to be used in a wide range of areas. If a noisy operation is taking place in an area where there are other people working, an assessment should be carried out to ensure that they are not going to be affected by the noise. If so, they too should be given ear defenders or moved to another area until the noisy operation has been completed. More details regarding the risk assessment of noise is covered in Module on Noise.

2.8.1.6 Electricity

Electrically powered hand tools present hazards such as:

·incorrect voltage

·incorrect fuses

·faulty wiring or connections

·poorly maintained equipment, cables or plugs

·use of electrical hand tools is inappropriate conditions such as in the wet.

Because electrically powered hand tools are portable and regularly transported they have a potential to become damaged or heavily worn. Cables may become damaged, due to inefficient storage, or frayed at the base of the tool if the leads are over extended during use. The power points used will vary and if these are not up to standard, there is a risk of electrocution. In addition, hand tools can be used in a wide range of conditions. Some areas may represent an additional risk such as if there is a lot of water around or a flammable atmosphere. The hazards associated directly with the use of electrical items are dealt with in the Module on Electricity: Systems and Equipment.

2.8.1.7 Pneumatic operarions

Injuries resulting from the use of pneumatic tools include:

·accidental or deliberate injection of material or air through the skin or into body orifice

·failure of pressure circuits resulting in ejection of parts of machinery or high pressure fluid

·damage caused to pipes or hoses.

Medical advice should always be sought if workers are injured when using pneumatic tools as injection injuries may not be immediately obvious. Ordinary working clothes do not provide adequate protection against contact with high pressure fluids.

2.8.1.8 Dusts and fumes

Dust and fumes may be emitted during cutting, drilling or grinding operations. These may result in ill-health if inhaled. The dust may be finely ground material such as wood or plastic. Fumes can result from the equipment itself, for example diesel or petrol driven tools or welding. The particular hazards associated with the use of hand tools is that they can be used in a wide range of situations. Dust and fumes may be a particular concern in confined spaces or where there is insufficient ventilation. Personal protective equipment may be required and this is discussed in Para. 3:9.2.

2.8.1.9 Vibration

Many hand tools produce high levels of vibration such as chain saws, power hammers and riveting and chipping hammers. Vibration can cause a condition called vibration white finger (VWF). This can damage blood vessels resulting in a reduced blood supply to the fingers and affecting nerves causing a permanent loss of feeling. The level of risk to an operator of a vibrating hand tool is dependant on the amount of vibration produced, the length of time the tool is used and the working conditions. Cold and cramped conditions can increase the risks of VWF. Any vibrating tool is suspect if it causes numbness or tingling in fingers after five to ten minutes continuous use. At this point the situation should be reported to a supervisor so that the tool and operation can be assessed further and the risks controlled.

2.8.1.10 Other hazards

Other hazards associated with the use of hand tools are slips or trips caused by trailing equipment cables (see Module on Slips, Trips and Falls). Using hand tools on ladders above work areas may result in items being dropped and hurting people below (see Module on Scaffolding and Working at Heights).

2.8.2 Hand Tool Policy

(a)Premier Proteins 2000 is committed to the selection, use and maintenance of hand tools both manually and power operated, such that the health and safety of users and maintenance staff are protected.

(b)The production/workshop manager will ensure that this policy is implemented.

(c)Managers, when performing risk assessments of activities in their department, are required to check the hand tools being used, to ensure that they are suitable for the purpose, in good condition, subject to maintenance arrangements and that the staff authorised to use them, are adequately trained and use appropriate PPL.

(d)All members of staff are required to abide by any rules concerning authorisation for the use or maintenance of equipment, and to report as soon as possible any faults which they identify with any item of equipment. If that fault is likely to cause injury, the staff member is required to cease its use as soon as would be safe, take it out of service and report to the appropriate manager.

2.9 Abrasive Wheels / Grinding

2.9.1 Abrasive Wheel /Grinding Hazards

Definition of abrasive wheels/grinding machines

This module covers the risk assessment related to the use of manually operated pedestal grinding machines (used for tool sharpening, metal forming and component cleaning) and manually operated surface grinding machines (where the component is held and the wheel is moved up/down, along or across the surface under the control of the operator). It also covers the use of hand-held abrasive wheel machines or cutting discs used on construction sites.

The Safety in Industry (Abrasive Wheels) Regulations 1982 defines an abrasive wheel as:

1.a wheel, cylinder, disc or cone which, whether or not any other material is comprised in it, consists of abrasive particles held together by mineral, metallic or organic bonds, whether natural or artificial;

2.a mounted wheel or point and a wheel or disc having (in either case) separate segments of abrasive material;

3.a wheel or disc made (in either case) of metal, wood, cloth, felt, rubber or paper and having any surface consisting wholly or partly of abrasive material; or

4.a wheel, disc or saw, to any surface of which is attached a rim or segments consisting of diamond abrasive particles.

Significant hazards

The principal hazards associated with grinding are:

- ·contact with the rotating abrasive wheel;
- ·bursting wheels;
- ·harmful particles/dust and fumes and associated fire hazard;
- ·substrate working loose;
- ·vibration;
- ·noise.

Contact with the rotating abrasive wheel

It is possible for the fingers, hands or arms to come into direct contact with rotating discs as a result of inadequate or absent guarding or because the operator has not received the correct instructions on how to set and maintain the integrity of the guards. When the operator uses a pedestal grinder for sharpening tools they are exposed to the risk of cutting and crushing injuries to the fingers or hand, which could be trapped between the wheel and the workrest.

Bursting wheels

This is when the grinding wheel disintegrates and pieces become dangerous projectiles. Bursting wheels can result in severe impact injuries from fragments of the wheel being ejected at very high speeds. These fragments have sufficient power to penetrate exposed, or poorly protected, parts of the body. In fact there have been several fatalities relating to such injuries in previous years in both the UK and Europe. Even in routine operations there is a real risk of eye injuries from flying particles.

Harmful dust or fume

Harmful dust, generated by the abrasive action of the wheel on the component surface, consists of small particles of the abrasive and the material being scoured. When these particles enter the eye they are extremely painful and cause considerable irritation of the cornea in some cases leading to permanent damage. Breathing the dust can also cause short-term irritation of the nose, throat or lungs, i.e. the respiratory tract. Grinding metals that are coated with plastics, paint, or metal finishes such as galvanising creates another hazard related to the formation of fume from the melted coatings. These fumes will vary in content depending on the coating but many are degraded hydrocarbons of potentially high toxicity. Inhalation of the fume can, therefore, lead to more chronic and permanent lung damage. For grinding operations on concrete, a water spray will greatly reduce the amount of dust expelled.

In addition, the potential for fire arises when aluminium or magnesium metals are being ground. The dust being released can easily catch fire because of the high reactivity of these metals with oxygen. In these situations the dust should be extracted using high velocity, local exhaust ventilation (LEV). The grinding of other materials will generally result in high temperature particles being expelled from the work area, which can cause a fire to start. The hazard associated with this can be reduced by ensuring the surrounding work area is free from combustible materials and by using a lubricant on the wheel.

Substrate working loose

Where the abrasive wheel is used on a substrate that is not fixed, there is always the danger of the substrate working loose from what ever is used to hold it and being ejected with velocity from the work area, possibly hitting the abrasive wheel operator or any person in the vicinity. When carrying out such operations it is important that the substrate is properly secured.

Vibration

Vibration from hand held grinding machines can cause a condition called vibration white finger caused by constriction of the blood vessels in the hand thereby reducing the blood supply and giving the hand a white appearance. Such a condition can occur after prolonged use of such hand tools.

Noise

Grinding and cutting operations can easily attain sound levels in excess of 85 dBA. As such operators will be required to wear ear muff etc. refer to the Module on Noise for more details.

2.9.2 Abrasive Wheel / Grinding Policy

1.Premier Proteins 2000 is committed to ensuring the health and safety at work of all employees, to providing safe work equipment and systems of work, and this applies to abrasive wheel/grinding operations.

2.The production/workshop/site manager will ensure that this policy is implemented.

3.Each abrasive wheel activity will be subject to (at least) annual review to ensure that suitable equipment is provided and maintained and appropriate materials are used.

4.Where appropriate, fluids will be used to safe guard against dust and prolong tool life. Such fluid will be as safe as reasonably practicable, will be changed at the end of their working life and before they are badly degraded.

5.Records will be kept of inspection, testing and maintenance activities relating to abrasive wheels.

6.Formal procedures will be developed and communicated in connection with normal working and maintenance activities. In addition, a contingency policy will be developed to deal with foreseeable emergencies such as accidents or incidents involving the use of abrasive wheels.

7.Staff engaged in grinding activities shall be informed as to the risks, instructed as to good, safe working practices and trained for competence in carrying out the activities.

8.Abrasive wheels will comply with the design requirements of the Safety in Industry (Abrasive Wheels) Regulations 1982.

9.Abrasive wheels will be stored properly so as to prevent damage.

10.All wheels used will be clearly marked as per BS 4481 Part 1, including the max rpm which will not be exceeded.

11.Guards will be of sufficient strength to contain fragments of busting wheels.

12.Portable electrical grinders will be 110v.

13.The correct wheels for the task will be used (i.e. an angle grinder or cutter etc.) and will only be mounted/fitted by authorised personnel who have successfully completed the mandatory training requirements laid down by the Schedule in the Safety in Industry (Abrasive Wheels) Regulations 1982.

14.All wheels will be run without load for at least one minute after mounting.

15.A rigorous standard of dress will be required of all those involved in grinding operations including the banning of loose clothing, jewellery (other than wedding rings) and long hair (unless it is tied back or tucked inside protective headgear).

16.Good personal hygiene arrangements (personal clothing storage, effective protective clothing, laundering and washing facilities) shall be provided and maintained.

17.All staff are required to report without unreasonable delay any defects or shortcomings in equipment or safety arrangements, or any health problems to their supervisor.

2.10 Hot Works

2.10.1 Hot Works Hazards

Definitions of hot works

Hot works operations involve the application of heat by tools or equipment either from an electrical source, for example an electrical arc, or by the use of a compressed gas, such as acetylene or propane. Hot works are used to joint metals together, or for cutting sheet metal to a specific shape or in the construction industry for purposes such as burning off coatings or applying bituminous jointing to roofing material.

Significant hazards

The principal hazards likely to be encountered during hot works are:

- ·fire and explosions
- ·burns
- ·toxic fumes and gases
- ·oxygen enrichment
- ·infra red and UV radiation
- ·shock and electrocution.

2.10.1.1 Fire and explosion

Arcs, flames, sparks spatter (the ejection of small particles of metal or other involved materials in all directions) are sources of ignition which will readily ignite flammable materials and waste in the immediate vicinity of the hot works operation. Hot works adjacent to systems or vessels under pressure can result in explosion.

2.10.1.2 Gas

Where gas is used as a heat source, gases commonly used are acetylene and propane, both of which are flammable and form mixtures with air or oxygen. Any leakage of fuel gas is potentially hazardous, as ignition may lead to rapid or explosive combustion, particularly in confined spaces or poorly ventilated areas. Propane is heavier than air, can accumulate at floor level and will readily ignite. Acetylene, an unstable gas, can decompose explosively when subjected to heat or shock. This can occur in the absence of oxygen and under pressure.

Hot works in or in the vicinity of tanks, drums and vessels that have not been completely freed of their flammable contents and/or purged with an inert gas can frequently result in explosions, in many cases having fatal results.

2.10.1.3 Electricity

Where electricity is used to generate the heat source hazards can arise through poor maintenance and/or repair of equipment, improper use, and the use of unsuitable materials, e.g. insulation tape, to effect repairs to equipment and connections.

2.10.1.4 Burns

Workers involved in hot works are commonly exposed to hot surfaces and may suffer burns, in particular, to the hands and arms. Flying spatter may also burn other parts of the body, such as the face and neck.

2.10.1.5 Toxic fumes and gases

The inhalation of fumes from heat sources or the materials being worked upon can lead to health hazards such as the condition "welders lung" or siderosis. Metallic fumes in the form of oxides can be evolved according to the process being used. The action of heat and ultra violet leads to the evolution of ozone, carbon monoxide and oxides of nitrogen. Heavy particulate matters in the form of respirable dusts can be created as smoke and metal spatter. Many of the gases, vapours, fumes and dusts evolved are invisible, colourless and odourless, so considerable care must be taken when working in confined spaces or unventilated areas.

2.10.1.6 Oxygen enrichment

Some hot works operations such as welding and cutting use oxygen to support combustion of the fuel gas. Accidental leakage of oxygen has, therefore, considerable hazard potential. Oxygen enrichment will cause a change in the ignition characteristics of all materials, including those considered to be non-combustible. Any oxygen leakage in confined or unventilated areas is a matter for immediate concern.

Activities which can cause oxygen enrichment include flame cutting, which can discharge up to 30% unconsumed oxygen into the atmosphere. On this basis, flame cutting should not be carried out in a confined space or area until special arrangements to control ventilation have been made.

2.10.1.7 Infra-red and ultra-violet radiation

Hot works operations can expose both operators and other persons in the immediate vicinity to radiation, both infra-red (radiant heat) and ultra-violet (UV). UV radiation can be hazardous in that it affects the skin and eyes in a similar way to the sun.

Exposure to UV radiation while welding can also result in the condition known as "arc eye", a painful but temporary form of conjunctivitis. This can have an acute effect on the eye with extensive irritation and the painful sensation of "grittiness" of

the surface of the eyeball. Chronic effects can include permanent visual damage and, in extreme cases, blindness following prolonged exposure.

2.10.1.8 Shock and electrocution

Electric welding sets used to carry out hot works operate on a circuit incorporating:

(a)the lead, which carries the current from the welding set to the electrode and to the component;

(b)the return lead, which returns the current from the component to the welding set; and

(c)the earth, which must be connected to the component.

The return lead is essential to prevent current taking random paths, for instance, via structural steelwork, metal pipes, etc. A particular danger is that if a random path includes a loosely bolted connection, a high resistance is set up which will cause heat to generate as the current flows through it, possibly resulting in fire. The return lead should be firmly clamped to the component.

The earth is necessary to maintain the component at earth potential and thus prevent electric shock by safeguarding against the possibility of the component becoming energised at mains voltage, or energised because of the lack of continuity in the hot works return.

2.10.2 Hot Works Policy

- Only appropriately trained employees, authorised in writing, may handle or use hot works equipment, including gas cylinders.
- Hot works in area other than those designated as “Safe Hot Work Area” may only be carried out under the permit to work system
- Operating instructions and safety signs should be followed and any shortcomings or faults with equipment, procedures or the safe system of work should be reported immediately to your supervisor, who will initiate appropriate action.
- Screens and notices must be in place at all times when hot works are in progress.
- All potentially hazardous incidents and accidents involving hot works should be reported to your supervisor. First-aid notices should give details of first-aiders who are competent to deal with incidents or accidents involving pressure fluids
- These procedures will be monitored and reviewed as necessary.

2.11Noise

2.11.1Noise Hazards

1:1 Definition of noise in the workplace

Noise is, strictly speaking, unwanted sound. We know that either above certain levels, or in a short sharp form like an explosion, or at lower levels over a period of time, people can suffer hearing damage following exposure. The European Communities (Protection of Workers) (Exposure to Noise) Regulations 1990 provide a general framework for dealing with noise that is capable of causing long term damage to exposed workers and others.

Sound is energy that is created by fluctuations in air pressure caused by a vibrating source such as a saw or a rotating shaft. The variation in air pressure is measured in Pascals. Regular atmospheric pressure is 100,000 Pascals or 100,000 Pa for short. The pressure changes causing sound are much smaller. For example a noisy factory may have 2 Pa and an office only 0.02 Pa. The range of sound that exists is from 20 micropascals (20 millionths of a Pascal) to 200 Pa. Since this is such a wide range (10,000,000) the scale is reduced by using the logarithm and the unit is called the Decibel or dB for short. However, the ear does not hear all frequencies as sensitively as each other; very high and very low frequencies are not heard as well as the middle frequencies around which the human voice resides. Therefore, noise measuring equipment is adjusted or weighted to respond in the same way as the ear. This is known as the 'A'-weighting and noise is measured as dB(A).

If you are in a noisy area and you cannot hear clearly when someone is speaking two metres away, and you have normal hearing, the level of noise is likely to be 85 dB(A) or above. If they are one metre away and you cannot hear clearly the level is likely to be 90 dB(A) or higher.

1:2 Significant hazards

1:2.1 How noise can cause hearing problems

Sound is transmitted to the ear drum which vibrates. These vibrations are transmitted to the inner ear which has a liquid-filled tube coiled like a snail shell. There are hairs inside this tube which detect the vibration waves and transmit signals to the auditory sensory nerves at the base of the hairs. If there is excessive noise the vibration waves can flatten some of these hairs which then loose the ability to detect the vibration. These effects can be temporary at lower sound levels and after short periods of exposure they can recover. The louder or more intense the noise and/or the longer the duration of the exposure the greater the risk that the hairs will become permanently damaged and lose their ability to detect sound. As more and more of these hairs become damaged so the hearing becomes more and more impaired. Once these hairs are damaged to this extent they never recover. The hearing loss therefore is permanent.

1:2.2 Action levels

The noise "dose" over eight hours (the average) is called the LEP,d. If a worker is exposed to 90 dB(A) for eight hours the LEP,d is 90 dB(A). If he/she is only exposed for four hours, the average for the eight hours is half that, which, because of the logarithmic scale, is 87 dB(A), as 3 dB(A) represents a doubling or halving of the sound level. Half of 90 dB(A) is therefore 90 - 3 = 87 dB(A). If the exposure is only two hours the LEP,d is therefore 84 dB(A), i.e. a quarter of the 90 dB(A) is 90 - 3 - 3 = 84. Under the Noise Regulations 1990 (see Para. 2) there are three "action levels" which require the employer to take a series of specific actions.

They are:

·First action level: LEP,d above 85 dB(A)

·Second action level: LEP,d above 90 dB(A)

·Peak action level: Level of peak sound pressure of 140 dB(A).

Typical Noise Levels

Activity or Situation	Typical noise level nexy to operation with no special measures to reduce noise
Countryside	35 - 45 dB(A)
Conversation	50 - 60 dB(A)
Busy Street	75 - 85 dB(A)
Discharging metal object to metal chutes of general noise level in fabrication shop	85 - 95 dB(A)
Hammering steel or guillotining	95 - 100 dB(A)
Circular sawing of metel	95 - 105 dB(A)
Riviting or punch press	110 dB(A)
Jet aircraft takeoff at 25 meters away	140 dB(A)

2.11.2 Noise Policy

(a)Premier Proteins 2000 will seek to protect staff both from hearing damage caused by exposures to loud noise and from distraction and nuisance caused by noise at lower levels.

(b)All staff are required to comply with this policy by co-operating actively with the noise control programme.

(c)Any work and/or location which is suspected of exposing staff to loud noise will be subject to a formal noise assessment by a technically competent person.

(d)Managers shall check to see if any of their staff are exposed to loud noise, and if so to commission a formal noise assessment.

(e)Any worker identified as being exposed to noise levels in excess of 80 dB(A)* measured/calculated over eight hours (or equivalent for longer working periods) shall be advised of the risk of noise exposures and of the availability of hearing protection.

(f)If any worker is identified as being exposed to noise levels in excess of 85 dB(A)** measured/calculated over eight hours (or equivalent for longer working periods) efforts shall be made to reduce the noise emission, and reduce the time of exposure. If such measures cannot be effected immediately and/or cannot reduce exposures below 85 dB(A)** the employees exposed shall be required to wear hearing protection.

(g)All areas such as plant rooms in which the average noise level is in excess of 85 dB(A)** shall be designated hearing protection zones, and only authorized staff equipped with hearing defenders may work in those areas.

(h)Any work area in which staff report that noise distracts or represents a nuisance shall be subject to an assessment to ascertain whether this is the case, and whether the noise levels may be reduced.

(i)All new equipment and machinery purchased shall require a check on noise emissions (information from the supplier) and quieter machinery selected preferentially.

2.12 Confined Spaces

2.12.1 Confined Spaces Hazards

Definition of confined space

When workers enter what are formally defined as "confined spaces" they are potentially at risk because of the enclosed nature of the spaces. A confined space is defined in law:

"as any place which, by virtue of its enclosed nature creates conditions which give rise to the likelihood of an accident, harm or injury of such a nature as to requiring emergency action due to:

(a)the presence or the reasonably foreseeable presence of:

(i)flammable or explosive atmosphere;

(ii)harmful gas, fume or vapour;

(iii)free flowing solid or an increasing level of liquid;

(iv)excess of oxygen;

(v)excessively high temperature;

(b)lack or reasonably foreseeable lack of oxygen".

It is worth noting that some places may become confined spaces when work is carried out during construction, fabrication, maintenance or subsequent modification. Confined spaces would include:

(a)a construction that becomes a confined space during its manufacture, e.g. a gas or liquid storage tank which a worker has to enter to carry out welding or shot blasting when it is being fabricated;

(b)a paint spray booth or room whilst spray painting is being carried out;

(c)a reel oven or baking tunnel when it has to be entered for maintenance or cleaning.

It must be remembered that there are many different types of confined space, for instance, for safety management purposes, a confined space could be defined as:

(a)relatively large areas where unusual or hazardous operations are carried on or where access and egress is difficult;

(b)areas where there is the potential for flooding, e.g. in drains or sewers;

(c)areas where there may be movement of materials such as grains in large silos.

Significant hazards

Hazards can be considered in two ways: those which exist prior to work commencing, e.g. rusted pipes, depleting oxygen levels, and hazards which arise during the work.

2.12.1.1 Hazards which exist prior to work commencing

The main hazards that make confined spaces potentially dangerous are:

- ·fire or explosion
- ·being overcome by gas, fumes or lack of oxygen
- ·being overcome by an inflow of liquid or solid
- ·being overcome by extremes of heat or cold.
- These hazards are discussed in more detail below.

2.12.1.1.1 Fire and explosion

Fire or explosions in confined spaces can be extremely hazardous. Fire can be caused by combinations of gases or excessively high levels of oxygen being ignited by welding operations, for example. High levels of dust in the enclosed atmosphere can lead to explosions. These are particularly hazardous where means of escape is limited, e.g. narrow exit and entry routes which will only allow one worker to exit at a time and who's progress may be hampered by respiratory and protective equipment such as breathing apparatus.

2.12.1.1.2 Gas, fumes and lack of oxygen

Toxic gases such as hydrogen sulphide can be generated in enclosed atmospheres such as sewers. Entering rusty pipework can expose workers to risk of lack of oxygen. Entering vats that have been cleaned with solvents can cause the worker to pass out and die.

All these incidents have actually occurred and caused injury and death to workers.

2.12.1.1.3 Inflows of liquids or solids

Workers who enter confined spaces such as grain silos could displace materials which, in turn, may move and cause them to become trapped and may result in death by asphyxiation. Work in underground drains, where there is the possibility of flooding, can also pose a hazard. Workers who use solvents, materials or compressed

air during maintenance or cleaning activities can cause materials to move into the space where work is being carried out due to their work activities.

2.12.1.1.4 Extremes of heat or cold

Workers in confined spaces may have to wear protective equipment and carry breathing apparatus. Such equipment can be heavy and, if the ventilation in the underground space, chamber, excavation, etc. is poor, they may be operating in extremely hot and uncomfortable conditions. This can cause great stress or strain to the worker and if the circumstances are excessive enough, the worker may pass out and have to be rescued thus putting the rescuer at risk.

In addition, excessively hot claustrophobic atmospheres could cause the worker to panic and fail to react properly in case of emergency evacuation or procedures.

Extremes of cold can also mean the risk of injury is increased. If the space is such that movements are restricted and cramped this could restrict blood circulation possibly causing frost bite or even hypothermia.

Work in extremes of temperature whether hot or cold will tend to have an adverse effect on worker's judgement, co-ordination and speed of reactions.

2.12.1.1.5 Other hazards from work in confined spaces

(a)Lighting The quality of lighting in confined spaces is very often far from ideal. Glare from high intensity lamps, areas which are veiled by shadow and poorly illuminated areas or corners, are all sources of potential hazard depending on the activity taking place and at the very least can cause strain and discomfort to the workers. Lamps used will generally be suitable for use in flammable atmospheres.

(b)Heavy loads Having to wear heavy protective clothing or carry equipment can cause physical strain and fatigue. In addition, if the clothing is bulky, the worker's dexterity and ability to move comfortably, freely and quickly will all be restrained.

If such clothing must be worn, then it can increase hazards especially if the entrance or exit to the confined area is narrow.

(c)Noise Another potential hazard to consider is noise. This can be caused by use of cleaning or maintenance equipment or perhaps by the effects of reverberation. Not only can this expose workers ears to excessive levels of noise which can have a long term effect on hearing but it could also interfere with the reception of warning signals or sounds (see Module on Noise).

2.12.1.2 Hazards arising during work

Hazards arising during work can result from both or either the use of substances and/or the use of equipment.

2.12.1.2.1 Use of substances

Hazards arising during work involving the use of substances can include:

(a)hazards arising from the operations carried out, e.g. use of paint or adhesives, welding fumes;

(b)ingress of gases, liquids or free-flowing solids such as grain, flour or sugar from adjacent plant which has not been effectively isolated.

2.12.1.2.2 Use of equipment

Hazards arising during work from use of equipment can include equipment used within the confined space or external to the confined space:

(a)within the confined space:

·electrical hazards arising from the use of welding sets, lighting or other portable electrical equipment;

·oxygen depletion caused by burning, welding or grinding;

(b)external to the confined space:

·introduction of exhaust fumes into the confined space from the use of mobile plants;

·introduction of ignition sources into the adjacent area where there might be flammable or combustible materials.

In addition, the worker will be put in danger if safety equipment is provided which is insufficient, inappropriate or faulty or where insufficient training has been given in its safe and proper use.

2.12.2 Code of practice

In line with the 2001 Regulations, the HSA have also produced an approved code of practice (refer to Part I, Chapter 1 para. 1:4.1 which describes the legal status of an ACoP) relating to working in confined spaces. This is entitled "Code of Practice for Working in Confined Spaces".

The code essentially gives additional guidance on how to apply the Regulations to the working environment expanding on what is meant by each of the Regulations. A copy of the code and HSA guidance follows

2.12.3 Confined Spaces Policy

(a)Premier Proteins2000 is committed to providing a safe and comfortable working environment within its building(s), and this applies to working within confined spaces.

(b)Every line manager is responsible for ensuring that this policy is implemented, those managers responsible for premises management and maintenance activities whether by directly employed staff or contractors are primarily responsible for implementation.

(c)Confined spaces are defined as substantially, if not completely, enclosed work areas such as the sewers beneath the building, oil storage tanks accessible when empty through inspection hatches, service ducts etc.

(d)The premises manager shall maintain an audited listing of spaces that fall into the above categorisation.

(e)Where practicable, entry into such spaces shall be prevented and/or minimised by modification to equipment, work arrangements etc. This shall be subject to annual review.

Entry into confined spaces where necessary is prohibited to all staff and contractors, unless they meet the following conditions:

·entry shall be subject to a specific review and assessment, and controlled with a Permit to Work;

·the Permit shall specify the responsible manager considered as the person exercising authority over the confined space entry and working;

·staff engaged in such entry shall be 'competent persons' who have been appropriately informed, instructed and trained and subject to competent supervision;

·entry shall be subject to appropriate precautions concerning communication, defined working practices, the use of appropriate materials and equipment, the furnishing and use of suitable PPE;

·an appropriate contingency plan is in place, suitably resourced, to effect the safe removal of staff from the confined space without putting those effecting the removal at significant risk.

2.13 Hazardous Substances and Chemicals

2.13.1 Hazards from Hazardous Substances and Chemicals

Legal definition of hazardous substances

The Safety, Health and Welfare at Work (Chemical Agents) Regulations 1994 (CHAR), first introduced into Ireland 1994, are aimed at the management of hazardous substances within the workplace. A substance which is hazardous to health is simply any substance or mixture of substances (a preparation) which can damage health. Officially these are defined as:

- ·chemicals with established occupational exposure limits (appearing in the CHAR code of practice)
- ·nuisance substances (e.g. dusts) which also appear in CHAR code of practice
- ·substances classified as dangerous under the Dangerous Substances Acts by reasons of their flammability
- ·substances classified as carcinogens.

In reality, these substances can be toxic or corrosive liquids, organic solvents, metalworking fluids or any woodworking dust in concentrations above 10 mg/m3, and are found in many different working environments. The label on a particular product should indicate what type or types of risks it poses and material safety data sheets should give information regarding occupational exposure limits. Therefore, an orange symbol on the product container showing that the product is very toxic, toxic, harmful, corrosive or irritant will mean that it is covered by CHAR. Note that physical hazards, such as flammable or explosives, and those substances classified as dangerous for the environment, are not included. However, they should be considered in a general risk assessment.

Description of hazardous substances

Typically in the workplace the following might be categorised as hazardous substances:

- ·welding fume resulting from the joining, cutting, removal of metals;
- ·specialist chemicals used in the manufacturing of other chemical agents;
- ·cleaners and degreasers used for removing fuel oil, grease and lubricants from a range of equipment from hand tools to heavy duty machinery;
- ·penetrating fluids for the release of seized or corroded parts, which may or may not contain a propellant which is flammable and has an occupational exposure limit value;

- ·solvents (e.g. for cleaning brushes, white spirit);
- ·specialist paints;
- ·a bleach used in the washroom for general purpose cleaning (it is these types of product which are often overlooked, but which are sometimes the most hazardous).

Once the hazardous substances within the working area have been identified, and ideally an inventory made (e.g. listing products held in the store), the next action is to carry out a risk assessment to estimate the risks involved in handling or being exposed to the particular substance.

2.13.1.1 Significant hazards

There are three routes of exposure by which hazardous substances can cause harm, through ingestion (i.e. swallowing), by inhalation (e.g. breathing in welding fume), and absorption (i.e. penetration through the skin).

2.13.1.1.1 Ingestion

Ingestion involves the swallowing of a liquid or solid substance. It is not likely that a worker will deliberately do this; harm to health would arise through contamination. Therefore to avoid this, good housekeeping, for instance frequent hand washing and eating well away from the working area should be encouraged. The likely affect of swallowing sufficient quantities of substances to cause harm will often be upset to the gastrointestinal tract (e.g. stomach ache, vomiting and diarrhoea).

2.13.1.1.2 Inhalation

Inhalation is probably the major route of exposure to a hazardous substance, and although the form of the substance could be a solid (e.g. wood dust), it is more likely to be a vapour or fume. The vapour or fume could be generated from a specific process where local extraction was either ineffective or altogether absent, or could arise from general background levels within a workshop. Unfortunately the latter is often difficult to detect, since staff within the environment often become sensitised to the odour and thus do not detect it. Immediate respiratory problems (e.g. coughing and wheezing) could result from this route of exposure, which would be exasperated in smokers.

2.13.1.1.3 Absorption

Absorption of a substance normally involves penetration of the skin by a liquid, although absorption through mucous membranes, such as the eye, can occur. The intact skin normally acts as an effective barrier against the penetration of substances,

but a number of known chemicals, including some common solvents (e.g. methanol, carbon tetrachloride, xylene) found in products possibly used in the working area, can be absorbed through the skin. Absorption can also result from contact with unprotected cuts and abrasions where there is the likelihood of the substance entering the bloodstream. The clinical result of skin contact is either local affects like rashes and dermatitis, or more unpleasant symptoms due to systemic actions of the chemicals.

2.13.1.1.4 Symptoms

The symptoms described above relate more to acute contact, although dermatitis may take time to develop. The other, often more important, area to consider is the result of prolonged or repeated contact with the substance over long periods. Lead poisoning is a typical example where prolonged exposure will lead to a blackening of the teeth, asbestos exposure will lead to a variety of respiratory illnesses including lung cancer.

2.13.2 Hazardous Substances and Chemicals Policy

(a)Premier Proteins 2000 accepts that some work activities may involve the use of materials which have the potential for harming health, and accordingly will take steps to reduce such use as far as possible, and to provide safe systems of work for the materials which are essential.

(b)Managers when performing risk assessments on the activities of their department will pay special attention to potential risks from hazardous substances and will seek to eliminate their use or, failing that, source safe, or safer, substitutes or if that is not possible ensure that there is a safe system of work.

(c)Staff are reminded that materials used at work should be treated with respect, care being taken to read warning labels on containers and any written advice provided by managers. Any staff member who feels that the use of a material is causing any health problems should report this to his/her manager as soon as possible.

(d)If there is any suspicion that a staff member may be affected by the use of a material at work, his/her manager may request that s/he visit his/her own GP or make an appointment Premier Proteins 2000 medical advisor.

(e)If there is any suspicion of a problem, further efforts shall be made to reduce risks starting with a process of reassessment by the manager.

2.14 Flammable Materials

2.14.1 Hazards from Flammable Materials

Definition of a flammable material

What exactly is classified as a flammable material is also classified as a dangerous substance under the legislation. This, however, has led to some confusion in that reference to a dangerous substance under the Dangerous Substance Acts 1972 and 1979 only refers to such substances and preparations that are either explosive and/or flammable derivatives of petroleum crude oil. A dangerous substance under CPL (Classification, Packaging, Labelling and Notification Regulations) includes all categories of substances or preparations (refer to Part III, Hazardous Substances), which include substances that are hazardous to reproduction, carcinogenic as well as explosive or flammable. The following are the categories of hazardous substances under CPL which are dealt with in this module. It should be noted however that the primary focus of the module is not on explosive substances, but on flammable substances which may become explosive.

Explosive

Explosive substances and preparations, are solid, liquid, pasty or gelatinous substances and preparations which may react exothermically without atmospheric oxygen thereby quickly evolving gases, and which, under defined test conditions, detonate, quickly deflagrate or upon heating explode when partially confined.

Extremely flammable

Extremely flammable substances and preparations, are liquid substances and preparations having an extremely low flash-point (<0°c) and a low boiling point (<35°c) and gaseous substances and preparations which are flammable in contact with air at ambient temperature and pressure.

Highly flammable

Highly flammable substances and preparations are:

(a)substances and preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy;

(b)solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition;

(c)liquid substances and preparations having a very low flash-point (0°c <21°c); or

(d)substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

Flammable

Flammable substances and preparations, namely, liquid substances and preparations having a low flash-point (21°c <55°c).

General points

This section does not therefore deal with all materials that could be construed as being flammable such as wood or indeed flour which is highly explosive in dust form.

This section addresses the process of assessing the risks that flammable materials pose to people staff, visitors, and others. Of course, in practice, if these risks are reduced this is likely also to reduce the risks of damage to buildings and the contents of buildings and the environment.

The risks posed by flammable materials arise normally due to a combination of factors - the nature of the material itself, whether solid, liquid, or gas, under pressure or at temperature - a source of ignition, (sparks, arcs) and oxygen.

Flammable materials include solvents, lubricants, chemical raw materials and fuels. Some examples of typical flammable materials are given below:

·Liquids like fuel (e.g. petrol, diesel) and solvents in industrial products (such as paints inks and adhesives). These liquids give off a flammable vapour which when mixed with air can ignite and/or 'flash' back to containers and explode.

·Gases such as LPG or methane. These are usually stored under pressure in cylinders and bulk containers. Uncontrolled release can readily ignite.

The sources of ignition are typically electrical short-circuits or gap sparking, cigarettes, portable heaters, sparks and hot surfaces such as cooking equipment.

In addition to their explosive or flammable nature, flammable materials can also present a host of other health risks when respired, ingested or by means of skin contact (e.g. refer to the MSDS on Benzene in Part I, Chapter 2, Appendix 1 and Part III, Hazardous Substances). Such risks are not considered in this module as they are already covered in the Modules on Hazardous Substances and Carcinogens.

2.14.1.1 Significant hazards

2.14.1.1.1 Hazards to workers from flammable materials

There are a number of hazards outlined below to which workers are exposed when flammable materials are present:

- (a)some flammable materials are heavier than air, and if they do leak from their containers they will accumulate in confined areas such as excavations, sewers, drains etc. and be in sufficient quantities to be ignited and cause an explosion or displace oxygen causing asphyxiation. This is compounded by the fact that most such materials are odourless in their natural state and not therefore detectable unless an odour is added to the material;

- (b)the flammable material itself can cause burns once ignited, either directly or by heating surfaces with which the employee is subsequently in contact. Any gas containers stored in the workplace or sited adjacent to where a fire has broken out are liable to explode with the heat and may project pieces of the gas containers considerable distances;

- (c)once ignited there is the hazard of smoke, which on inhalation, can cause both short-term acute effects and longer-term health effects arising from materials which give off toxic fumes;

- (d)some combinations of separately stable materials may create a flammable compound when stored adjacent to one another or mixed together;

- (e)some flammable materials on exposure to air draw in heat and therefore will cause severe frost burns, e.g. LPG;

- (f)if flammable materials do ignite or explode, workers may be injured if the evacuation is not carried out in an orderly fashion

2.14.2 Code of Practice

Flammable materials is one of the few areas for which the Health and Safety Authority have approved Codes of Practice. These are listed below:

·Sections 2, 3, 4 and 6 of the UK Liquefied Petroleum Gas Industry Technical Association Code of Practice, 2 January 1974, in respect of tanks used for the conveyance by road of propane, butane and mixtures of both, subject to certain specified conditions being met relating to the design, construction, testing, examination and marking of tanks. The code also deals with the design of the vehicle. It should be noted that this publication has been subsequently revised in 1994 (now called Code of Practice 2, Safe Handling and Transport of LPG in Bulk by Road) and is only now available in this form. References to this publication will therefore refer to the revised 1994 edition.

·Code of Practice for the storage of LPG Cylinders and Cartridges I.S. 3213: 1987 as amended by Amendment No.1: 1990, dated 20 September 1990 and by Amendment No. 2: 1993, dated 22 September 1993.

·Code of Practice for the Bulk Storage of Liquefied Petroleum Gas - I.S. 3216: 1988, Part 1, General Requirements as amended by Amendment No. 1: 1989, dated 18 October 1989 and by Amendment No. 2: 1996, dated 9 December 1996. This code

refers to LPG installations where there is a fixed pressurised storage vessel of greater than 150 litres.

·Code of Practice for the Bulk Storage of Liquefied Petroleum Gas - I.S. 3216: Part 2: 1989, Installation at Automotive Dispensing Facilities as amended by Amendment No.1: 1994, dated 27 May 1994 and by Amendment No. 2: 1996, dated 9 December 1996.

The requirements of these Codes of Practice are summarised below

FIGURE 1: Safe handling and transport of LPG in bulk by road

Vehicle design

·The location of the engine and auxiliary systems such as the exhaust and air system should be such that a spillage of LPG will not come into contact with hot surfaces or be inducted into the engine.

·The electrical systems should be designed and maintained so as to minimise electrical fires. There is a max of 24 volts on all circuitry and the battery must also be protected. In addition there is a requirement for an isolation switch for all electrical circuits adjacent to the battery. For obvious reasons the cab is not to be fitted with a cigar/cigarette lighter.

·Side guards or under run protection and rear guards should be fitted to the vehicle and the rear bumper should be of a width not less than the tank. The inside face of the bumper should be at least 100 mm from the rear of the tank shell or LPG fittings.

·The driver cab should be constructed of fire resisting materials and the rear windows must be at least 6 mm thick and be either safety or toughened glass and secured both internally and externally. The rear window must not be capable of being opened and there should not be any opening on the roof. The rear of the cab should be at least 100 mm from the storage tank.

·Cab heaters that are operated by other than the vehicle engine must not be fitted unless the cab is to be used for overnight stops. Such heaters, if fitted, are subject to detailed design requirements.

Tank and tank container design and construction

·The loading of both the tank and tank trailer must be such that the gross laden weight of the trailer is not exceeded.

·The design of the tank must take into account the vapour pressures of LPG, potential internal vacuums and the acceleration and de-acceleration forces in accordance with BS 7122.

·A plate should be securely fitted to the tank stating the following in characters that are greater than 5 mm:

·Manufacturers name

·Date of manufacture (pressure test date)

·Design code

·Hydraulic test pressure

·Design pressures range

·Design temperature range

·Water capacity

·Tank serial number

·Inspecting authority mark

·Re-test dates and inspection authority marks

·Where a tank exceeds 7,500 litres it must be fitted with baffle plates and where it exceeds 5,000 litres it shall have a manhole complying to BS 470 and opening in any baffles not less than 460 mm in diameter. Tanks less than 5,000 litres should have an inspection aperture complying with BS 470.

·All tanks, fittings and mountings shall be electrically continuous with the chassis with a resistance of less than 10 ohm.

·The external surface of the tank shall be suitably treated to prevent corrosion.

·All valves and fittings and ancillary equipment to the tank shall be suitable to operate at the designed pressures and temperatures. Such equipment should be protected in the event of a collision or rollover. No barriers should be attached to such equipment. Where appropriate, such ancillary equipment will be fitted with hydrostatic relief valves.

·The valve system used to contain the LPG should remain closed in the event of external damage.

·The tanks should be equipped with a suitable number of safety valves that are capable of discharging as per BS 7122 and start to discharge at a pressure not greater than the design pressure of the tank. The valves must not collect water and in the event of a discharge becoming ignited prevent flame impingement on the tank. The design of the valve should enable it to operate correctly in the event of an impact and should be marked with the nominal set pressure and discharge capacity.

·Tanks shall be fitted with gauges to enable the volume of their contents to be measured. A pressure gauge is also to be fitted.

·Tanks shall be fitted with an earth pin to dissipate any electrostatic charge that may develop during vehicle movement or otherwise.

·The vehicle must be equipped with a mechanism that ensures it cannot be driven away while the transfer hoses are connected or are not stowed.

Testing and examination of road tankers and tank containers

Initial testing

The initial testing is to be carried out by an inspecting authority and on completion of the tests a certificate must be filled out. The tank itself shall be examined to ensure that it complies with any relevant pressure vessel code. The initial testing of the tank container's ISO frame shall conform to BS 3951, Part 2 s.2.3. All seam and butt welds shall be x-ray tested, and other welds shall use crack detection techniques. All steal tanks shall be examined to ensure that they are stress relieved after any hot work. External pipe work must be pressure tested to 36 bar. When finally assembled the tank and pipework, fittings etc. are to be hydraulically tested to 6 bar and witnessed by the independent authority.

Periodic examination and testing

The tanks and pipework must be examined at intervals not exceeding six years. This should be carried out in accordance with a written schedule and must include the periodic replacement of pressure release valves. Prior to inspection the tank etc. shall be purged and made safe for entry. A visual internal examination will be carried out by the Independent Inspecting Authority. The tank must then either be:

·hydraulically tested as per its previous test certificate and a further visual examination; or

·non destructive testing techniques used to examine all attachment welds on the tanks.

Any defects noted or repairs required shall be rectified prior to returning the vehicle to service. Any welding work must be on a hot-work permit basis and the tank properly stress relieved afterwards.

Upon satisfactory completion of the testing and any repairs and retests, the Independent Testing Authority shall issue a test certificate and re stamp the plate on the tanker.

Care should be taken when refilling the tank after testing to avoid flash vaporisation as per Code of Practice 17 (from the LP Gas Association).

Transfer hoses and end fittings need to be examined and tested as per Code of Practice 14 (also from the LP Gas Association).

FIGURE 2: Storage of LPG cylinders and cartridges

·LPG cylinders should be stored outside in a carefully controlled storage area. Where this is not reasonably practicable, they should be stored in a specifically designed building or storage area within a building.

·The cylinders should be stored in a well ventilated area such that should a leak occur it should be diluted to below a safe level within a short distance from the leak.

·They should not be stored below ground in basements or cellars etc. and should be stored on a concrete level surface.

·The storage area should be secured using a mesh like industrial fencing to prevent tampering while allowing air flow.

·Other hazardous substances, flammable liquids etc. should be stored away from the LPG cylinders or separated by at least a two hour fire rated material.

·The cylinders should be stored at a distance specified in the standard for particular quantities of LPG from the boundary wall of the property or the nearest ignition source. For example, where up to 400kg of LPG is stored, a distance of 1m is specified in the I.S. 3213. For quantities of between 150,000kg - 250,000kg, a distance of 15m is specified. This distance can be decreased where fire resisting separation is provided or increased where a greater degree of protection is required.

·Smoking is not allowed in the store area and vehicles (other than a forklift) should be parked away from the store at a similar distance to that specified above or at least 3 m, whichever is the greater. Likewise the storage area should be at least a similar distance to that specified above or at least 2m whichever is the greater from all building openings, pits, cellars and drains.

·Only electrical fittings that are suitable for Zone 2 areas shall be fitted in the storage area.

·The storage area should be clearly marked using appropriate signage that indicates:

·it is an LPG storage area

·the contents of the storage area are flammable

·ignition sources including smoking should be kept away

·the procedures to be followed in the case of fire.
Rubbish, weeds, bushes, dry leaves etc. should be removed from around the storage area for at least 3m.

·All LPG cylinders should be stored with their outlet valves closed and any required protective cap or plug should be in place.

·The cylinders should be upright, but they can be stored on their side if they have no valve on the top.

·All cylinders that are moved in and out of the store should be checked for damage or leakage.

·All stacks (groups of cylinders) should b e checked daily to ensure the stacks are stable and there are no damaged or leaking cylinders.

·Any such defective cylinders shall be removed and appropriately marked and stored in a well ventilated location for return to the supplier.

·Where the nearest building is particularly vulnerable, the separation distance is a minimum of 8m or that specified in the standard, whichever is greater.

Outdoor storage

The following are particular requirements relating to outdoor storage facilities:

·Al least 40% of the designated perimeter must be open or fenced with a mesh like fence.

·Adequate access must be provided as required by the local fire authority.

·The minimum distance to the nearest building and the max stack size is determined by the quantity of LPG onsite. There is also a minimum inter-stack distance of 1.5m. Where these stacks are palletised this is extended to 2.5m. No one stack should exceed 30,000kg and is limited in height.

·LPG cylinders should be stored at a distance in excess of 3m from other bunded flammable liquid storage, compressed gas cylinders including acetylene or bulk LPG vessels < 5000 litres. This is extended to 7.5m for bulk LPG installations in excess of 5000 litres, a liquid oxygen installation or cylinder filling operating area.

·The ground area should be graded or bunded so as spills will be diverted away from the cylinders.

·At least two outward opening exits should be provided from the storage area unless the travel distance is less than 12m, in which instance one exit is sufficient.

·Garage forecourts may use metal cages to contain 1000kg or less LPG, however strict distance limits to breathing pipes, tanks etc. and between cages must be maintained.

·For temporary storage areas such as construction sites 400kg of LPG may be kept in a small lockable cage in the open. Where the 1.5m inter-stack distance cannot be maintained, a fine mesh is to be used to prevent tampering.

·Only for installations of less than 400kg can the cylinders be stored against a wall. At least 1m distance is to be maintained from the wall for inspection purposes.

·A roof or any canopy for weatherproofing should be of lightweight construction. Where the area covered is in excess of 10m x 10m a sprinkler or monitor systems should be installed.

·Less than 400kg LPG may be stored adjacent to a boundary wall with the wall owner's permission and provided it is of a two hour fire resistance and > 2m high. Stacks my not overrun this height.

·Where a residential building wall is being used adjacent to 400kg or less of LPG a fire rating of four hours is required.

Indoor storage

Indoor storage buildings

·The max storage of LPG allowed inside a building is 50,000kg for cartridges only (10,000kg per compartment) or 25,000kg for cylinders and cartridges (5000kg per compartment) where a single storey building with five compartments is specifically built. This limit of 1000kg per compartment is only valid if an automated sprinkler system has been installed.

·The specifically built building must be single storey and be limited to the storage of LPG and be restricted to authorised personnel only. 1/8 of the surface area (or ½ the roof area) should be constricted of light material or mesh.

·Each compartment must be separated by a four hour resistant wall. The external walls must also be 4 hour rated should separation distances be lower than required.

·One exit is allowed where the travel distance inside the building will not exceed 6m.

·The building must have venting at low and high levels (expensive if external walls are four hour rated).

Indoor storage locations

·Where the storage area is not a specifically built building, but rather a specifically built room or enclosure within a building, the limitations on the amounts that can be stored are 1,000kg for cylinders and cartridges and 2,000kg for cartridges only.

·If the pubic have access to the building or it is used for sleeping accommodation, the building should not be more than one storey high, except where small retail amounts of LPG (< 20 kg containers and between < 50 - 70kg on display at any one time) are involved.

·All cylinders should be stored at ground level and at least one wall should be an external wall. Internal walls separating the store from the rest of the building must be four hour fire rated. The store must have adequate ventilation at both high and low levels via the external walls of the building being vented.

·Access should be by means of a door on the external wall, or at least a raised sill of 250mm high across the doorway to act as a vapour seal.

·Explosion relief of 1/8 of the external walls should be provided on the external walls be means of wire mesh etc.

Fire protection

·Adequate fire fighting equipment and portable fire fighting equipment shall be provided to both extinguish LPG fires and prevent fires spreading to the LPG containers.

·Proper account of the fire load should be taken into account. The standard recommends at least one 89B extinguisher where up to 400kg is stored, two for up to 5,000kg and one for every 10,000kg thereafter.

·Fire hoses should be provided where the storages is between 1,000kg to 25,000kg fed off the public mains. For amounts in excess of 25,000kg special provisions will need to be made to provide at least 500 gallons/minute for an hour, bearing in mind that electricity may be cut off during a fire.

·Cylinders stored in a building should be capable of being sprayed with water.

Emergency procedures

·Emergency procedures need to be developed for the following events:

-LPG leakage without fire should involve the removal of any nearby ignition sources and attempts made to stop the leak. Where the leak cannot be stopped it should be removed to the open air away from drains and marked defective for the supplier to take away.

-LPG leakage with fire should involve, if it is safe to do so, closing off the leak and spraying adjacent cylinders with water. If not leave for the fire brigade. If flame impinges on an LPG container evacuate.

-For a fire in the vicinity of LPG containers, in which event action should be taken to divert the fire away from the stored LPG or the containers should be moved out of danger, again only if safe to do so. Where this is not possible they should be sprayed with water.

·Such procedures need to include the raising of the alarm and where appropriate should include a means of contacting the local emergency services.

·Larger LPG stores may come under the Major Accident Hazards Regulations

FIGURE 3: Bulk storage of LPG

The IS 3216 Code of Practice only refers to installations where LPG is stored in fixed pressurised containers of in excess of 150 litres.

LPG vessel location and separation distances

·Such containers must be in the open air, but may be underground or mounded (partially covered) provided that the pressure relief valves and manhole(s) are in the open air.

·The LPG tanks should separated by a minimum distance of 1m or in general ¼ of the sum of the diameter of two adjacent tanks (e.g. two tanks of a diameter of 2m should be (2+2)/4 = 1m apart.). These distances are set out in Table 2 of the Code of Practice. Where there are a number of tanks within the one property, they should be grouped into groupings of no more than six vessels with a combined group capacity of less than 2.25 million litres with separation distance as above, and inter grouping distances of at least 7.5m or as per Table 2, whichever is greater.

·The tanks are to be kept at defined distances from buildings, shrubs, tank groupings and ignition sources (above ground tanks from 2.5m to > 30m) again depending on the size of the installation, tank type, presence of fire walls etc. Again these distances are set out in Table 2 in the Code of Practice. Petrol vehicles should be kept at a minimum of 6m from the vessels or as per Table 2, whichever is the greater. Likewise for diesel vehicles, this minimum distance is lowered to 3m.

·Weeds, shrubs etc. should be removed from around the tanks and sodium chlorate should not be used to kill weeds around the tanks.

·The tanks compound should be designed such that any spillage of LPG should be diverted away from the tanks to a safe evaporation area with low walls (500mm). The evaporation are a should be positioned at least 3m away from the tanks and should be filled with stone chippings to increase the surface area.

·Drains serving the storage area should be water sealed.

·The storage area should not be in a position that is prone to flooding.

·Where the LPG tanks are to be stored near to other flammable materials or indeed other hazardous substances a table sets out the recommended separation distances. LPG vessels should not be within 6m of the bund wall of flammable liquids with a flash point below 22.80C. For flammable liquids with a flash point of between 22.80C to 600C, an LPG vessel should not be stored within 6m of the flammable liquid vessel. For flammable liquids with a flash point in excess of 600C, this can be reduced to 3m. Table 4 of the Code details specific separation distances for liqufied

oxygen of 6m to in excess of 45m, depending on the relative quantities involved. Likewise pressurised chlorine should be kept at least 15m from LPG vessels.

·LPG vessels should not be contained within the bunded enclosure of any other hazardous substance, in particular diesel or heating oil tanks.

·LPG cylinders or cartridges should be kept at least 7.5m from an LPG vessel in excess of 5,000 litres. This may be reduced to 3m where the LPG vessel is less than 5,000 litres, or 1m where the cylinder pressure relief valves vent vertically rather than horizontally. No more than 50kg of LPG can be stored in this way, adjacent to a fixed LPG vessel where the cylinder pressure relief valves vent horizontally. The valves must point away from the vessel or be separated by a fire wall. This storage limit is increased to 300kg for vertically vented cylinders.

·Cylinder fill areas involving the use of LPG or other flammable materials should be at least 10m away from a fixed LPG vessel of 135,000 litres. For larger vessels this should be extended to 15m. This is not required where only a small number of cylinders are being filled as with a fork lift truck fill.

·Where reasonably practical any horizontal fixed LPG vessel should be positioned so as their long axis does not point towards an occupied building.

·Fire walls can be used to decrease separation distances and distances to ignitions sources. The fire walls must be four hour rated (as per BS 476), extend 2m above the top of the LPG vessel (where > 500 litres) and be situated between 1.5 - 3.0m from the nearest point to the vessel. They must also extend outwards so as the travel distance of the nearest ignition source is in excess of the separation distances specified above. If fire walls are used on two sides of a vessel the HSA should be consulted on required separation distances due to the reduced amount of ventilation.

Mechanical design

·The vessels containing LPG should be built in accordance with BS 5500 or equivalent. The following requirements apply (and must be certified as such by a competent person prior to filling and at regular intervals thereafter) and the minimum safe working pressure should be marked on the vessel.

PropaneButanePropane or ButaneMax safe operating pressure14.5 bar4.83 bar14.5Min safe operating pressure0 bar480 millibar absolute480 millibar absoluteMin safe working temperature-400 C-180 C-400 C

·Underground vessels should be located in a concrete or brick lined pit that is well drained and be positioned at least 1m from the side walls. The protective coating on the vessel should be checked prior to back filling and the back fill material should be non abrasive and corrosive.

Electrical equipment

·All electrical equipment and fittings should be in accordance with ETCI guidance on electrical installations in potentially explosive atmospheres if they cannot be located outside the hazardous area. This guidance divides areas into zones dependant on the presence of flammable vapours or not and specifies the equipment rating suitable for each zone:

·Zone 0 - Explosive gas-air mixture is continuously present or present for long periods of time.

·Zone 1 - Explosive gas-air mixture is likely to occur in normal operation.

·Zone 2 - Explosive gas-air mixture is not likely to occur, and if it does it will only exist for a short period of time.

LPG vessel/pipe markings

·The vessels should be marked clearly with the works "Liqufied Petroleum Gas" or "LPG". Where the vessel is designed for butane only, it should be marked "Butane Only". "Highly Flammable" should also be added or indeed the pictorial symbol for flammable materials should be displayed on the vessel.

·Pipes in the installation should be colour coded as per BS 1710 where several different gases are used.

·The operation of manual isolation valves and water drench systems and operating points to remote isolation valves should be clearly marked.

·The path of underground pipes should be marked above ground.

·The following information should be on a plate on the vessel or included in documentation available for inspection. Max fill and max load on supports should also be included in documentation:

-Manufacturers name

-Date of manufacture

-Standard to which it was built

-Reference no

-Max safe working pressure

-Minimum safe working pressure

-Test pressure

-Min safe working temperature

-Water capacity

-Inspection authority

Fittings

·The number of direct connections below the liquid level should be kept to a minimum.

·All vessels should be fitted with.-A pressure relief valve (at least one) in the vapour space that is inspected on a regular basis, that is marked with its start of discharge pressure, certified air capacity and manufacture's name. Such valves should not have an isolation valve unless interlocks are used to ensure other pressure relief valves of sufficient capacity remain in use. Single pressure relief valves should be replaced immediately when being maintained or serviced as their removal will leave the vessel unprotected.

-For vessels in excess of 5,000 litres, properly supported vent pipes must be used in conjunction with the pressure relief valves, that have outlets 1.8m away from the top of the vessel and be at least 3m above ground level to protect the vessel from flames in the event of a discharge igniting.

-A means of draining the vessel that is less than 50mm in diameter and has at least two shut off valves in series at least 0.5m apart. The drain outlet should be at least 6m from any drainage system.

-A maximum level indicator or a contents gauge.

-Filling connection.

-Where required, a means of preventing an excessive vacuum.

-A pressure gauge in the vapour space.

·All liquid or vapour connections to the vessel should have fire safe shut off valve except if used for pressure relief. The intervening pipes should be designed using the same code of practice as the vessel or an equivalent.

·Where the vessel is used for filling operations, in particular by members of the public, or is larger than 225,000 litres then such fill connections should be fitted with an emergency cut off valve that can be operated locally.

·Any LPG pumps or compressors should be located away from the LPG vessel.

·Pipes with LPG above 37mbar within buildings should be avoided or if this is not possible the pipe run should be minimised and be in a well ventilated area.

·Pipes should be routed and positioned so that they are unlikely to be damaged by vehicles etc. and sized so as to minimise any resulting spill.

·Underground pipes must be properly protected against corrosion and loadings, they must also have welded joints (if steel) and have isolation valves at either end of the underground section. The pipe run will be in a concrete sealed pit (and marked), or within another pipe that is sealed and is monitored for leaks. Polyethylene pipes can be used below ground, however above ground they should be as short as possible and sleeved to protect them against UV.

·Where it is likely that liquid LPG may be trapped, piping should be fitted with hydrostatic pressure relief valves that can vent safely in the open air and preferably are not located beneath the vessel. Such valves should also be provided for any flexible piping that is used.

·The entire installation should be electrically earthed (not exceeding 106 ohms).

Vaporisers

·Vaporisers should comply with BS 5500 or a similar pressure vessel code and be fitted with a sufficiently sized pressure relief valve, have an automatic cut off in the event of the heating element overheating, they should have a drain and there should be shut off valves between the vaporiser and the LPG vessel in the liquid and vapour connections.

·The following information should be on a plate on the vaporiser or included in documentation available for inspection:

-Manufacturers name and vaporiser serial number

-The code to which it was made

-Max safe operating pressure

-Max an min safe operating temperature

-The year of manufacture

-Max flow rate at S.T.P.

·Vaporisers should be positioned in a well ventilated position with concrete below and sloped so as any leak of LPG will flow away from the vaporiser and LPG vessel.

·Direct fired or non-explosion proof electrical vaporisers should be positioned at a distance required by other ignition sources. Again this will depend on the size of the installation and tank type, etc. As before, these distances are set out in Table 2 in the Code of Practice.

·Vaporisers should not be kept within a building. If it is required to place a vaporiser within a building, the building should be made of non combustible material and have

a lightweight roof and not be used for any other purpose other than the distribution of LPG.

·Depending on the capacity of the vaporiser, it should be positioned at a set distance from property boundaries or important buildings (as per Table 5 of the Code of Practice)

Security

·A perimeter fence (non wooden) that is 1.8m high should surround the LPG installation up to 5,000 litres and be at a distance of 1m from the vessels, pumps etc. For > 5,000 litres this is extended to 1.5m.

·At least one exit should be provided. Where the travel distance is in excess of 6m to the exit within the compound, an additional exit is required on a different side of the compound away from the existing exit. Such exits must open outward and not be self locking.

·Where there is no or to limited or no surveillance and the premises is prone to trespassers or indeed there is free access the public, the perimeter fence will require an additional surrounding security fence. There also may be a requirement to provide crash protection barriers.

Fire precautions

·The installation should be designed so as to allow easy access by the fire brigade, have proper facilities for fire fighting including water supplies and fire fighting equipment.

·There must be a provision for water discharge of sufficient quantities (10 litres/m2/min for 1 hour) onto the vessel(s) and supports, in the event of fire, to ensure they are kept cool. Such water protection may also be required for underground or mounded tanks at the manhole, at unprotected areas and at the LPG loading/off loading bay. The control of water flow must be achieved from a safe position and the surrounding area must be properly drained.

·This water discharge system must be fixed for installations in excess of 15,750 litres. For smaller installations, merely having a water supply close by is sufficient unless the HSA or local Fire Brigade or indeed an internal risk assessment, require otherwise. Where the installation exceeds 112,500 litres the system must be fully automated but not completely reliant on internal vessel pressure sensors.

·Sufficient quantities of fire extinguishers (as per I.S. 291) and fire hoses (as per B.S. 5306 Part 1) should be provided around the installation to extinguish local fires. A fire hose should be provided for all fixed installations in excess of 2,500 litres. Below 2,500 litres, two nine litre water extinguishers can be provided instead of a fire hose.

·In addition the installation must have at least two extinguishers that are capable of extinguishing an LPG fire and have a rating in excess of 223B.

·Staff should be trained in emergency procedures and in the use of fire fighting equipment.

·Notices should be displayed around the LPG area indicating the emergency procedures.

·Access to the LPG area should be kept clear at all times for the Fire Brigade.

Loading/unloading facilities

·Personnel involved in the loading/unloading should be properly trained and have clear written instructions of their tasks.

·Where practicable a minimum of two people should be involved in any loading/unloading operation.

·A responsible person must check for overfilling and that the correct vessel is being filled.

·Where road tankers are being loaded/unloaded, the vehicle should be on a flat surface that is sloped to allow any spillage to be diverted away form the installation and tanker. The vehicle should be chocked and drive away protection devices should be used. In addition where the vehicle engine is running, it must be fitted with an emergency cut off outside the cab.

·Where the hose crosses a public footpath a warning sign should be placed on either side of the hose stating that LPG transfer is taking place and No Smoking of Naked Flames.

·Prior to connecting any hoses to a tanker the tank should be electrically bonded to discharge any static electricity. The electrical connection can only be removed after all LPG hoses have been removed.

·Rail tankers should be secured from movement prior to beginning a fill and any additional protection from pull away incidents should be used.

Maintenance

·The installation should be maintained as recommended by a competent engineer.

·Maintenance is the include the maintenance of fire fighting equipment and sensors (refer to Part III, on Fire).

·All maintenance should be recorded, detailing any defects found, remedial work required and methods of testing or inspection used. Such a report must also include:

-Max safe working pressure

-Minimum safe working pressure

-Min safe working temperature

-Max permissible load on supports

-Date of next examination.

·The vessels, their supports, fixing and foundations should be examined at intervals determined by a competent person.

·Underground or mounded vessels need to be tested for corrosion.

·Underground pipes should be integrity tested at least every 10 years.

·All pressure relief valves should be inspected on a regular basis.

·All electrical equipment within the zoned area should be regularly inspected by a competent person, at least once every year.

·Uniquely identifiable flexible hosing must be hydraulically tested every year and where required, fitted with hydrostatic relief valves or similar. They should also be checked periodically for electrical continuity. The hydraulic test and electrical test should be recorded.

·All remedial work should be done in accordance with the original design standard and where such work affects the integrity of the plant it must be certified by a competent person stating its operating limits

Storage of LPG at automotive refuelling facilities

All provisions of IS 3216 Part 1 (refer to Figure 3) apply to automotive dispensing facilities. Automotive LPG is essentially propane defined in B.S. 4250 therefore vessels etc., should be designed accordingly;

LPG dispensers

·All dispensers should be a minimum of 3m from the LPG vessels, as should the vehicle tank. Dispensers should be at least 4.5m from any important buildings, sources of ignition, property lines etc.

·Dispensing equipment should comply with the LP Gas Code of Practice 19 "Liquid Measuring Systems for LPG" and maintained as such, be suitable for the grade of LPG it has to dispense, have a dead man's handle, have hydrostatic relief valves where the flexible hosing may become hydraulically locked and breakaway coupling to facilitate a vehicle driving off while still connected.

·Dispenser measuring accuracy should be checked periodically.

·Filling instructions must be situated close to the dispensing unit.

·Delivery hoses should meet the requirements of the LP Gas Code of Practice 14 "Hoses for the Transfer of LPG in Bulk. Installation, Inspection, Testing and Maintenance".

·Dispenser hoses should be electrically continuous and connected to earth.

·Dispensers must have an electrical master switch that enables them to be effectively electrically isolated in the event of an emergency.

·The fill nozzle should prevent discharge other than when it is connected to the vehicle and maintain a gas tight seal without continuous effort on the part of the operator. When the nozzle is removed from the vehicle the amount of LPG escaping should be minimised.

·The dispenser should be suitably protected to prevent outside interference including a means of locking the nozzle to the dispenser.

·Warning signage (lettering 50mm or more) should indicate the highly flammable nature of LPG, to switch off engine, no smoking, do not fill above 80% level, apply hand brake.

·Retail premises also require a public address system, a means of ensuring hoses are not run over, a pump isolation switch for each dispenser and a master electrical switch for each dispenser (to be in the off position when premises are closed).

·The bulk delivery of LPG should not occur at the same time as a delivery of petrol or diesel.

2.14.3 Flammable Material Policy

- Premier Proteins 2000 accepts that some work activities may involve the use of Flamable materials which have the potential for harming health, and accordingly will take steps to reduce such use as far as possible, and to provide safe systems of work for the materials which are essential.
- Managers when performing risk assessments on the activities of their department will pay special attention to potential risks from Flammable materials/ substances and will seek to eliminate their use or, failing that, source safe, or safer, substitutes or if that is not possible ensure that there is a safe system of work.
- Managers when performing risk assessments on the activities involving flammable materials in their department will pay special attention sources of ignition and eliminate before work commences. **Where elimination/ separation of ignition source and flammable material is not possible work will not commence**
- Staff are reminded that Flammable materials used at work should be treated with respect, care being taken to read warning labels on containers and any written advice provided by managers.
- There is a no Smoking policy when work at or near flammable materials
- All drivers have been instructed in the correct methods of filling their forklift trucks
- Instructions on how to operate the diesel dispenser are placed on either side of the dispenser.
- During the hours of 18:00 to 08:00 the dispenser nozzle is locked
- Appropriate fire fighting equipment will be located 10m from the diesel storage tank.

2.15 Scaffolding and Working at Height

2.15.1 Hazards from

1. What Are the Hazards?

Working at height leads to a risk of falling and subsequent injury unless an appropriate and adequate working platform is available. There is also a risk of materials or equipment falling and causing injury at levels below the working level.

The provision, maintenance and adaptation of safe working platforms to allow the safe carrying out of operations at a height is a common feature of construction and maintenance operations.

Approaches that allow work to be carried out safely at heights can be divided into three broad categories:

1. Erection of a fixed, stable, guarded working platform at the appropriate level(s) for the work being undertaken. This approach tends to be used in the case of major or multiple operations to building facades or other large areas.

2. Use of mobile elevated work platforms, scissors lifts and other specialist high reach access equipment. This approach is favoured in situations where limited access for clearly defined tasks is required.

3. Specialist access using steeplejack, abseiling or similar techniques.

The use of harnesses, boatswains, chairs abseiling equipment and other methods of allowing individuals to work at height using personal protective equipment are dealt with in the Specialist PPE Module.

The most common type of scaffold used in Ireland is proprietary system scaffold consisting of standardised prefabricated components. This Module makes recommendations in relation to this type of scaffold.

BS5973 Code of Practice for Access & Working Platforms in Steel gives comprehensive recommendations and guidance on tube-and-fitting scaffold and special scaffolds.

The Code of Practice for access and working scaffolds published by the HSA 1999 is the effective guidance to guard legal compliance and came into effect on 1 June 1999

2.15.2 Scaffolding and working at Height Policy

(a)Premier Proteins 2000 is committed to providing a safe and healthy workplace, and this includes the provision and maintenance of safe and appropriate working platforms.

(c)The manager supervisor responsible for the work shall ensure that for all occasions where scaffolding or working at heights are necessary that adequate measures to protect employees, others at work and members of the public from the risks associated with scaffolding.

(d)The manager supervisor responsible for the work shall ensure that for any and all occasions where scaffolding or working at heights are necessary that only competent persons are engaged in the erection, maintenance and striking of scaffold or the operation of access equipment.

(e)Premier Proteins 2000 is committed to compliance with all relevant health and safety legislation including the Safety Health & Welfare at Work (Construction) Regulations 1995 and relevant Codes of Practice and guidelines.

(f) Premier Proteins 2000 is committed to providing adequate and appropriate resources for training and consultation with employees and to implement the policy.

2.16Biological Agents

2.16.1Hazards from Biological Agents

1:1.1 Legal definition of a biological agent

The Safety, Health and Welfare at Work (Biological Agents) Regulations 1994 (BAR), defines a biological agent as "a micro-organism, including those that have been genetically modified, a cell culture and a human endoparasite, which may be able to provoke any infection, allergy or toxicity".

1:1.2 Different types of biological agent

The Regulations further classify various types of biological agents according to the degree of risk they pose to humans and the degree to which they can spread and whether or not there is an effective vaccine or treatment available.

Group 1	is unlikely to cause human disease
Group 2	can cause human disease, might be a hazard to employees, unlikely to spread to the community, and for which there is an effective prophylaxis or treatment available.
Group 3	. can cause severe human disease, presents a serious risk to employees, may present a risk of spreading to the community, and for which there is usually an effective prophylaxis or treatment available
Group 4	. causes severe human disease, is a serious risk to employees, may present a high risk of spreading to the community, and for which there is no effective prophylaxis or treatment available

.

Broadly speaking a biological agent is either:

·bacteria

·viruses

·parasites

·fungi

·other microbiological entities including prions which are now linked to causing new variant Creutzfeld-Jakob Disease (CJD) in humans. (Bovine Spongiform Encephalopathy (BSE), commonly known as mad cow disease, in humans).

It should be noted that biological agents, being hazardous to the health could be considered to fall within the definition of a dangerous or hazardous substance, however a substance is defined as "a chemical element and its compounds in the natural state or obtained by any production process". This definition therefore, excludes biological agents from the scope of the legislation relating to dangerous

substances or preparations; however as we will see, the requirements of dangerous substances and biological agents from a legislative viewpoint are very similar.

1:2 Significant hazards

There are three routes of exposure by which a biological agent can cause harm, through ingestion (i.e. swallowing), by inhalation (e.g. breathing in the flu virus), and absorption (i.e. penetration through the skin or an open wound).

1:2.1 Ingestion

Ingestion involves the swallowing of a liquid or solid substance. While it is unlikely that an employee will place directly in his/her mouth a spoonful of a biological agent, when eating food that has previously been contaminated (say with Clostridium botulinum the causative agent of botulism) or by observing poor basic hygiene requirements when working with a biological agent (not washing hands prior to eating or smoking in the presence of a biological agent) a biological agent can enter the mouth and thus gain entry to the digestive tract. While some agents will be killed by the acid in the stomach, particular agents are equipped to survive in such circumstances. Entamoeba histolytica for example will cause amoebic dysentery while taenia solium causes tape worms in humans and can grow up to several metres in length. Clostridium botulinum on the other hand simply produces a toxin which when ingested can be fatal.

1:2.2 Inhalation

Inhalation is a major route of exposure to a biological agent. The common flu virus in all its shapes and forms will enter the respiratory tract and go straight to its site of infection. Another such disease known as legionnaires disease also enters the body through the lungs in vapour mists from showers.

1:2.3 Absorption

Absorption of a biological agent will normally involve penetration of the skin by a contaminated needle or the agent entering the body through a wound. MRSA (Methlacylin resistant staphylococcus aureus) is a bacteria that infects wounds and is particularly difficult to treat as it is immune to methacylin, the normal drug used to treat staphylococcus aureus, and can cause death. Such infection can be caused by direct contact with the biological agent through the environment or a particular surface or object. HIV and Hepatitis viruses are also transmitted through infected blood or needles.

1:3 Who is at risk?

There are basically five types of people that may be exposed to biological agents:

1.Those that work with biological agents periodically as part of their normal day to day work activities. Such work is generally in the research area in laboratory conditions. There are however a variety of methods used to process waste or to treat

contaminated soil that will also involve working with or being exposed to biological agents.

2.Those that work with patients or animals who are infected with biological agents and therefore risk infection.

3.Those that are at risk to an incident by the nature of their work which may involve infection with a biological agent such as the stabbing of a prison officer or bus driver with an infected needle.

4.Visitors, contractors etc., who visit the workplace and are unaware of the hazards and appropriate precautions to take.

5.Other third parties that may be exposed to an agent as a result of an uncontrolled release of an agent into the atmosphere

2.16.2 Biological Agents Policy

- Premier Proteins (2000) Ltd. accepts that the nature of the activity involves the handling , processing and storage of Specified Risk Material, Animal By Product, casualty animals and low risk material as defined by the department of agriculture, food and rural development. While the risk of BSE infectivity is so low as to be negligible Premier Proteins (2000) Ltd. will nevertheless take all practicable steps to ensure that exposure to staff is kept to a minimum. The material processed at Premier Proteins (2000) Ltd. may be highly infectious in terms of other bacterial and viruses and as such a high standard of occupational and personal hygiene are required from all concerned

- Premier Proteins (2000) Ltd. will seek to protect staff , contractors and visitors form infection caused by material handled
- All staff, contractors and visitor are require to comply with company rules regarding hygiene and the use of issued PPE
- All worker identified as been at particular risk will be advised of the risk and measure necessary to avoid the hazard of infection
- Each supervisor/ manager will carry out a risk assessment to identify the main sources of infection and those who are
    1. Regularly at risk,
    2. Intermittently at risk and
    3. May be at risk in unusual circumstances.

2.17 Bullying

2.17.1 Introduction

Bullying in the workplace constitutes a real threat to the safety, health and welfare of people in the workplace. As it can arise in any situation where people are working together an effective Bullying Prevention Policy will be implemented as a precautionary measure and deterrent in this workplace. The key objective of this policy is to communicate clearly, so as to avoid any doubt, that instances of bullying will not be tolerated and that precautionary measures are in place both to prevent the occurrence of bullying and to deal appropriately with any cases that might arise.

Bullying can be perpetrated by a person in a position of authority or by a work colleague against a person at any level in the workplace and it can be carried out by an individual or by a group. Bullying can also be perpetrated against an employee by the client, contractor, customer or other business contact of the employer.. The Bullying Prevention Policy will be brought to the attention of all employees as well as to the attention of regular clients, contractors or other business contacts of the employer, with whom the employees will interface.

Where bullying is occurring in the workplace it will, in general, result in an increased level of anxiety and stress for the victims This may lead to an inability to concentrate causing errors and accidents and will result in health problems. Such health problems will result in increased blood pressure and cardiovascular disease in the long term. Behavioural changes may also occur such as an increased level of smoking or drinking perhaps resulting in an increased level of absenteeism in work.

2.17.2 Definition

Workplace bullying is repeated inappropriate behaviour, direct or indirect, whether verbal, physical or otherwise, conducted by one or more persons against another or others, at the place of work and/or in the course of employment, which could reasonably be regarded as undermining the individual's right to dignity at work. An isolated incident of the behaviour described in this definition may be an affront to dignity at work but as a once off incident is not considered to be bullying.

(As defined in the Report of the Task Force on the Prevention of Workplace Bullying – published by the Stationery Office, March 2001)

2.17.3 Anti -Bullying / Harassment Policy

- Premier Proteins (2000) Ltd. is committed to providing all its employees with a work place environment that is free from Bullying / Harassment.
- All employees will be expected to comply with this policy.
- Management will take appropriate steps to avoid the occurrence of Bullying / Harassment.
- A Risk Assessment of the presence of specific behaviours and circumstances that can result in Bullying / Harassment will be carried out and recorded.
- All complaints of Bullying / Harassment received will be treated seriously, confidentially, with sensitivity and as soon as is practicable
- This policy applies to employees both in the work place and at work associated events such as meeting, conferences and work related social events whether on the premises or off site.
- This policy applies to Bullying / Harassment by clients, customers, contractors or any other business contact to which an employee might be reasonably be expected to come into contact during the course of their employment
- Appropriate disciplinary action , including dismissal for serious offences, will be taken against any employee who violates this policy.

- Bullying / Harassment by non employees such as client, contractors and business contacts will not be tolerated and may lead to termination of contracts or suspension of services, or the exclusion from the premises, or the imposition of other sanction (as appropriate)
- In implementing this policy, management will make all employees and regular contractors aware of its existence
- Training and instruction will be provided to
- Make employees aware of the hazards of Bullying / Harassment
- Provide information of appropriate behaviour
- Raise awareness among managers, supervisors and those in positions of authority
- Each employee will be made aware of his/her responsibility not to place the health , safety and welfare of a colleague at risk by engaging in Bullying / Harassment
- Each manager supervisor or person in a position of authority will be made aware of his/her responsibilities both not to place the health , safety and welfare of a colleague at risk by engaging in Bullying / Harassment and to take appropriate measure to prevent its occurrence
- Each manager supervisor or person in a position of authority will be made aware of action to take if they become aware of an incident of Bullying / Harassment either by direct complaint or otherwise.
- Any Employee who make a complaint or who gives evidence in proceeding will not be victimised. Regular checks will be made by the investigator to ensure this. Retaliation of any kind is a serious disciplinary offence.
- It is at the discretion of each employee to decide what behaviour is unwelcome irrespective of the attitude of other to the matter
- If a complaint is found to be malicious then appropriate disciplinary action up to and including dismissal will be imposed.

2.17.4 Informal Procedure

While in no way diminishing the issue or the effects on individuals, an informal approach can often resolve matters. As a general rule therefore, an attempt should be made to address an allegation of bullying as informally as possible by means of an agreed informal procedure. The objective of this approach is to resolve the difficulty with the minimum of conflict and stress for the individuals involved.

Recommended in the Report of the Task Force on the Prevention of Workplace Bullying-published by the Stationery Office, March 2001

2.17.4.1 Any employee who believes he or she is being bullied should explain clearly to the alleged perpetrator(s) that the behaviour in question is unacceptable. In circumstances where the complainant finds it difficult to approach the alleged perpetrator(s) directly, he or she should seek help and advice, on a strictly confidential basis, from a contact person. A contact person could, for example, be one of the following:

- a work colleague;
- a supervisor or line manager;
- any manager in the workplace;
- human resource/personnel officer;
- employee/trade union representative.

2.17.4.2 In this situation the contact person should listen patiently, be supportive and discuss the various options open to the employee concerned.

2.17.4.3 Having consulted with the contact person, the complainant may request the assistance of the contact person in raising the issue with the alleged perpetrator(s). In this situation the approach of the contact person should be by way of a confidential, non-confrontational discussion with a view to resolving the issue in an informal low-key manner.

2.17.4.4 A complainant may decide, for whatever reason, to bypass the informal procedure. Choosing not to use the informal procedure should not reflect negatively on a complainant in the formal procedure.

2.17.5 Formal Procedure

If an informal approach is inappropriate or if after the informal stage, the bullying persists, the following formal procedures should be invoked: -

2.17.5.1 The complainant should make a formal complaint in writing to his/her immediate supervisor, or if preferred, any member of management. The complaint should be confined to precise details of actual incidents of bullying.

2.17.5.2 The alleged perpetrator(s) should be notified in writing that an allegation of bullying has been made against them. They should be given a copy of the complainant's statement and advised that they shall be afforded a fair opportunity to respond to the allegation(s).

2.17.5.3 The complaint should be subject to an initial examination by a designated member of management, who can be considered impartial, with a view to determining an appropriate course of action. An appropriate course of action at this stage, for example, could be exploring a mediated solution or a view that the issue can be resolved informally. Should either of these approaches be deemed inappropriate or inconclusive, a formal investigation of the complaint should take place with a view to determining the facts and the credibility or otherwise of the allegation(s).

2.17.5.4 **Investigation** The investigation should be conducted by either a designated member or members of management or, if deemed appropriate, an agreed third party. The investigation should be conducted thoroughly, objectively, with sensitivity, utmost confidentiality, and with due respect for the rights of both the complainant and the alleged perpetrator

2.17.5.5 The investigator(s) should meet with the complainant and alleged perpetrator(s) and any witnesses or relevant persons on an individual confidential basis with a view to establishing the facts surrounding the allegation(s). Both the complainant and alleged perpetrator(s) may be accompanied by a work colleague or employee/trade union representative if so desired.

2.17.5.6 Every effort should be made to carry out and complete the investigation as quickly as possible and preferably within an agreed timeframe. On completion of the investigation, the investigator(s) should submit a written report to management containing the findings of the investigation.

2.17.5.7 Both parties should be given the opportunity to comment on the findings before any action is decided upon by management.

2.17.5.8 The complainant and the alleged perpetrator(s) should be informed in writing of the findings of the investigation.

2.17.5.9

2.17.5.10 **Outcome**. Should management decide that the complaint is well founded, the alleged perpetrator(s) should be given a formal interview to determine an appropriate course of action. Such action could, for example, involve counseling and/or monitoring or progressing the issue through the disciplinary and grievance procedure of the employment.

2.17.5.11 If either party is unhappy with the outcome of the investigation, the issue may be processed through the normal industrial relations mechanisms.

2.17.6 CONFIDENTIALITY

All individuals involved in the procedures referred to above should maintain absolute confidentiality on the subject.

2.17.7 TRAINING/AWARENESS

It is considered that all personnel who have a role in either the informal or formal procedure - e.g. designated members of management, worker representatives, union representatives etc – should be made aware of appropriate policies and procedures which should, if possible, include appropriate training.

2.17.8 Bullying / harassment Risk Assessment

The following is a written assessment of the presence in the work place of specific behaviour and circumstances that may result in bullying / harassment .

Behaviour Which may result in bullying (Hazards)

	Presence on site	Action
Teasing/Name Calling/ Personal Insults	Not Known to Occur. Friendly Banter exchanged between Employee from time to time	Employees should be made aware that this good natured banter can be hurtful if it is made overly personal or critical
Persistent criticism/sarcasm	Not known to occur	
Public / private humiliation	Not known to occur	
Shouting in public or private	Not known to occur	
Sneering	Not known to occur	
Instantaneous Rage (over trivial matter)	Not known to occur	
Unfair delegation of duties / responsibilities	Not known to occur	
Exclusion and isolation	Not known to occur	
Setting impossible deadlines	Not known to occur	
Unnecessary work interference	Not known to occur	
Making it difficult for staff to get access to necessary information	Not known to occur	
Aggression	Not known to occur	
Not giving credit for work contribution	Not known to occur	
Continuous refusal of reasonable request without good reason	Not known to occur	
Intimidation	Not known to occur	
Sexual Gestures	Not known to occur	
Displaying suggestive / pornographic material (e.g.	Not known to occur	

pictures/calendars)		
Unwelcome sexual comments or jokes	Not known to occur	
Unwelcome physical contact (pinching or unnecessary contact)	Not known to occur	

Circumstances which may lead to bullying / harassment (risks)

New Employee (temporary Employee)	Time to time	New / temporary employees to be made aware of bullying / harassment policy and procedure (induction booklet)
Large work force	No	
Organizational change 1. New Managers 2. Change of ownership 3. Reorganization 4. Introduction of new technology	 1.Time to time 2. Not foreseen 3. Not Foreseen 4. Time to time	
Management of relationships (INFO- bullying / harassment is more likely to occur in workplaces lacking an effective human resource management system that respects each person individually and monitors and supports work relationships)	Yes. There is no dedicated HRM department. All staff management is done at a local level.	Management and staff work closely on a day to day basis intimate
Gender Imbalance	Yes.	Females(3)work together in main office and most males(~25) work in factory area. Contact between the two is limited and rarely is one gender isolated among the other.
Age Imbalance	No	

Interface with public 1. Weighbridge 2. Reception 3. Telephone (esp. complaints)	 1. Yes 2. Yes 3. Yes	Staff who deal with public will be advise of what is considered unacceptable behaviour
Inter-departmental conflict	Yes	Will naturally arise from time to time but issues are discussed / solved at regular management meeting
Conflict with external Contractors / consultants	Not known to occur	

2.18 Smoking

2.18.1 Purpose

Second-hand smoke, also known as Environmental Tobacco Smoke (ETS) or passive smoke is a cause of disease, including lung cancer and heart disease, in third parties. Neither the simple separation of smokers and nonsmokers within the same air space, nor the provision of ventilation, can eliminate exposure to second-hand smoke and the consequent health effects of such exposure. This policy has been developed to protect all employees,
service users, customers and visitors from exposure to second-hand smoke, to ensure compliance with legal obligations and to ensure a safe working environment.

2.18.2 Policy

It is the policy of Premier Proteins (2000) Ltd. that all of its workplaces are smoke-free and that all employees have a right to work in a smoke-free environment. Smoking is prohibited throughout the workplace with no exceptions. This policy applies to all employees, consultants, contractors, customers and visitors.

2.18.3 Implementation

Overall responsibility for policy implementation rests with the Manager or Safety coordinator. All staff have an obligation to adhere to, and facilitate the implementation of this policy.
The Manager or Safety coordinator shall inform all existing employees, consultants and contractors of the policy and their role in the implementation and monitoring of the policy. All new and prospective employees, consultants and contractors shall notified of the policy on recruitment/induction .

2.18.4 Policy Regarding Infringements

Infringements by staff will be dealt with, in the first instance, under employee disciplinary procedures. Employees, consultants, contractors, customers and visitors who contravene the law prohibiting smoking in the workplace are also liable to prosecution.

Section 3

3 Hazard Identification and Risk assessment

The safety Statement is based on the identification of hazards and an assessment of the risks to safety and health at work.

- A hazard is a substance, operation, machine or process with the potential to cause harm.
- A risk relates to the likelihood of harm being caused in the circumstances of use or operation.
- The risk Rating has been calculated by multiplying the severity of the hazard on a scale of 1 to 6 by the likelihood of an accident occurring on a scale of 1 to 6. Therefor a risk rating of 1 mean a very low risk whereas a risk rating off 36 (6X6) mean a very dangerous situation (high risk)

This section safety statement will summaries risk assessment and details of any actions taken. An initial Risk assessment has been carried out and is detailed in this section . As new safety issues arise or are brought to the attention of the management a risk assessment will be carried out and the safety statement updated.

All employee are encouraged to regularly inspect this section of the safety statement to keep themselves abreast of changes and additions to risk assessments and corrective actions.