



Safety Manual

OxiFresh



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Policy Statement

To all employees:

The personal safety and health of each employee of this company is of primary importance. The prevention of occupational-induced injuries and illnesses is of such consequence that it will be given precedence over operating productivity whenever necessary. Management will provide all mechanical and physical facilities required for personal safety and health in keeping with the highest standards.

We will maintain a safety and health program conforming with the best practices of organizations of this type. This program must embody the proper attitudes toward injury and illness prevention on the part of both supervisors and employees to be successful. It also requires cooperation in all safety and health matters, not only between supervisors and employees, but also between employees' fellow workers. Only through such a cooperative effort can a safety record in the best interest of all be established and preserved.

Our safety and health program will include:

- Providing mechanical and physical safeguards to the maximum extent that is possible.
- Conducting a program of safety and health inspections to find and eliminate unsafe working conditions or practices, to control health hazards, and to comply fully with the safety and health standards for every job.
- Training all employees in good safety and health practices.
- Providing necessary personal protective equipment and instructions for its use and care.
- Developing and enforcing safety and health rules and requiring that employees cooperate with these rules as a condition of employment.
- Investigating promptly and thoroughly, every accident to find out the cause and to correct the problem so that it won't happen again.

We recognize that the responsibility for safety and health is shared:

- Management is responsible, and accepts the responsibility for leadership of the safety and health program, for its effectiveness and improvement, and for providing the safeguards required to ensure safe conditions.
- Supervisors are responsible for developing the proper attitudes toward safety and health in themselves and in those they supervise, and for ensuring that all operations are performed with the utmost regard for the safety and health of all personnel involved, including themselves.
- Employees are responsible for wholehearted, genuine cooperation with all aspects of the safety and health program, including compliance with all rules and regulations, and for continuously practicing safety while performing their duties.

Manager

Managers' and Supervisors' Responsibility

The managers and supervisors are the backbone of our company. The methods in which they direct the activities of the employees can have a positive effect in the control of accident as well as production.

Our managers and supervisors will be held accountable for carrying out the following responsibilities:

- Maintain a safe working environment by finding and controlling unsafe work conditions practices and procedures.
- Indoctrinate all employees (new hires prior to commencing work) in the following:
 - A. Company safety program.
 - B. Company safety policy statement and safety rules.
 - C. Accident reporting procedures.
 - D. Reporting procedures for unsafe conditions.
- Safety training and education. This should include instructing each employee in the recognition and avoidance of unsafe conditions, and also the regulations applicable to his/her work environment to control or eliminate any hazards or other exposure to illness or injury.
- Enforce all safety rules and policies. Watch your workers, and correct any unsafe work practices you observe. Also, set a good example for all your workers. Conduct yourself as a professional at all times. Your attitude will be observed by your employees.
- Conduct safety inspections as required. Report and correct any unsafe condition.
- Provide proper and safe tools/equipment to include personal protective equipment as necessary. Ensure that all guards are in place and fully functional.
- Report all accidents, no matter how minor. Conduct accident investigations and determine the root cause. Any unsafe conditions should be corrected as soon as possible.

All managers and supervisors will openly support the safety program. The workers will view the program through your eyes. If you are positive about the program, you'll receive total cooperation from the workers. If you have a negative approach you can destroy your company's safety program.

Employee Responsibility

Each employee has the responsibility for their own safety, and the safety of their fellow employees as well. It is only by each employee becoming familiar with the hazards of their job and doing what is necessary to insure their safety, that our company can achieve the safe working conditions deserved by all its members.

Our company expects each employee, regardless of their position within the organization, to cooperate in every respect with the company's safety program. Therefore, we require each employee to:

- Understand and practice safety rules applying to his/her job so he or she does not endanger himself/herself, fellow associates or customers.
- Report all work related injuries, illnesses, and incidences to supervisor immediately, no matter how minor they are.
- Wear the proper personal protective equipment assigned. Maintain equipment to ensure proper working condition. Report any problems or damage to supervisor immediately.
- Use only equipment, tools, and machinery for which he or she is qualified and authorized to operate.
- Report any unsafe conditions and/or procedures which may cause injury or illness to supervisor immediately.

General Safety Rules

It is our policy that everything possible will be done to protect employees, customers and visitors from accidents. Safety is a cooperative undertaking requiring participation by every employee. Failure by any employee to comply with safety rules will be grounds for corrective discipline. Supervisors shall insist that safety rules and practices be observed and take action if necessary.

To carry out this policy, employees shall:

- Report unsafe conditions and equipment to your supervisor or safety coordinator.
- Report all accidents, injuries, and illnesses to your supervisor or safety coordinator immediately.
- The use or possession of intoxicating beverages, drugs, unauthorized firearms or other weapons on the job is forbidden and could result in immediate dismissal.
- Horseplay, scuffling, and other acts which tend to have an adverse influence on the safety or well-being of the employees are prohibited.
- Means of egress shall be kept unobstructed, well lighted and unlocked during working hours.
- In the event of fire, alert others to the situation (sound alarm where available) and evacuate.
- Upon hearing fire alarm, stop work and proceed to the nearest clear exit. Gather at the designated location.
- Only trained workers may attempt to respond to a fire or other emergency.
- Stairways should be kept clear of items that can be tripped over and all areas under stairways that are egress routes should not be used to store combustibles.
- Materials and equipment will not be stored against doors or exits, fire sprinkler risers, or fire extinguisher stations.
- Aisles must be kept clear at all times.
- Work areas should be maintained in a neat, orderly manner; trash and refuse are to be thrown in proper waste containers.
- Always use the proper lifting technique, i.e., bend your knees, grasp the load firmly, then raise the load using your legs to lift and keeping the lift close to the body. Never attempt to lift or push an object which is too heavy; you should contact your supervisor when help is needed to move a heavy item.
- Never stack material precariously on top of lockers, file cabinets or other relatively high places.
- When carrying material, caution should be exercised in watching for and avoiding obstructions, loose materials, etc..
- Do not stack materials in an unstable manner.
- Report exposed wiring and cords that are frayed or have deteriorated insulation so that they can be repaired or replaced immediately.
- All spills should be cleaned up promptly.
- Never use a metal ladder where it could come in contact with energized parts of equipment, fixtures or circuit conductors.
- Maintain sufficient access and working space about all electrical equipment to permit ready and safe operations and maintenance.
- Do not use any portable electrical tools and equipment that are not grounded or double insulated.
- All electrical equipment should be plugged into appropriate wall receptacles or into an extension of only one cord of similar size and capacity. Three-pronged plugs should be used to ensure continuity of ground.
- All cords running into walk areas must be taped down or inserted through rubber protectors to preclude them from becoming tripping hazards.
- Inspect motorized vehicles and other mechanized equipment daily or prior to use.
- Shut off engine, set brakes, and block wheels prior to loading and unloading vehicles.
- Inspect pallets and their loads for integrity and stability before loading and moving.
- Do not store compressed gas cylinders in areas which are exposed to heat sources, electric arcs or high temperature lines. Cylinders should be secured in an upright position.
- Do not use compressed air for cleaning off clothing.
- Identify contents of pipelines prior to initiating any work that affects the integrity of the pipe.

- Wear hearing protection in all areas identified as having high noise exposure.
- Goggles or face shields must be worn when grinding.
- Do not use faulty or worn hand tools.
- Always keep flammable or toxic chemicals in closed containers when not in use.
- Do not eat, drink or smoke in areas where hazardous chemicals are present.
- Be aware of the potential hazards involving various chemicals stored or used in the workplace.
- Cleaning supplies should be stored away from edible items on kitchen shelves.
- Cleaning solvents and flammable liquids should be stored in appropriate containers.
- All chemicals should be kept in well labeled containers.
- Never leave lower desk or cabinet drawers open that present a tripping hazard. Use care when opening and closing drawers to avoid pinching fingers.
- Do not open more than one upper drawer at a time; particularly the top two drawers on tall file cabinets.
- Individual heaters at work areas should be kept clear of combustible materials such as drapes or waste from waste baskets. Newer heaters which are equipped with tip-over switches should be used. Use of gas fueled heaters should be avoided. Approved gas fueled heaters should be vented and equipped with emergency shutoff devices.
- Appliances such as coffee pots and microwaves should be kept in working order and inspected for signs of wear or fraying cords.
- Always use the right tool for the right job. Use them only when authorized.



Notice of Safety Infraction

We consider the safety of our employees to be very important. Therefore, to prevent accidents, it our policy to strictly enforce company safety rules. Infractions of safety rules will result in the following:

- 1st infraction: Verbal Warning
- 2nd infraction: Written Warning
- 3rd infraction: 3 to 5 Day Suspension
- 4th infraction: Dismissal

Any employee willfully endangering another employee or tampering with safety equipment will be dismissed immediately.

_____, (employee) you have been observed working in the following unsafe manner, contrary to company safety rules: _____

This is your: 1st _____ 2nd _____ 3rd _____ 4th _____ Infraction

Action taken, therefore is: _____

Supervisor: _____ Date: _____

Employee: _____ Date: _____

Employee Safety Information Form

This form is for use by employees who wish to provide a safety suggestion or report an unsafe workplace condition or practice.

Description of unsafe condition or practice: _____

Causes or other contributing factors: _____

Causes or other contributing factors Employee's suggestion for improving safety: _____

Has this matter been reported to the area supervisor? Yes _____ No _____

Employee Name (optional): _____ Date: _____

Employees are advised that the use of this form or other reports of unsafe conditions or practices are protected by law. It would be illegal for the employer to take any action against an employee in reprisal for exercising rights to participate in communications involving safety.

OSHA Recordkeeping Guidelines

The Occupational Safety and Health Act of 1970 requires employers to prepare and maintain records of occupational injuries and illnesses. These records provide a basis for a statistical program that produces reliable injury and illness data. This data is useful to OSHA in identifying industries that need help in improving their safety and health programs, as well as assisting employers in finding ways to prevent injuries in their workplace.

This material summarizes the OSHA recordkeeping requirements. Additional information may be found by contacting local OSHA offices or online at www.osha.gov. They provide forms and pamphlets free to employers.



I. Employers who must keep OSHA records.

Employers with 11 or more employees at any time of the year in the following industries (SIC code) must keep records:

- Agriculture, forestry, and fishing (01-02 and 07-09)
- Oil and gas extraction (13, 1477)
- Construction (15-17)
- Manufacturing (20-39)
- Transportation and public utilities (41-42, 44-49)
- Wholesale trade (50-51)
- Building materials and garden supplies (52)
- General merchandise and food stores (53, 54)
- Hotels and other lodging places (70)
- Repair services (75, 76)
- Amusement and recreation services (79)
- Health services (80)

In addition, an employer may be asked to participate in the Annual Survey of Occupational Injuries and Illnesses. These employers are notified in advance and supplied with the appropriate forms and instructions.

Those employers who are **exempt** from OSHA recordkeeping include:

- Automotive dealers and gasoline service stations (55)
- Apparel and accessory stores (56)
- Furniture, home furnishings, and equipment stores (57)
- Eating and drinking places (58)
- Misc. retail (59)
- Banking (60), Credit agencies other than banks (61)
- Security, commodity brokers, and services (62)
- Insurance (63), insurance agents, brokers, and services (64)
- Real estate (65), combined real estate and insurance (66)
- Holding and other investment offices (67)
- Personal services (72), business services (73), motion pictures (78)
- Legal services (81), educational services (82), social services (83)
- Museums, botanical, zoological gardens (84)
- Membership organizations (86), private households (88), and misc. services (89)

IMPORTANT: Being exempt from recordkeeping does not exempt an employer from OSHA compliance, OSHA poster display, or reporting to OSHA within 48 hours any accident which results in one or more fatalities or the hospitalization of five or more employees.

II. OSHA Recordkeeping Forms

A. The Log and Summary (OSHA No. 300)

Important:

Entries must be made no later than 7 calendar days after receipt of the injury information.

Basic recordkeeping concepts and guidelines are included with instructions on the back of form OSHA No. 300. The following summarizes the major recordkeeping concepts and provides additional information to aid in keeping records accurately.

1. **An injury or illness is considered work related if it occurs in the work environment (defined as any area on the employer's premises, e.g., worksite, company cafeteria, or company parking lot). The work environment surrounds the workers wherever they are— on official travel, in dispersed operations, or along regular routes (e.g., sales representative, pipeline worker, vending machine repairer, telephone line worker).**
2. **All work-related fatalities are recordable.**
3. **All diagnosed work-related illnesses are recordable.**
4. **All work-related injuries requiring medical treatment or involving loss of consciousness, restriction of work or motion, or transfer to another job are recordable.**

Recordable and nonrecordable injuries: Each case is distinguished by the treatment provided; i.e., if the injury required **medical treatment**, it is recordable; if only **first aid** was required, it is not recordable. **However, medical treatment is only one of several criteria for determining recordability.** Regardless of treatment, if the injury involved loss of consciousness, restriction of work or motion, transfer to another job, or termination of employment, the injury is recordable.

Medical treatment: The following are considered to involve medical treatment and are recordable for a work-related injury.

- Antiseptics applied on second or subsequent visit to a doctor or nurse.
- Burns of second or third degree.
- Butterfly sutures.
- Compresses, hot or cold, on second or subsequent visit to a doctor or nurse.
- Cutting away dead skin (surgical debridement).
- Diathermy treatment.
- Foreign bodies, removal if embedded in eye.
- Foreign bodies, if removal from a wound requires a physician because of depth of embedment, size or shape of object(s) or location of wound.
- Infection, treatment for.
- Prescription medications used.
- Soaking, hot or cold, on second or subsequent visit.
- Sutures (stitches).
- Whirlpool treatment.
- X-ray which is positive.

First-aid treatment: The following are considered to involve only first-aid treatment and need not be recorded if the work-related injury does not involve loss of consciousness, restriction of work or motion, or transfer to another job.

- Antiseptics, application of, on first visit to a doctor or nurse.
- Bandaging on any visit to a doctor or nurse.
- Burns of first degree.
- Compresses, hot or cold, on first visit to a doctor or nurse.
- Elastic bandage, use of, on a first visit to a doctor or nurse.
- Foreign bodies, not embedded, irrigation of eye for removal.
- Foreign bodies, removal from wound by tweezers or other simple technique.
- Nonprescription medications, use of.
- Observation of injury on second or subsequent visit.
- Ointment applied to abrasions to prevent drying or cracking.

Other procedures not considered medical treatment:

- Tetanus shots, initial or booster alone.
- Hospitalization for observation.
- X-ray which is negative.

B. Supplementary Record of Occupational Injuries and Illnesses, OSHA No. 301.

For every illness or injury entered on the log, it is necessary to record additional information on the supplementary record, OSHA No. 301. To eliminate duplicate recording, workers compensation, insurance, or other reports may be used as supplementary records, if they contain all of the items on the OSHA No. 301. These records must also be present in the establishment within 7 calendar after the employer has knowledge of the illness/injury.

III. Location and Maintenance of Records

- Records must be maintained at each establishment
- All records must remain in the establishment for 5 years after the year which they relate
- Records must be made available to employees, former employers, and their representatives for examination
- Employers are required to update the No. 300 to include newly discovered cases and to reflect changes which occur in recorded cases after the end of the calendar year

IV. Posting of OSHA Records

- It is required that the OSHA 300A “Summary of Work-Related Injuries and Illnesses,” be posted in the workplace from February 1 through April 30.

Accident Investigation

What are Accidents?

A variety of definitions exist to describe “an accident.” Basically, accidents are “unplanned events that interrupt the completion of an activity and that may (or may not) include injury or property damage.”

Accidents have also been described as:

- A harmful encounter with the environment, a danger not averted, an accident is subject to prediction and control.
- An accident is a non-deliberate, unplanned event which may produce undesirable effects, and is preceded by unsafe, avoidable acts and/or conditions.

Accidents are the result of hazardous acts or conditions -- most often, a combination of both. An investigation identifies which acts and conditions led to the accident allowing supervisors to take action to eliminate or control them.

Reporting All Injuries Is Important

Every injury is important enough to make note of. First-aid type can often be an indicator of the potential for more serious problems at worksite.

It is essential that employees report all injuries. The problems that arise when employees fail to report injuries include:

1. Missed opportunity to learn anything from those injuries.
2. Those factors that are causing the injuries go undetected.
3. Serious infections or complications can result.
4. Other employees tend to fall into the same pattern of unsafe behavior.

The ideal time to let the employees know that all injuries must be reported is when they are hired. Be sure that supervisors have a positive attitude and do not have the impression that they may be angry when an employee does report an injury.

The Purpose of Accident Investigation

It is incorrect to think of accident investigation as merely getting out a form and filling it out. Recording and reporting injuries must not be a mechanical routine.

This report must show:

1. The supervisor’s version of what happened.
2. How the injury occurred.
3. Why it happened.
4. Most importantly— what must be done to prevent recurrence.

You must systematically obtain all of the relevant facts when an injury takes place. Many benefits are obtained through proper investigation. The primary benefit is PREVENTION. **Keep in mind that one of the most beneficial tools in preventing accidents at your worksite is ACCIDENT INVESTIGATION.**

Another important point to remember is that accident investigation must not be viewed as a fault finding mission. The quickest way to keep an employee from relating all the facts of an accident is to lay blame on the employee. **DO NOT FIND FAULT IN HOW THE INJURY OCCURRED**, but demonstrate to the injured employee that you are only looking for facts so that a similar injury does not occur.

Why Accidents Must Be Investigated

The supervisor has a special responsibility when it comes to investigating an accident.

1. They have personal interest in identifying and eliminating accident causes. The people being injured are their employees. It is their production that will suffer. It is their reputation at stake.
2. They are the most likely person to take action in correcting an unsafe act and/or unsafe condition. Supervisors have direct control over their staff and have the ability to follow up on incidents and accidents.
3. The supervisor knows most about the circumstances. They have daily contact with the employees working at their worksites or in their departments. They know the area, machines, work processes, and individual characteristics of their employees.
4. They are first in line to effectively communicate with their employees. They, for the most part, “speak the same language” as their employees.



Benefits of Accident Investigation to Supervisors

Supervisors also benefit from prompt and thorough accident investigation. Some of these benefits include:

1. Concern for employees is demonstrated by effectively interviewing them. Once again, remember to find fact—not fault.
2. The supervisor builds credibility by correcting those items that caused the injuries.
3. Time is saved by effectively conducting the investigation.

The What, When and Why of Accident Investigations

The inexperienced supervisor may ask what an accident investigation even is. Actually, the accident investigation is the supervisor’s analysis and description of what took place. Every accident must be thoroughly analyzed.

It must never be a repetitious account of what the injured employee said. All of the facts gathered from the injured employee, witnesses and your own analysis will make up the report.

The time to conduct an accident investigation is as soon after the accident as possible—if possible, immediately after the accident is reported. The information gathered is fresh and does not as readily become confusing, forgotten or distorted.

Accident investigations have but one purpose—to prevent accidents. The supervisor’s purpose in accident investigation is not to pin blame on an employee. **Preventing recurrence is the key.**

Conducting the Accident Investigation

The best starting point is the interview of the employee involved in the accident. Apply these techniques during your investigation:

1. Put the employee at ease. Remind him/her of the purpose of the interview. You want to prevent recurrence. You do not want to fix blame. The interview is a joint effort to prevent other injuries. Be friendly, understanding, sympathetic and be calm. Do not immediately question the employee if he is emotionally upset or in pain.
2. Conduct the investigation as close to the accident scene as possible. You want to make the interview as private as possible. Privacy provides several advantages:
 - A. It puts the employee at ease.
 - B. It prevents ideas from being influenced by others.
3. Ask for the employee’s version of the accident/incident. Let them tell their own version. Do not interrupt to ask a variety of questions. Do not make judgments.
4. Ask specific question:
 - A. What happened?
 - B. What was done?
 - C. How was it done?

Ask open-ended questions so that responses cannot be answered with a yes or no. **Never use the word careless.**

5. Repeat the person’s story back to them. It will be more understandable and the person can correct any errors or deficiencies in their story.
6. What could have been done to prevent accident reoccurrence?
7. The last phase of the interview must close on a positive note. Tell the employee what you are going to do to keep the same type of accident/incident from happening again.

Use these same principles when talking to witnesses. A witness does have to be an eyewitness to be effective.

Managing the Accident Scene

An accident scene is a chaotic place, particularly when injuries are involved. The supervisor responsible for the area should take charge of the site and direct any response activities.

It is important to remember that two concerns take priority at any accident scene:

- Care and treatment of the injured.
- Elimination or control of **remaining** hazards.

Treat the Injured First:

In most instances, the care and treatment of the injured will take first priority at the scene. However, when hazardous conditions at the scene present an immediate threat to the health or safety of anyone, including rescue workers, eliminating or controlling the hazard should take priority.

When injuries are encountered at an accident scene, the supervisor should make sure that proper emergency help has been summoned and the victims are given any necessary first aid. If emergency providers are already on the scene, the supervisor should make sure they receive whatever cooperation they need to get the job done. Only authorized first aid personnel should be administering first aid treatment. This includes trained employees, EMTs, paramedics, medical personnel.

Control Remaining Hazards:

Sometimes, after an accident has occurred, conditions at the site can remain hazardous. If anything at the scene still presents a danger, access to the area must be restricted until the hazard has been eliminated or controlled. If there is any uncertainty about conditions at an accident site, **do not take chances**, keep people out of the area until no danger remains.

Isolate the Site to Protect People and Preserve Evidence:

It is important to keep the area from being disturbed until it has been inspected. A common way to handle this is to use a brightly colored marking tape, rope, cones, barricades, or other types of signs to outline the restricted area. If none of these are available, employees may be posted around the site to keep people out of the area.

Make Your Accident Investigation Productive

Why the term “Productive” accident investigation?

Most people think of accidents exclusively as a loss; a liability. But such events can be turned into an asset if proper steps are taken. The benefits are:

1. Improvement of methods and conditions.
2. Identification of training deficiencies.
3. Demonstration of management’s concern for employee safety.
4. Supervisors add to their knowledge of managing.

Accident Investigation Report

EMPLOYEE NAME	SOCIAL SECURITY	JOB TITLE
ACCIDENT/INCIDENT ADDRESS (STREET)		DEPARTMENT
CITY, STATE, ZIP CODE	TELEPHONE	LENGTH OF TIME ON JOB
SITE BUSINESS	TYPE OF BUSINESS	

ACCIDENT TYPE (select the most appropriate response)

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> Struck Against | <input type="checkbox"/> Fall to Different Level | <input type="checkbox"/> Contact Electrical Current | <input type="checkbox"/> Other (describe) _____ |
| <input type="checkbox"/> Struck By | <input type="checkbox"/> Slip or Twist (Not fall) | <input type="checkbox"/> Muscular Strain | |
| <input type="checkbox"/> Caught In or Between | <input type="checkbox"/> Exposure to Temp. Extreme | <input type="checkbox"/> Respiratory Exposure | |
| <input type="checkbox"/> Fall on Same Level | <input type="checkbox"/> Skin Exposure | <input type="checkbox"/> Exposure to Physical Agents (Noise, radiation, etc.) | |

HAZARD

A. Identify the behavior prior to accident/incident, describing the events such as cleaning, climbing, repair, install, lifting, cutting, etc.

B. Identify the "act" which contributed to the accident, such as twist, push, crawl, stand, sit, reaching, etc.

CAUSE (Use the listing below as an aid in identifying the factors that contributed to the accident. (Check all that apply.)

PROCEDURES

- None developed
- Developed but not followed
- Developed but not trained
- Developed but not understood
- Developed but not accurate
- Developed but unable to follow

HAZARD

- Created by co-worker
- Created by external factors
- Documented but not repaired
- Unidentified
- Identified by accepted
- Repaired but deficient repair
- Conditions changed without proper communication
- Lack of documentation

FACILITIES/EQUIPMENT

- Faulty equipment
- Poor design
- Corrosion/Wear
- Ergonomic factors
- Facility layout
- New equipment
- Change in process/materials

COMMUNICATION

- Insufficient planning
- Breakdown in communication between workers
- Breakdown in communication between workers and supervisors
- Breakdown in communication between workteams
- Confusion after communication

IN A HURRY

- | | |
|--|---|
| <input type="checkbox"/> Supervisor implied need | <input type="checkbox"/> Customer originated |
| <input type="checkbox"/> Employee perceived need | <input type="checkbox"/> Equipment failure |
| <input type="checkbox"/> Friendly competition | <input type="checkbox"/> Rushes, deadlines |
| <input type="checkbox"/> Due to external factors | <input type="checkbox"/> To achieve bonus |
| <input type="checkbox"/> Workload to heavy | <input type="checkbox"/> Lack of help or assistance |
| <input type="checkbox"/> Lack of teamwork | <input type="checkbox"/> Illness |

TRAINING

- Insufficient training
- Circumstances not addressed in training
- Tools used incorrectly

OTHER FACTORS

- | | | |
|--|-------------------------------------|-----------------------------------|
| <input type="checkbox"/> Weather/temperature | <input type="checkbox"/> Light | <input type="checkbox"/> Chemical |
| <input type="checkbox"/> Working long hours | <input type="checkbox"/> Noise | |
| <input type="checkbox"/> Physical overexertion | <input type="checkbox"/> Atmosphere | |
| <input type="checkbox"/> Personal Protective equipment | <input type="checkbox"/> Visibility | |
| <input type="checkbox"/> Improper body position | <input type="checkbox"/> Radiation | |

MAJOR CAUSE (From areas identified on the previous page, choose the major cause)

- | | |
|---|--|
| <input type="checkbox"/> Procedures | <input type="checkbox"/> Training |
| <input type="checkbox"/> Facilities/equipment | <input type="checkbox"/> Environment |
| <input type="checkbox"/> In a hurry | <input type="checkbox"/> Communication |

Other _____

People _____

Materials _____

ROOT CAUSE

1. Why did the event occur?

2. Why did the behavior exist?

3. Why did the condition exist?

CORRECTIVE ACTION (List corrective steps to reduce potential for a recurrence)

1. Explain how to eliminate the hazard or task:

2. Define how to engineer or design out the hazard or task:

3. How would you substitute the hazard or task?

4. What type of training is needed?

5. What type of personal protective equipment is needed?

Completed by _____

Date _____

Hazard Identification and Control

Inspections are preventive in nature—they help identify accident causes, including unsafe conditions and unsafe acts, before an accident is allowed to occur. For this reason, inspections are an important, integral part of every effective safety program.

To maintain a safe and healthful workplace, you need to:

1. Identify workplace hazards which exist now or could develop, utilizing the information obtained through a thorough investigation of the operation.
2. Institute procedures to control these hazards and take action to eliminate them. Consistent and immediate correction demonstrate management's serious concern and commitment to accident prevention.

Types of Inspections

Continuous/Ongoing: Conducted informally by supervisor, employees and maintenance as part of their daily routine and job responsibility. Items most commonly checked are: housekeeping, moving parts, material handling, environmental, personal protective equipment, chemical handling and storage, fire and electrical, and worker methods and behaviors.

Periodic: Planned formal inspections that are systematic, deliberate and thorough. They are scheduled monthly and are conducted by the safety coordinator or safety committee. They cover a specific area or aspect of an operation and have a written record of findings and corrective actions. Checklists are used as a guide for what to look for, allow for immediate recording of findings, and serve as tools for follow-up action.

Frequency of inspections may increase if a loss trend indicates a frequency or severity ratio or a new procedure has been implemented.

The safety inspection is used as a means of evaluating your facility, operations, and actions throughout the workplace. Proper use of this loss control tool keeps management informed of overall conditions. The inspection not only reveals what is wrong, but suggests corrective action(s) that can be taken to bring the operation up to a desired standard of safety. The results of inspections or the reporting of unsafe conditions and unsafe acts on the part of an employee are of valuable assistance if:

- Management is receptive and appreciative.
- Suggestions are thoroughly investigated and reviewed.
- Employees are commended for their efforts.
- Positive corrective actions are taken to eliminate the potential accident cause.



Correcting the Hazard

Once the hazard has been identified, an action plan should be developed to correct the hazard. The plan should include:

1. The hazard to be corrected.
2. What action is to be taken to correct the hazard.
3. Steps to complete the action.
4. Who will ensure that the action is completed.
5. The target date for completion.
6. The actual completion date.

The action plan is to be completed by the safety committee. The safety coordinator has the ultimate responsibility to make sure that the plan is followed. The plan should be reviewed at each safety committee meeting.

The following is a list of methods to correct hazards. The list is in order of preference. Start at the top for each hazard; if that method is not feasible, try the next method, and so on.

- Eliminate the task or hazard.
- Engineer or design out the hazard or task through guarding.
- Provide training to employees in hazard awareness and safe work practices.
- Provide PPE and train prior to issuing.



Loss Control Action Plan

Safety Coordinator: _____ Date: _____

HAZARD TO BE CORRECTED	ACTION STEPS	ASSIGNED TO	TARGET DATE	COMPLETION DATE

Instructions For Completing Job Hazard Analysis Form



Purpose

The purpose of a job hazard analysis form is to break down the job steps and hazards involved in these steps, in an effort to identify potential exposures to injury.

Sequence of Basic Job Steps

The job should be broken down into steps. Each step should accomplish a major task. Each task should consist of a set of movements. The steps should be placed in logical sequence. For example, the job might be to move a box from a conveyor in the receiving area to a shelf in the storage area. Steps would include: Picking up the box from the conveyor and putting it on a handtruck, (everything related to that one logical set of movements is part of that job step). The next logical set of movements might be pushing the loaded handtruck to the storeroom. Removing the boxes from the truck and placing them on the shelf. And, finally, returning the handtruck to the receiving area might be the final step in this type of job.

Be sure to list all the steps in a job. Some steps might not be done each time. Checking the casters on a handtruck, for example. However, that task is a part of the job as a whole, and should be listed and analyzed.

Potential Hazards

Identify the hazards associated with each step. Examine each step to find and identify hazards. It's important to list all hazards. Hazards contribute to accidents, injuries and occupational illnesses.

Be sure to distinguish between a hazard, an accident and an injury. A hazard is a potential danger, an accident is an unintended happening that may result, and an injury is the result of an accident.

Recommended Safe Job Procedures

Using the first two columns as a guide, decide what procedures are necessary to eliminate or minimize the hazards that could lead to an accident, injury or occupational illness. Among the actions that can be taken are 1) engineering the hazard out; 2) providing personal protective equipment; 3) job instruction training; 4) good housekeeping; and 5) good ergonomics.

List recommended safe operating procedures on the form, and also list required or recommended personal protective equipment for each step. Be specific. Say exactly what needs to be done to correct the hazard. Give a recommended action or procedure for every hazard.

JOB HAZARD ANALYSIS TRAINING GUIDE COMPANY:	JOB: TITLE OF PERSON WHO DOES JOB:	DATE:
DEPARTMENT:	SECTION:	ANALYSIS BY: REVIEWED BY:
SEQUENCE OF BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED SAFE JOB PROCEDURE
[Empty space for content]		
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT:	APPROVED BY:	

JOB HAZARD ANALYSIS TRAINING GUIDE		JOB: Die Changing	DATE: February 9, 1995
COMPANY: SAMPLE		TITLE OF PERSON WHO DOES JOB: Die Setter	ANALYSIS BY: Die Setter, Operator, Supervisor
DEPARTMENT: Ladder Fabrication		SECTION: Power Presses	REVIEWED BY: J. Smith, Supervisor
SEQUENCE OF BASIC JOB STEPS			
1. Check the die number.	1. Use of wrong die (Damage to die).		1. Supervisor should recheck the die number before change.
2. Move the lift to the die bin.	2. Misuse of operations and controls of lift (damage to die setter, others and property).		2. Be familiar with operations and controls of the lift. make certain path is clear of employees and obstacles.
3. Remove the die from the bin.	3. a)Lifting heavy and awkward die. b)Falling die.		3. a)Position lift abutting bin, keep lift slightly lower than bin, and make certain die can be removed by one person. b)Lock to prohibit moving.
4. Move lift from bin to press.	4. Same as 2.		4. Same as 2.
5. Move die from table to press.	5. Same as 3.		5. Position lift abutting press, keep lift slightly higher than press, and lock lift to prohibit moving.
6. Move die from press to table.	6. Same as 3.		6. Position lift abutting press, keep lift slightly lower than press, and lock lift to prohibit moving.
7. Move lift from press to bin.	7. Same as 2.		7. Same as 2.
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT		APPROVED BY:	

Bloodborne Pathogens

OSHA Standard 1910.1030

Purpose

Limits occupational exposure to blood and other potentially infectious materials since any exposure could result in transmission of bloodborne pathogens which could lead to disease or death.

Scope

Covers *all employees* who could be “reasonably anticipated,” as the result of performing their job duties, to *face contact with blood* and other potentially infectious materials. OSHA has not attempted to list all occupations where exposures could occur. “Good Samaritan” acts such as assisting a coworker with a nosebleed would not be considered occupational exposure.

Infectious materials include semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, saliva in dental procedures, and body fluid visibly contaminated with blood and all body fluids in situations where it is difficult or impossible to differentiate between body fluids. They also include any unfixed tissue or organ other than intact skin from a human (living or dead) and human immunodeficiency virus (HIV)-containing cell or tissue cultures, organ cultures and HIV or hepatitis B (HBV)-containing culture medium or other solutions as well as blood, organs or other tissues from experimental animals infected with HIV or HBV.

Although a list is included below of a number of job classifications that may be associated with tasks that have occupational exposure to blood and other potentially infectious materials, the scope of this standard is in no way limited to employees in these jobs. The hazard of exposure to infectious materials affects employees in many types of employment and is not restricted to the health care industry. At the same time, employees in the following jobs are not automatically covered unless they have occupational exposures:

- Hospital nurses and physicians.
- Employees of clinical/diagnostic laboratories.
- Housekeepers in health care facilities.
- Laundry personnel.
- Tissue bank personnel.
- Employees in blood banks/plasma centers who collect and test blood.
- Physicians, nurses, nurse practitioners, physicians’ assistant and other health care employees in physicians’ offices.

- Freestanding clinic employees (e.g., hemodialysis clinics, urgent care clinics, health maintenance organization (HMO) clinics, and family planning clinics).
- Employees in clinics in industrial, educational, and correctional facilities (e.g., those who collect blood, and clean and dress wounds).

The standard requires a *written schedule for cleaning*, identifying the method of decontamination to be used, in addition to cleaning following contact with blood or other potentially infectious materials. It specifies methods for disposing of contaminated sharps and sets forth standards for containers for these items and other regulated waste. Further, the standard includes provisions for handling contaminated laundry to minimize exposures.

HIV and HBV Research Laboratories and Production Facilities

Calls for these facilities to follow *standard microbiological* practices and specifies additional practices intended to minimize exposures of employees working with concentrated viruses and reduce the risk of accidental exposure for other employees at the facility. These facilities must include required containment equipment and an autoclave for decontamination of regulated waste, and must be constructed to limit risks and enable easy cleanup. *Additional training and experience requirements* apply to workers in these facilities.

Summary

The standard requires employers to eliminate or minimize exposure to personnel by developing and implementing an Exposure Control Plan (ECP). The ECP is described to contain the following elements:

- Determination of exposure.
- Schedule and method of implementation of the ECP.
- Methods of compliance.
- Hepatitis B vaccination and Post-Exposure Evaluation and Follow-up.
- Communication of Hazards to employees.

Similar to other OSHA programs, the ECP must be in written form and accessible to all employees. The following information will detail the major parts and impacts of the ECP.

Exposure Determination

This calls for the employer to list all job classifications that have full time or occasional occupational exposure (which it defines as “reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee’s duties”). A job analysis or list of tasks and procedures in which occupational exposures occur is to be included.

Schedule and Method of Implementation of the ECP

In addition to exposure determination, the plan must include an explanation of when and how the employer will implement the provisions of the standard that are specific to the employer’s workplace.

Method’s of Compliance

Universal precautions are to be observed to prevent contact with contaminated blood or materials. If the circumstance in which differentiation between body fluid is difficult or impossible, all body fluids shall be considered potential, infectious materials (e.g. saliva in dental practice). Other methods of compliance include **Engineering and work practices controls**. Hand washing facilities or appropriate antiseptic hand towelettes must be provided. Contaminated needles and other sharps cannot be bent, recapped, removed unless there is no alternative or it is necessary for a specific medical procedure. The shearing or breaks of contaminated needles is prohibited. All contaminated sharps must be placed in containers that are puncture resistant, properly labeled or color-coded and leakproof on the sides and bottom.

Warning information regarding equipment that may become contaminated is to be conveyed to employees or the servicing representative or manufacturer so that precautions will be taken (e.g. artificial kidney).

Personal protective equipment (PPE) is to be provided to the employee at no cost. PPE includes at a minimum gloves, gowns, laboratory coats, face shields or masks, eye protection, mouthpieces, resuscitation bags, pocket masks or other ventilation devices. It is up to the employer to enforce the use of PPE. If an employee decides to decline to use PPE (because PPE use would have prevented the delivery of health care, public safety service, or posed an increased hazard to the user) the circumstances should be investigated and documented to assess if changes should be instituted to prevent future occurrences. The PPE must be available in appropriate sizes and if an employee is allergic to certain glove types, hypoallergenic gloves, glove liners, powderless gloves or similar alternatives must be provided.

PPE is to be cleaned, laundered, repaired or replaced, and disposed of at no cost to the employee.

The employer must determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleared, and procedure being performed in the area.

Regulated Waste

Must be in containers which are closeable, constructed to prevent leakage of fluids and properly labeled or color-coded.

Disposal of all regulated waste must be in accordance with State or Local regulations.

All the above procedures are to be reviewed and updated on a regular schedule to ensure their effectiveness.

Hepatitis B Vaccination

Requires vaccinations to be made *available to all employees who have occupational exposure to blood* within 10 working days of assignment, at no cost, at a reasonable time and place, under the supervision of licensed physician/licensed health care professional and according to the latest recommendations of the U.S. Public Health Service (USPHS). *Prescreening may not be required* as a condition of receiving the vaccine. Employees must sign a declination form if they choose not to be vaccinated, but may later opt to receive the vaccine at no cost to the employee. Should booster doses later be recommended by the USPS, employees must be offered them.

Post-Exposure Evaluation and Follow-up

Specifies procedures to be made *available to all employees who have had an exposure incident* plus any laboratory tests must be conducted by an accredited laboratory at no cost to the employee. Follow-up must include a *confidential medical evaluation* documenting the circumstances of exposure, identifying and testing the source individual, if feasible, testing the exposed employee’s blood if he or she consents, post-exposure prophylaxis, counseling and evaluation of reported illnesses. Health care professionals must be provided specified information to facilitate the evaluation and their written opinion on the need for hepatitis B vaccination following the exposure. Information such as the employee’s ability to receive the hepatitis B vaccine must be supplied to the employer. All diagnoses must remain confidential.

If an employee should experience an exposure incident (e.g. needle stick, splash), the exposed employee is to have a confidential medical evaluation and follow-up which include:

- Documentation of the route(s) of exposure and circumstances under which the exposure incident occurred.
- Identification and documentation of the source individual unless the employer can establish identification is infeasible or prohibited by law.
- Employees blood for HBV and HIV serological status to be collected as soon as feasible and tested after consent is obtained.

The Healthcare Professional providing an exposure evaluation must be provided the following information:

- A copy of the bloodborne pathogens standard.
- Description of exposed employees duties as they relate to the incident.
- Documentation of route(s) of exposure and circumstances under which exposure occurred.
- Results of source individual's blood tests, if available.
- All medical records relevant to appropriate treatment including vaccination status.

The Healthcare Professional's written opinion must be made available to the employee within 15 days of the evaluation.

Communication of Hazards to Employees

Labels

Requires *warning* labels including the *orange-red biohazard symbol* affixed to containers of regulated waste, refrigerators and freezers and other containers which are used to store or transport blood or other potentially infectious materials. *Red Bags* or containers *may be used* instead of labeling. When a facility uses universal precautions in its handling of all specimens, labeling is not required within the facility. Likewise, when all laundry is handled with universal precautions, the laundry need not be labeled. Blood which has been tested and found free of HIV or HBV and released for clinical use, and regulated waste which has been decontaminated, need not be labeled. Signs must be used to *identify restricted areas* in HIV and HBV research laboratories and production facilities.

Training

Annual Training must be provided to employees with occupational exposures during working hours and at *no cost* to

the employee. A training program is to include at a minimum the following items:

- An explanation of the modes of transmission of bloodborne pathogens.
- An explanation of the employer's exposure control plan and the means by which employee can obtain a copy of the written plan.
- An explanation of the appropriate methods for recognizing tasks and other potentially infectious materials.
- An explanation of the use and limitations of methods that will prevent or reduce exposure including engineering controls, work practices and PPE.
- Information on the types, proper use, location, removal, handling, decontamination and disposal of PPE.
- An explanation for the basis for selection of PPE.
- Information on the Hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated and that the vaccine and vaccination will be offered free of charge.
- Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.
- An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.
- Information on the post-exposure evaluation and follow-up and that the employer is required to provide for the employee following an exposure incident.
- An explanation of the sign and labels and/or color coding.
- An opportunity for interactive questions and answers with the person conducting the training session.

Recordkeeping

Records for each employee with occupational exposure should be kept for at least the duration of employment plus 30 years. Records should include name and Social Security number of the employee, a copy of HBV vaccination and all relevant medical records.

A copy of exams, medical testing, employer's copy of the healthcare professional's written opinion, and a copy of the information provided to the healthcare professionals should be included in the records.

Sample— Exposure Control Program

To comply with 1910.1030

In compliance with 1910.1030(c)(1), this Exposure Control Program is designed to eliminate or minimize employee exposure to bloodborne pathogens.

- A. The following job classification within our organization have the potential exposure to bloodborne pathogens. (See 1910.1030(b))— Definitions for Occupational Exposure and Other Potentially Infectious Materials: (LIST OF JOB CLASSIFICATIONS IN YOUR FACILITY.)
- B. The schedule for implementation of the methods of compliance is as follows:
 1. **Universal precautions** shall be observed to prevent contact with blood or potentially infectious materials. Where it is difficult to differentiate between body fluid types, all such body fluids shall be considered potentially infectious materials.
 2. The following **engineering or work practice controls** have been established to eliminate or minimize exposure. (See 1910.1030(d)(2), (1) through (XIV)).
 - a. Hand washing facilities or antiseptic soap is provided for immediate use after contamination.
 - b. Employees shall wash hands immediately after removing gloves.
 - c. Contaminated needles or other sharps shall not be bent, recapped or removed except:
 - by use of the mechanical devices that we have or by the one handed technique we have been taught.
 - that we can document there is no feasible alternative.
 - d. Contaminated sharps shall be placed in our sharps containers meeting the specification of 1910.1030(d)(2)(viii).
 - e. Eating, drinking, smoking or applying cosmetics or lip balm or handling contact lenses is prohibited in the work areas.
 - f. Food or drink shall not be kept in the refrigerator, freezers, on shelves, cabinets or on counter tops or bench tops where blood or other potentially infectious material can be present.
 - g. All procedures involving blood or potentially infectious materials shall be performed in such a manner as to minimize splashing, spattering, spraying or generation of droplets of these substances.
 - h. Mouth piping is prohibited.
 - i. Specimens of blood or other potentially infectious materials shall be placed in leak proof containers. If such containers should leak, they *must* be placed in a second non-permeable container.
 - j. Any equipment, samples, waste, etc. shall be examined before they leave the premises to make sure they are not contaminated. Labels as specified in 1910.1030(g) shall be affixed to these materials to warn others handling them.

These engineering or work practice controls will be annually reviewed and updated as new information becomes available and/or when new employee positions with potential exposure are created.

3. Personal Protective Equipment (PPE)

- a. We shall supply all PPE (that is gloves, gowns, laboratory coats, face shields, goggles or eye glass side shields, surgical caps or hoods and/or shoe covers or boots where gross contamination can be anticipated).
- b. We shall ensure all PPE is used by the employee in those areas where exposure to bloodborne pathogens is likely to occur. **Note:** if in the employee's professional judgment the use of the PPE would have prevented the delivery of healthcare or public safety services or increased the hazard to the worker or coworker, we will review the circumstances and decide accordingly.
- c. It is our responsibility to ensure that the appropriate PPE is available in the proper sizes. You must let us know what sizes you require.
- d. We will provide any cleaning, laundering or disposal of contaminated PPE. There is no cost to the employee for this service.
- e. If your PPE becomes damaged (torn, broken, leaks occur, etc.) we will replace or repair the PPE to its original effectiveness.

- f. If your PPE protective garments become saturated or penetrated by potentially infectious material, the PPE shall be removed immediately or as soon as feasible.
- g. All PPE shall be removed prior to leaving our facility. Such PPE shall be placed in the appropriate area or storage container for laundering, storage, decontamination or disposal.
 - I. Gloves
 - a) Gloves shall be worn when it is reasonably anticipated that the employee may have *hand* contact with blood or other potentially infectious materials, mucous membranes or non-intact skin, when performing vascular access procedures except as specified in 1910.1030(d)(3)(ix)D.
 - b) Disposable (single use) gloves such as surgical or examination gloves shall be replaced as soon as practical or as soon as feasible when contaminated or torn, punctured, or when their ability to function as a barrier is compromised.
 - II. Masks, Eye Protection and Face Shields
 - a) Whenever splashes, spray, splatter or droplets of blood or other potentially infectious materials are expected to be generated, the appropriate masks, eye protection or face shield shall be used.
 - III. Gowns, Aprons and Other Protective Body Clothing
 - a) Appropriate protective clothing will be used depending on the task and degree of exposure anticipated. (NOTE: The employer must determine the degree of potential exposure to his employees and then list the required protective clothing the employee must use to prevent exposure).

4. Housekeeping

- a. All equipment and work surfaces that have become overly contaminated with blood or infectious material shall be cleaned and disinfected as soon as feasible and at the end of the work shift if the surfaces may have become contaminated since the last cleaning.
- b. Any protective coverings, such as plastic wrap or aluminum foil used to imperiously-back absorbent paper cover equipment or surfaces shall be removed and replaced when overtly contaminated or at the end of the shift.
- c. All pails, cans, bins or similar receptacles intended for reuse shall be decontaminated on a regular basis (state the frequency).
- d. Broken glass shall not be picked up by hand but shall be swept up or picked up with tongs.
- e. Reusable sharps shall not be stored or processed in such a manner that requires the employee to reach by hand into the container where these sharps have been placed.
- f. Bags to be used for regulated waste are *red* or have the Biohazard symbol on them; or placard, sign of tag shall be affixed to the bag pursuant to 1910.1030(g)(1)(i)(e).

5. Regulated Waste (See definition in standard)

- a. Contaminated sharps shall be placed in SHARPS containers. Sharps containers are located as close as feasible to the immediate area where they are used. (NOTE: for your own information list where they are located.)
- b. All other regulated waste shall be placed in impermeable, leak-proof containers which can be closed. (They are located in _____). They shall be labeled prior to removal from the facility.
- c. All regulated waste shall be disposed of in accordance with applicable City and County Health Departments, and State Department of Environmental Quality regulations.

6. Vaccination and Medical Follow-up

- a. All our employees can make arrangements with _____ to obtain the series of hepatitis B vaccinations. There will be no cost to the employee for these vaccinations. You may not wish to take the series at the time offered but may take it at later date if you so desire. If you decline the vaccination, you will be required to sign a DECLINATION form. You may obtain a Declination form from _____.
- b. If there has been an exposure incident, you are entitled to a confidential medical evaluation and follow-up. However, you must report such an incident to your supervisor immediately so that documentation and tracking can begin.

7. Information and Training

- a. An accessible copy of the regulatory text of the Bloodborne Pathogen standard and an explanation of its contents;
- b. A general explanation of the epidemiology and symptoms of bloodborne diseases;
- c. An explanation of the modes of transmission of bloodborne pathogens;
- d. An explanation of the employer's exposure control plan and the means by which the employee can obtain a copy of the written plan;
- e. An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
- f. An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment;
- g. Information on the types, proper use, location, removal handling, decontamination and disposal of personal protective equipment;
- h. An explanation of the basis for selection of personal protective equipment;
- i. Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;
- j. An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.
- k. Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;
- l. An explanation of the signs and labels and/or color coding required by paragraph 1910.1030(g)(l); and
- m. An opportunity for interactive questions and answers with the person conducting the training session.

8. Recordkeeping

- a. Any needle stick or occupational exposure requiring medical treatment (e.g., gamma globulin, hepatitis B immune globulin or hepatitis B vaccination, etc.) shall be recorded on the OSHA 200 log.
- b. We shall remove any personal identifiers from these records prior to making them available to anybody without written consent of the employee(s).
- c. Medical records for all employees covered under this standard will be maintained for the period of employment plus 30 years. These records are confidential.
- d. Training records for employees covered under this standard will be maintained for at least 3 years and are not confidential. We will evaluate every exposure incident as required by paragraph (f)(3)(i) of this standard, describing:
 - I. Circumstances surrounding the incident.
 - II. What PPE was the employee wearing?
 - III. Were engineering controls (i.e., used sharps containers) in place at the time of the incident?
 - IV. Were established work practices (i.e., hand washing) in place at the time of the incident?
 - V. Could the incident have been avoided?
 - VI. Changes recommended to avoid similar future incidents.
 - VII. Identification and documentation of the source individual, unless the employer can establish that identification is not feasible or prohibited by state or law.
 - a) The source individual's blood shall be tested as soon as feasible for HBV and HIV.
 - b) Results of the source individual's testing shall be made available to the exposed employee.
 - VIII. The exposed employee's blood shall be collected and tested as soon as feasible after consent is obtained.
 - IX. Counseling and evaluation of reported illness will be offered to the exposed employee.

Medical Record

29 CFR 1910.1030

Name of Employee _____

SSN# _____

- 1. Hepatitis B Vaccination Dates 1st _____
2nd _____
3rd _____

2. Or any medical records relative to the employee’s ability to receive HBV vaccination.

3. Or Declination Letter.

In the Event of Exposure Incident the Employer Shall Provide the Employee with the Following Information:

- A. A copy of results of examinations, medical testing, and following-up procedures as required by (f)(3).
- B. The employer’s copy of the health care professional written opinion as required by (f)(5).
- C. A copy of the information provided to the health care professional as required by (f)(4)(ii)(B),(C), and (D).

Appendix A— Mandatory

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Employer: _____ Date: _____

Training Format

- A. An accessible copy of the standard and an explanation of its contents.

The purpose of the law is to protect employees who have reasonably anticipated exposure to blood or OPIM (Other Potentially Infectious Material). This copy is available for your review. It is kept _____

- B. A general explanation of the epidemiology and symptoms of bloodborne diseases. Covered in C below.

- C. Explanation of modes of transmission.

1. Hepatitis B, HIV/AIDS, Hepatitis C, Syphilis and Malaria are examples of bloodborne diseases. They are spread from infected individuals who very often have no signs or symptoms of infections or illness to non- infected individuals by:
 - a. Needle stick, sharp object cut, or other parenteral exposure.
 - b. Splash or splatter into or on mucous membranes such as the eyes, nose, and mouth.
 - c. Splash or splatter to non-intact skin (**abrasion, cut, pimple**).
 - d. Illegal intravenous drug use.
 - e. Sexual contact.
 - f. An infected mother to her baby.
2. The symptoms of hepatitis B infection include abdominal pain or discomfort, flu-like symptoms, dark urine, fatigue, joint pain, rash and fever.
3. The symptoms of HIV infection include a mononucleosis-type illness with fever, swollen lymph glands, joint pain, diarrhea, fatigue and rash.

- D. Explanation of the employer's **Exposure Control Plan** and how the employee can obtain a copy of the written plan.

We have written Exposure Control Plan located _____. It is available for your review anytime you would like. Our Exposure Control Plan describes who is covered under the standard and what protective equipment we will provide to you and when to use it. It also describes our housekeeping procedures, training information procedures and recordkeeping.

- E. Explanation of the appropriate methods for recognizing tasks that may involve exposure to blood or, OPIM— and— H the selection of personal protective equipment.

- F. Explanation of the use and limitations of the methods that will prevent or reduce exposures.

- G. Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.



H. Personal Protective Equipment made available and where it is stored.

I. Information on the hepatitis B vaccine.

A safe immunogenic and effective hepatitis B vaccine produced in yeast is currently used. HBV vaccination is the most important part of any hepatitis B control program because gloving and other protective devices cannot completely prevent puncture injuries. The vaccination is offered free of cost to you. It consists of 3 arm inoculations, 1st as soon as possible, 2nd after one month, and the 3rd at 6 months, or as the prescribing information indicates. I encourage you to take advantage of this protection. If you choose not to receive the vaccination series, I will require you to sign a declination form, but if in the future you should change your mind, you can still receive the vaccination free of charge.



J. Information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM.

K. Explanation of procedures to follow in the event of an exposure incident and post-exposure evaluation and follow-up. An exposure incident is a specific eye, mouth, other mucus membrane, non-intact skin, or parental contact with blood or OPIM and will require the following procedures:

1. Report the incident immediately.
2. We will attempt to get a blood draw from the source individual and make the HBV and HIV status of that person known to your treating health care professional.
3. We will write up a description of the incident.
4. You will write up a description of the incident.
5. You will be offered a hepatitis B and HIV screen.
6. If you decline the HIV screen, but allow an HBV draw, I am required to preserve that sample for 90 days in case you change your mind.
7. All tests results will be maintained confidential.

L. Explanation of the signs and labels and/or color-coding:

Any bag or container which is red or has the biological hazard warning label on it is for regulated waste.

M. The employer must provide an opportunity for interactive questions and answers.

Fleet Safety Program

The total cost of a vehicle accident usually exceeds the amount recovered from the insurance company. Accident control and avoidance is critical because increased insurance premiums reduce profits. There are also indirect costs that result from a motor vehicle accident involving a company vehicle. These may include:

- Salary paid and loss of service of employees injured in an accident.
- Added workers compensation costs resulting from a disabling injury.
- Vehicle's commercial value while it is out of service, the cost of replacement vehicle, or rental costs.
- Cost of supervisory time spent investigating, reporting, and cleaning up after the accident.
- Poor customer and public relations resulting from a company vehicle being involved in an accident.
- Cost of replacing or retraining an injured employee.

The framework of this program is comprised of the following elements:

- Management position and statement of policy.
- Company safety rules and regulations.
- Supervisors' roles and responsibilities.
- Screening and hiring procedures.
- Vehicle inspection and maintenance.
- Driver training.
- Collision reporting and investigation procedures.

Management Position

An effective vehicle safety program is one which is supported by management. A program's effectiveness and success is directly related to its endorsement and enforcement by the employer. Management should communicate to all company vehicle operators its endorsement of safe vehicle operations through a written position directive.

Management should further communicate company vehicle safety rules and regulations through a Fleet Safety Rules & Regulations directive.



MEMORANDUM

To: All Employees

From: CEO/Manager/Supervisor

Re: Vehicle Operations Safety

The mission of this company includes the hiring, training and continued employment of qualified motor vehicle operators. We wish to foster an environment of professionalism within the company and the community by employing safe and courteous drivers. To that extent, we are introducing our organization's Fleet Safety Program.

Our company Fleet Safety Program will consist of:

- Company's vehicle safety rules and regulations.
- Supervisor's responsibilities.
- Qualifications standards.
- Vehicle inspections and maintenance.
- Driver training guidelines.
- Collision reporting and investigation procedures.

Thank you for your support and efforts.

Management

Safety Rules and Regulations

The following is an outline of our company's vehicle operators safety regulations. These rules are set forth to help us control and ultimately eliminate collisions and accidents that could harm our employees and cost us time and money in damages and lost productivity.

- Drivers' physical condition must be such as to enable them to efficiently perform their duties and operate a vehicle in a safe and prudent fashion.
- Use of alcoholic beverages while driving, or driving under the influence of alcoholic beverages or impairing drugs is prohibited.
- Drivers must be licensed for the type of vehicle to be operated. Drivers will keep their license on their person at all times when operating a company vehicle or any vehicle while on company business.
- Drivers will obey all traffic laws while operating company vehicles or driving while on company business.
- Company vehicles are to be driven by authorized company members only.
- Company members shall not pick-up or transport hitch hikers or strangers.
- Seat belts shall be worn at all times when operating a company vehicle or while driving on company business.
- Routine inspection of the vehicle will be performed daily, before operating the vehicle. Any unsafe condition must be reported to the employees supervisor and repaired before operating the vehicle.
- Drivers shall immediately report any accident involving another vehicle, object, pedestrian, or structure to the local police authority.
- Drivers must immediately report any collision to their supervisor.
- Drivers must immediately report all arrests and convictions to the company. Any arrest for a violation greater than a Class A misdemeanor will result in the immediate suspension of company driving privileges. Any conviction for a violation greater than a Class B misdemeanor will result in the revocation of company driving privileges and may result in personnel action.
- Drivers who operate heavy-class trucks must comply with all Federal DOT and CDL Regulations.

Supervisors Roles and Responsibilities

Owners or managers should recognize the value that supervisors can add to the effectiveness of a Fleet Safety Program. Supervisor-level personnel must also recognize the importance of their roles in the program. Supervisors should be the person designated to administer many facets of this program. Supervisors will be the initial point for application to the program, and monitoring of the employees' progress throughout the screening and qualifying process. Supervisors will also have the responsibility of maintaining personnel and vehicle records.

Supervisors will be responsible for the following aspects of driver selection and training:

- Participate in new driver selection process.
- Conduct initial training of new drivers.
- Conduct in-service training for existing drivers.
- Receive accident/incident reports.
- Investigate and review accidents and incidents involving company vehicles and/or company drivers.

Screening and Hiring Procedures/Qualifications

Hiring competent, qualified people for positions that will require driving on company business greatly reduces a company's risk. Organizations should aggressively screen individuals for drivers. This will rule out those who should absolutely not drive company vehicles or drive on company business.

Driver Qualifications Standards

All persons who will operate company vehicles or will operate their own vehicle must meet the following minimum qualifications:

- The employee must be at least 18 years of age.
- The employee must have a current, valid driver license issued by the state in which he or she resides.
- Employees who will be operating commercial class vehicles will have a current, valid CDL, or will be able to obtain one before driving company owned commercial class trucks.
- All prospective company drivers will furnish their supervisor with a recent Moving Violation Record or Motor Vehicle Record (MVR).
- Provide at least three references of individuals who are familiar with the applicant's driving abilities.
- No major violations in the past 3 years.
- No alcohol or drug related violations in the last 10 years.
- No motor vehicle accidents in the last 3 years.
- No more than 3 minor violations in the last 3 years.
- Minor Violations or any traffic or parking offense not listed under Major Violations.

Major Violations consist of:

1. Driving while intoxicated or impaired.
2. Implied Consent (Failure to submit to a chemical test for impairment).
3. Negligent Homicide, Vehicular Manslaughter, or Gross Negligence which causes death.
4. Operating a motor vehicle while drivers' license is suspended or revoked.
5. Use of a motor vehicle in the commission of a felony.
6. Aggravated assault with a motor vehicle.
7. Operating a motor vehicle without the owner's authority.
8. Permitting an unlicensed person to drive.
9. Speed Contest (Racing).
10. Hit and run, failure to report collision.
11. Reckless Driving.

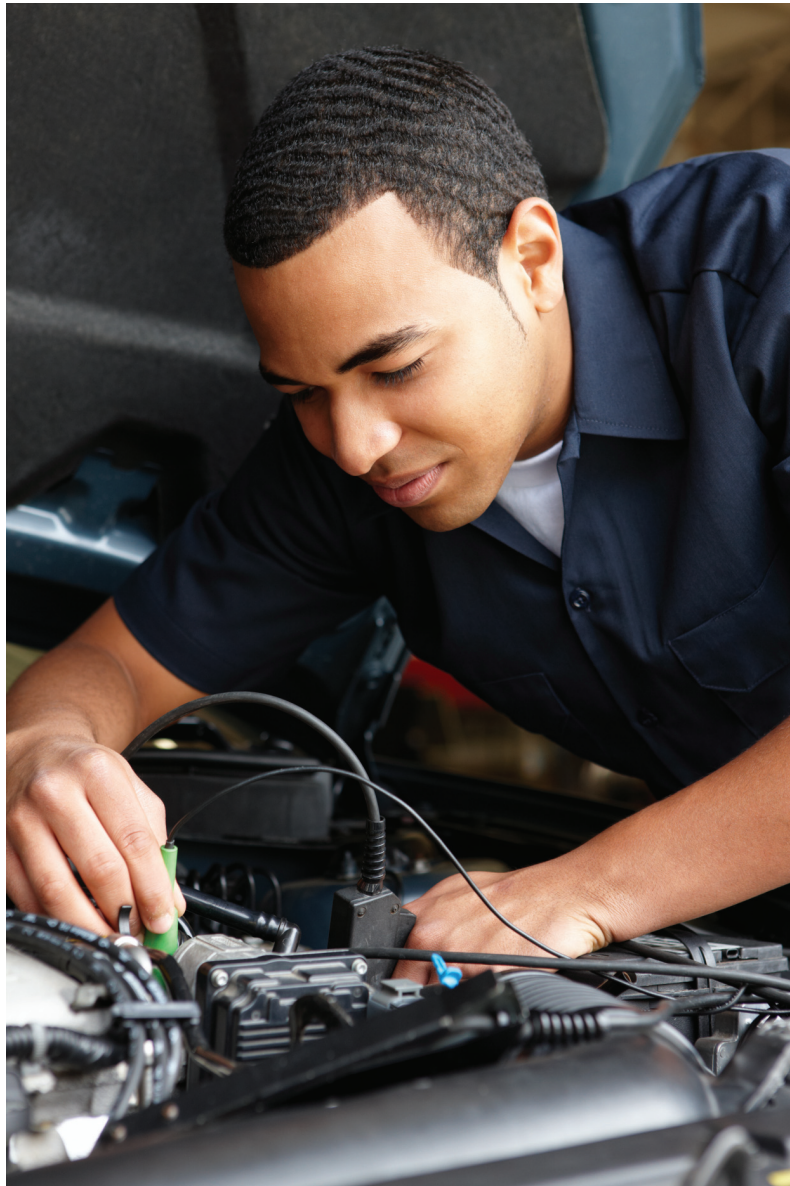
Vehicle Inspections and Maintenance

Proper vehicle maintenance is crucial to preventing operational incidents and accidents. All company vehicles should be put on a routine maintenance schedule. By performing periodic checks of the vehicles operating systems, hazardous conditions are more likely to be found before they can become a problem or cause an incident.

Commercial class trucks should be checked daily, before driving, in accordance with Department of Transportation (D.O.T.) guidelines. Light trucks and passenger cars should be routinely inspected on a weekly basis or a monthly basis at the very least.

Vehicle operators do not necessarily need to be mechanically inclined to perform a competent safety check of a vehicle. They do need to have a basic understanding of what to look for and determine if something appears to be wrong with a vehicle. A short training session in vehicle systems should be sufficient to teach even the most naive driver what to look for.

A safety check of a vehicle will identify emerging problems. The operator or driver can then contact a supervisor or a competent mechanic to have the problem identified and corrected.



Company Vehicle Safety Inspection Report

Vehicle _____

Year _____ Make _____ Model _____ License # _____

		Comments	YES	NO
LIGHTS				
Head Lamps		Dim		
		Bright		
Tail Lamps				
Brake Lamps				
Side Marker Lamps				
Turn Signals				
Reverse Lamps				
Emergency Flashers				
Running/Clearance Lamps				
Cargo Lamps				
WARNING DEVICES				
Horn				
Reverse/Back Up Signal				
DRIVER'S VISIBILITY				
Wipers/Wiper Blades				
Washer				
Defroster/Defogger		Front		
		Rear (if equipped)		
Windshield/Glass Condition				
Mirrors (side view & rear view)				
GAUGES				
Speedometer				
Odometer				
Tachometer				
Fuel gauge				
Oil Pressure				
Temperature				
Ammeter				
OCCUPANT SAFETY/SECURITY				
Safety Belts				
Door Locks				
Heater/Air Conditioning				
DRIVABILITY				
Steering				
Brakes		Primary Brakes		
		Park/Emergency		
		Anti Lock System		



Comments		YES	NO
SUSPENSION			
Shocks			
Springs/McPherson Struts			
Wheel Alignment			
DRIVETRAIN			
Engine	Starting		
	Operating/Idling/Running		
Transmission/Transaxle			
Universal Joints			
Differential			
Clutch			
TIRES			
Even tread wear			
Correct inflation			
EXHAUST SYSTEM			
Pipes			
Mufflers			
Catalytic Converter			
EXTERIOR			
Roof	Top and Side Panels		
Front	Bumper, Grille, Head Lamps		
Hood			
Left Side	Front fender		
	Door(s) Panels		
	Rear Fender		
Right Side	Front fender		
	Door(s) Panels		
	Rear Fender		
Rear	Bumper, Tail Lamps		
	Trunk lid/tailgate/hatch		
INTERIOR			
Dashboard			
Door Panels			
Rear Deck			
Carpets/Mats			
Seats/Upholstery			
Headliner			



	Comments	YES	NO
MECHANICAL			
Fluid Levels			
Motor Oil Level			
Transmission Fluid Level			
Brake Fluid Level			
Coolant/Anti-Freeze Level & Condition			
Battery Fluid Level			
Windshield Cleaner Solution			
Hoses			
Connections and Fittings			
Leaks			
ELECTRICAL CONNECTIONS			
Secure, wrapped or insulated			
Battery free of corrosion			
GENERAL			
Excessive grease build up			
Water, fluid, condensation apparent?			
MISCELLANEOUS			
Spare Tire, Jack, Tools on Board			
Vehicle Registration			
Current Safety Inspection Certificate			
Proof of Insurance Certificate			
OTHER			

Inspected by: _____

Reviewed by: _____

Driver Training

Once an applicant has met the initial qualifications to become a company driver, they should be certified in the vehicle or type of vehicle they will operate. The company safety coordinator or designated trainer should administer a written test to determine competency and knowledge of vehicle operating principles. Management should also determine if the driver understands basic traffic laws. Sample tests are available through a number of sources. Check with your State Driver's Licensing Authority for sample tests or contact any commercial safety vendors who can provide tests for a nominal fee.

The National Safety Council (800.621.6244) or local safety council can provide information on Defensive Driving courses available in your area.

A written test should be followed up with a practical evaluation or "road test." The road test should be comprised of both urban and open highway environment situations.

The examiner should watch particularly for inattention to traffic and road conditions, aggressive driving behaviors, and courtesy towards other drivers and pedestrians.

Business Use of Personally Owned Vehicles

Employees who regularly use their own vehicles for conducting business should provide proof of insurance annually to the company.

Company Driver Evaluation Checklist

Date of Evaluation: _____

Driver: _____

Evaluator: _____

	YES	NO
Pre-drive safety check.		
Safety belt use.		
Looks back before reversing.		
Safe speed.		
Signals at least 3 seconds before turn.		
Signals at least 3 seconds before lane changes.		
Checks mirrors and looks before lane changes. Checks blind spots.		
Observes posted speeds.		
Maintains proper following distance.		
Correct lane travel. Positions vehicle in lane properly.		
Executes turns correctly.		
Brings vehicle to a complete stop at stop sign before continuing.		
Checks mirrors periodically.		
Can explain correct collision avoidance techniques.		
Can explain correct accident reporting procedures.		

Collision Reporting and Investigation Procedures

Inevitably, accidents do occur. When they do, it is important to investigate them in a timely manner. Should an employee be involved in an accident, the most important obligation is treatment of injured persons. Secondary is the notification of the owners of any damaged property, vehicles, etc. Reporting accidents to company management is also critical so that insurance companies may be notified and an investigation can be conducted.

Employees should be instructed to contact the police and have an accident report filed anytime they are involved in an accident. This will help reduce or prevent future liability if your driver was not at fault.

It is recommended that an accident investigation be performed as soon as possible to determine what contributed to it. Once the causal factors have been determined, management should take action to prevent a similar incident from recurring.

It is important during the review process that investigators remain impartial and objective. The review should focus on whether the accident was preventable. The establishment of a procedure to review accidents and determine their causes and recommend correction is critical if future losses are to be prevented.

An accident review board or committee is one of the more effective tools to do this. The committee should be comprised of managers, supervisors, and a neutral party who may be unfamiliar with the accident or the employee who was involved.



Personnel Actions/Discipline

If the accident review committee determines that the driver's actions contributed or caused the accident, it is imperative that corrective action be taken. The goal should be to improve the driver's deficiencies.

In the event that disciplinary action is decided upon, it is important that the action be documented to provide a foundation for future actions should the driver be involved in additional accidents.

Hazard Communication Standard

OSHA Standard 29 CFR 1910.1200

Purpose: To establish uniform requirements to insure that the hazards of all chemicals produced, imported, or used within states are evaluated and that this hazard information is transmitted downstream to affected employers and employees.

The Eight Major Objectives of the Standard

1. Obtain MSDS's on all chemicals purchased or used in the workplace.
2. Development of MSDS'S on in-house chemical mixtures.
3. Determine which chemicals present a hazardous exposure.
4. Make available MSDS's to affected employees.
5. Provide specific information to employees.
6. Insure all containers are labeled.
7. Train all employees.
8. Develop a written hazard communication program.

Development of a Hazard Communication Program

1. The first step in this process is the development of an initial inventory list that should include every chemical brought into the workplace that you are not willing to eat or drink.
2. Separate chemicals used in the laboratory from those used in production.

Mixtures: These should be tested by an outside lab to determine the health or fire hazards, or the mixture shall be assumed to present the same health hazard as the components which comprise 1% by weight or volume or greater of the mixture; it shall be assumed to be a Carcinogen if it contains a Carcinogenic component in concentrations of .01% or greater.

3. The easiest way to communicate the information available on the Material Safety Data Sheets to employees is to collect the Material Safety Data Sheets and keep them in a notebook in the employees area. The employees may then view them as necessary.
4. Specific information is provided to employees by informing employees of the standard, which operations involve hazardous chemicals, and the location of the written program.

Differentiate between informing and training. Informing can be part of training. Information can be posted as part of the informing. Information posted should include description of standard requirements, location and availability of the written program, location of Material Safety Data Sheets, list of operations where hazardous chemicals are present.

5. Labeling: Check each container entering the workplace for appropriate labeling. That is, identity of chemical, hazard warning, name and address of manufacturer or importer.

Explain the importance of reading labels and following directions for the safe handling. Label, tag and mark container into which hazardous chemicals are transferred, with the chemical identity and hazardous warning unless the container is for immediate use.

Hazard warning must convey specific physical and health hazard of the chemical. Explain the words danger, caution and harmful if absorbed by the skin. These words are precautionary statements and do not identify specific hazards.

In lieu of labels, process sheets, batch tickets, standard operating procedure, or other written materials may be used on stationary process equipment if they contain the same data as a label and are readily available to employees in the work area or situation.

Cross reference chemical identifiers on labels to Material Safety Data Sheets and the lists of hazardous chemicals.

Be aware of other hazardous chemicals that may have specific labeling requirements under other standards. Examples are asbestos and lead cadmium.

Training

The employer is required to provide the following:

1. An overview of the requirements contained in the Hazard Communication Standard.
2. Chemicals present in their workplace operations.
3. Location and availability of the written hazard program.
4. Physical and health effects of the hazardous chemicals.
5. Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area.
6. How to lessen or prevent exposure to these hazardous chemicals through usage of control/work practices and personal protective equipment.
7. Steps the company has taken to lessen or prevent exposure to these chemicals.
8. Training must be conducted at the time of hire, when a new chemical is introduced, when an employee changes duties that involve new chemicals and on an annual basis.
9. All training must be documented and kept on file.

Material Safety Data Sheets Must Include

1. Identity
2. Physical and chemical characteristics (vapor pressure, flash point)
3. Physical hazards (reactive, explosion, fire potential)
4. Health hazards (signs and symptoms of illness)
5. Primary route of entry
6. PEL
7. Carcinogen
8. Precautions necessary for safe use
9. Control measures (engineering, administrative, PPE)
10. Emergency first aid
11. Date of preparation
12. Name, address, and phone number of manufacturer

Additional Criteria For Material Safety Data Sheets

- Must be in English first, and then any other language employee wishes.
- Must be in a central location, such as construction trailer, office, lunchroom, or foreman's office.
- An employer must have a system where the data can be read to employee over the phone, this is only permitted under a mobile work site provision, when employees must travel between work places during the shift.
- MSDS must contain the physical and chemical properties of a substance, including health hazards, routes of exposure, precaution for safe handling and use, emergency and first aid procedures, and control measures.
- If the MSDS is unclear or incomplete, contact the manufacturer for clarification.
- MSDS must be available to employees, designated employees and assistant secretary of OSHA.
- If there are multiple suppliers of the same chemical, there is no need to retain multiple MSDS for that chemical.
- While MSDS are not required to be physically attached to a shipment, they must accompany or precede the shipment.
- All components of a mixture that have been determined to present a physical hazard must be listed.

Material Safety Data Sheet Checklist

You must ensure that each MSDS contains the following information:

1. Product or chemical identity used on the label.
2. Manufacturer's name and address.
3. Chemical and common names of each hazardous ingredient.
4. Name, address, and phone number for hazard and emergency information.
5. Preparation or revision date.
6. The hazardous chemical's physical and chemical characteristics, such as vapor pressure and flash point.
7. Physical hazards, including the potential for fire, explosion and reactivity.
8. Known health hazards.
9. OSHA permissible exposure limit (PEL), ACGIH threshold limit value (TLV) or other exposure limits.
10. Emergency and first-aid procedures.
11. Whether OSHA, NTP or IARC lists the ingredient as a carcinogen.
12. Precautions for safe handling and use. Control measures such as engineering controls, work practices, hygienic practices or personal protective equipment required.
13. Primary routes of entry.
14. Procedures for spills, leaks and clean-up.

Compliance Checklist

	YES	NO
1. Listed all of the hazardous chemicals in our workplace.		
2. Established a file for information on hazardous chemicals.		
3. Obtained an MSDS for each hazardous chemical in use.		
4. Developed a system to ensure that all incoming hazardous chemicals are labeled.		
5. Reviewed each MSDS to be sure it is complete.		
6. Made sure that MSDS' are available where necessary.		
7. Developed a written hazard communication program.		
8. Developed a method to communicate hazards to employees and others.		
9. Informed employees of protective measures for hazardous chemicals used in workplace.		
10. Alerted employees to other forms of warning that may be used.		



MSDS Glossary

The following glossary presents brief explanations of acronyms and common terms frequently used by chemicals manufacturers in their MSDS's.

Acid	Any chemical that undergoes dissociation in water with the formation of hydrogen ions. Acids have a sour taste and may cause severe skin burns. Acids turn litmus paper red and have pH values of 0 to 6.	Asymptomatic	Showing no symptoms.
Acute Effect	Adverse effect on a human or animal that has severe symptoms developing rapidly and coming quickly to a crisis.	Auto-Ignition Temperature	The temperature to which a closed, or nearly closed container must be heated in order that the flammable liquid, when introduced into the container, will ignite spontaneously or burn.
Acute Toxicity	Acute effects resulting from a single dose of, or exposure to, a substance. Ordinarily used to denote effects in experimental animals.	Base	A substance that (1) liberates hydroxide (OH) ions when dissolved in water, (2) receives hydrogen ions from a strong acid to form a weaker acid, and (3) neutralizes an acid. Bases react with acids to form salts and water. Bases have a pH greater than 7 and turn litmus paper blue. See Alkali.
Air-Line Respirator	A respirator that is connected to a compressed breathable air source by a hose of small inside diameter. The air is delivered continuously or intermittently in a sufficient volume to meet the wearer's breathing requirements.	Benign	Not recurrent or not tending to progress. Not cancerous.
Air-Purifying Respirator	A respirator that uses chemicals to remove specific gases and vapors from the air or that uses a mechanical filter to remove particulate matter. An air-purifying respirator must only be used when there is sufficient oxygen to sustain life and the air contaminant level is below the concentration limits of the device.	Biodegradable	Capable of being broken down into innocuous products by the action of living things.
Alkali	Any chemical substance that forms soluble soaps with fatty acids. Alkalis are also referred to as bases. They may cause severe burns to the skin. Alkalis turn litmus paper blue and have pH values from 8 to 14.	Boiling Points-BP	The temperature at which a liquid changes to a vapor state at a given pressure. The boiling point usually expressed in degrees Fahrenheit at sea level pressure (760 mmHg, or one atmosphere). For mixtures, the initial boiling point or the boiling range may be given.
Allergic Reaction	An abnormal physiological response to chemical or physical stimuli.	Bonding	The interconnecting of two objects by means of a clamp and bare wire. It's purpose is to equalize the electrical potential between the objects to prevent a static discharge when transferring flammable liquid from one container to another. The contact with the charged object and a low resistance flexible cable which allows the charge to equalize. See Grounding.
ANSI	American National Standards Institute is a privately funded, voluntary membership organization that consensus standards and coordinates development of such standards.	Ceiling Limit (PEL or TLV)	The maximum allowable human exposure limit for an airborne substance which is not to be exceeded even momentarily. Also see PEL and TLV
Antidote	A remedy to relieve, prevent or counteract the effects of a poison.	Caustic	See Alkali
Asphyxiant	A vapor or gas that can cause unconsciousness or death by suffocation (lack of oxygen). Most simple asphyxiants are harmful to the body only when they become so concentrated that they reduce oxygen in the air (normally about 21%) to dangerous levels (18% or lower). Asphyxiation is one of the principal potential hazards of working in confined and enclosed spaces.	cc	Cubic centimeter is a volume measurement in the metric system that is equal in capacity to one milliliter (ml). One quart is about 946 cubic centimeters.
		Central Nervous System	The brain and spinal cord. These organs supervise and coordinate the activity of the entire nervous system. Sensory impulses are transmitted into the central nervous system and motor impulses are transmitted out.

Chemical	An element (e.g., chlorine) or a compound (e.g., sodium bicarbonate) produced chemical reaction.	Corrosive	A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive, if when tested on the intact skin of albino rabbits, by the method described by the DOT in Appendix A to 49 CFR Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of 4 hours. This term shall not refer to action on inanimate surfaces.
Chemical Cartridge Respirator	A respirator that uses various chemical substances to purify inhaled air of certain gases and vapors. This type respirator is effective for concentrations no more than ten times the TLV of the contaminant, if the contaminant has warning properties (odor or irritation) below the TLV.	Decomposition	Breakdown of a material or substance (by heat, chemical reaction, electrolysis, decay, or other processes) into parts or elements or simpler compounds.
Chemtrec	Chemical Transportation Emergency Center Manufacturers Association (CMA) to relay pertinent emergency information concerning specific chemicals on requests from individuals. CHEMTREC has a 24-hour toll-free telephone number (800.424.9300) to help respond to chemical transportation emergencies.	Dilution Ventilation	Air flow designed to dilute contaminants to acceptable levels. Also see general ventilation or exhaust.
Chronic Effect	An adverse effect on a human or animal body with symptoms that develop slowly over a long period of time or that recur frequently. Also see Acute	DOT	U.S. Department of Transportation regulates transportation of chemicals and other substances.
Chronic Exposure	Long-term contact with a substance.	Dry Chemical	A powdered fire-extinguishing agent usually composed of sodium bicarbonate, potassium bicarbonate, etc.
Combustible	A term used by NFPA, DOT, and others to classify certain liquids that will burn, on the basis of flash points. Both NFPA and DOT generally define "combustible liquids" as having a flash point of 100F (37.8C) or higher but below 200F (93.3C). Also see flammable." Non-liquid substances such as wood and paper are classified as "ordinary combustibles" by NFPA.	EPA	U.S. Environmental Protection Agency.
Concentration	The relative amount of a substance when combined or mixed with other substances. Examples: 2ppm hydrogen sulfide in air, or a 50 percent caustic solution.	Epidemiology	Science concerned with the study of disease in a general population. Determination of the incidence (rate of occurrence) and distribution of a particular disease (as by age, sex, or occupation) which may provide information about the cause of the disease.
Confined Space	Any area that has limited openings for entry and exit that would make escape difficult in an emergency, has a lack of ventilation, contains known and potential hazards, and is not intended nor designed for continuous human occupancy.	Explosive	A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.
		Exposure or Exposed	State of being open and vulnerable to a hazardous chemical by inhalation, ingestion, skin contact, absorption or any other course; includes potential (accidental or possible) exposure.
		Extinguishing Media	The fire fighting substances to be used to control a material in the event of a fire. It is usually identified by its generic name, such as fog, foam, water, etc.
		Eye Protection	Recommended safety glasses, chemical splash goggles, face shields, etc. to be utilized when handling a hazardous material.

First Aid	Emergency measures to be taken when a person is suffering from overexposure to a hazardous material, before regular medical help can be obtained.	Inhibitor	A chemical added to another substance to prevent an unwanted chemical change.
Flashback	Occurs when flame from a torch burns back into the tip, the torch, or the hose. It is often accompanied by a hissing or squealing sound with a smoky or sharp-pointed flame.	Insoluble	Incapable of being dissolved in a liquid.
Flash Point	The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite.	Irritant	A chemical, which is not corrosive, that causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 15 CFR 1500.41 for 4 hours exposure or by other appropriate techniques, it results in an empirical score of 5 or more. A chemical is an eye irritant if so determined in the procedure listed in 16 CFR 1500.42 or other appropriate techniques.
Fume	A solid condensation particle of extremely small diameter, commonly generated from molten metal as metal fume.	LEL or LFL	Lower explosive limit, or lower flammable limit, of a vapor or gas; the lowest concentration (lowest percentage of the substance in air) that will produce a flash of fire when an ignition source (heat, arc, or flame) is present. At concentrations lower than the LEL, the mixture is too “lean” to burn. Also see “UEL”
Grounding	The procedure used to carry an electrical charge to ground through a conductive path. A typical ground may be connected directly to a conductive water pipe or to a grounding bus and ground rod. See Bonding.	Local Exhaust	A system for capturing and exhausting contaminants from the air at the point where the contaminants are produced (welding, grinding, sanding, other processes or operation). Also see General Exhaust.
Hazardous Chemical	Any chemical whose presence or use is a physical hazard or a health hazard.	Malignant	Tending to become progressively worse and to result in death.
Hazardous Warning	Words, pictures, symbols, or combination thereof presented on a label or other appropriate form to inform of the presence of various materials.	Mechanical Exhaust	A powered device, such as a motor-driven fan or air steam venturi tube, for exhausting contaminants from a workplace, vessel, or enclosure.
HCS	Hazard Communication Standard is an OSHA regulation issued under 29 CFR Part 1910.1200.	Mechanical Filter Respirator	A respirator used to protect against airborne particulate matter like dust, mist, metal fume, and smoke. Mechanical filter respirators do not provide protection against gases, vapors, or oxygen deficient atmospheres.
Health Hazard	A chemical for which there is significant evidence, based on at least one study conducted in accordance with established scientific principles, that acute or chronic health effects may occur in exposed employees. The term “health hazard” includes chemicals that are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents that act on the hematopoietic system, and agents that damage the lungs, skin, eyes, or mucous membranes.	Melting Point	The temperature at which a solid substance changes to a liquid state.
Ignitable	Capable of being set afire.	Mist	Suspended liquid droplets generated by condensation from the gaseous to the liquid state, or by breaking up a liquid into a dispersed state, such as splashing, foaming or atomizing. Mist is formed when a finely divided liquid is suspended in air.
Impervious	A material that does not allow another substance to pass through or penetrate it.	Mixture	Any combination of two or more chemicals if the combination is not, in whole or part, the result of a chemical reaction.
Incompatible	Materials that could cause dangerous reactions by direct contact with one another.		
Ingestion	Taking in by the mouth.		
Inhalation	Breathing in of a substance in the form of a gas, vapor, fume, mist or dust.		

MSDS	Material Safety Data Sheet	Overexposure	Exposure to a hazardous material beyond the allowable exposure limits.
MSHS	Mine Safety and Health Administration, U.S. Department of Labor.	PEL	Permissible Exposure Limit is an occupational exposure limit established by OSHA's regulatory authority. It may be time-weighted average (TWA) limit or a maximum concentration exposure limit.
Mutagen	A substance or agent capable of altering the genetic material in a living cell.	pH	The symbol relating the hydrogen ion (H+) concentration to that of a given standard solution. A pH of 7 is neutral. Numbers increasing from 7 to 14 indicate greater alkalinity. Numbers decreasing from 7 to 0 indicate greater acidity.
Neurotoxin	A material that affects the nerve cells and may produce emotional or behavioral abnormalities.	Physical Hazard	A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.
Neutralize	To eliminate potential hazards by inactivating strong acids, caustics, and oxidizers. For example, acids can be neutralized by adding an appropriate amount of caustic substance to the spill.	Poison, Class A	A DOT term for extremely dangerous poisons, poisonous gases or liquids that, in very small amounts, either as gas or as vapor of the liquid, mixed with air, are dangerous to life. Examples: phosgene, cyanogen, hydrocyanic acid, nitrogen peroxide.
NFPA	National Fire Protection Association is an international membership organization which promotes improved fire protection and prevention and establishes safeguards against loss of life and property by fire. Best known on the industrial scene for National Fire Codes— 16 volumes of codes, standards, recommended practices and manuals developed (and periodically updated) by NFPA technical committees. Among these is NFPA 704M, the code for showing hazards of material as they might be encountered under fire or related emergency conditions, using the familiar diamond-shaped label or placard with appropriate numbers or symbols.	Poison, Class B	A DOT term for liquid, solid paste or semisolid substances, other than Class A poisons or irritating materials, that are known, or presumed on the basis of animal tests, to be so toxic to humans that they are a hazard to health during transportation.
NIOSH	National Institute for Occupational Safety and Health, U.S. Public Health Service, U.S. Department of Health and Human Services (DHHS), among other activities, test and certifies respiratory protective devices and air sampling detector tubes, recommends occupational exposure limits for various substances, and assists OSHA and MSHA in occupational	Reaction	A chemical transformation or change. The interaction of two or more substances to form new substances.
Nonflammable	Not easily ignited, or if ignited, not burning rapidly.	Reactivity	Chemical reaction with the release of energy. Undesirable effects such as pressure buildup, temperature increase, formation of noxious, toxic or corrosive byproducts. May occur because of the reactivity of a substance to heating, burning, direct contact with other materials or other conditions in use or in storage.
Non-sparking Tools	Tools made from beryllium, copper or aluminum-bronze greatly reduce the possibility of igniting dusts, gases, or flammable vapors. Although these tools may emit some sparks when striking metal, the sparks have low heat content and are not likely to ignite most flammable liquids.	Reproductive Toxin	Substances that affect either male or female reproductive systems and may impair the ability to have children.
OSHA	Occupational Safety and Health Administration, U.S. Department of Labor.		

Respiratory Protection	Devices that will protect the wearer’s respiratory system from overexposure by inhalation to airborne contaminants. Respiratory protection is used when a worker must work in an area where he or she might be exposed to concentration in excess of the allowable exposure limit.	Spontaneously Combustible	A material that ignites as a result of retained heat from processing or that will oxidize to generate heat and ignite, or that absorbs moisture to generate heat and ignite.
Respiratory System	The breathing system that includes the lungs and the air passages (trachea or “windpipe,” larynx, mouth, and nose) to the air outside the body, plus the associated nervous and circulatory supply.	Stability	The ability of a material to remain unchanged. For MSDS purposes, a material is stable if it remains in the same form under expected and reasonable conditions of storage or use. Conditions that may cause instability (dangerous change) are stated. For example, temperatures above 150 degrees F or shock from dropping.
Routes of Entry	The means by which material may gain access to the body, for example, inhalation, ingestion, and skin contact.	STEL	Short-Term Exposure Limit (ACGIH terminology). See TLV
Self-Contained Breathing Apparatus	A respiratory protection device that consists of a supply or a means of respirable air, oxygen, or oxygen-operating material carried by the wearer.	Supplied-Air Respirators	Air line respirators of self-contained breathing apparatus.
Sensitizer	A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.	Systemic Poison	A poison that spreads throughout the body, affecting all body systems and organs. Its adverse effect is not localized in one spot or area.
Solubility in Water	A term expressing the percentage of a material (by weight) that will dissolve in water at ambient temperature. Solubility information can be used in determining spill cleanup methods and re-extinguishing agents and methods for a material.	Target Organ Toxin	A toxic substance that attacks a specific organ of the body. For example, overexposure to carbon tetrachloride can cause liver damage.
Solvent	A substance, usually a liquid, in which other substances are dissolved. The most common solvent is water.	Teratogen	A substance or agent, exposure to which by a pregnant female can result in malformations in the fetus.
Specific Gravity	The weight of a material compared to the weight of an equal volume of water is an expression of the density (or heaviness) of a material. Insoluble materials with specific gravity of less than 1.0 will float in (or on) water. Insoluble materials with specific gravity greater than 1.0 will sink in water. Most (but not all) flammable liquids have specific gravity less than 1.0 and, if not soluble, will float on water, an important consideration for fire suppression.	TLV	Threshold Limit Value is a term used by ACGIH to express the airborne concentration of material to which nearly all persons can be exposed day after day without adverse effects. ACGIH expresses TLVs in three ways:
Spill or Leak Procedures	The methods, equipment and precautions that should be used to control or clean up a leak or spill.	TLV-C	The ceiling exposure limit. The concentration that should not be exceeded even instantaneously.
Splash-Proof Goggles	Eye protection made of a non-corrosive material that fits snugly against the face and has indirect ventilation ports.	TLV-STEL	The Short-Term Exposure Limit, or maximum concentration for a continuous 15-minute exposure period (maximum of four such periods per day, with at least 60 minutes between exposure periods, and provided the daily TLV-TWA is not exceeded).
		TLV-TWA	The allowance Time-Weighted Average concentration for a normal 8-hour workday or 80-hour workweek.
		Toxic Substance	Any substance that can cause acute or chronic injury to the human body, or which is suspected of being able to cause diseases or injury under some conditions.

Toxicity	The sum of adverse effects resulting from exposure to a material, generally, by the mouth, skin, or respiratory tract.	Vapor	The gaseous form of a solid liquid substance as it evaporates.
Trade Name	The trademark name or commercial trade name for a material or product.	Vapor Density	The weight of a vapor or gas compared to the weight of an equal volume of air is an expression of the density of the vapor or gas. Materials lighter than air have vapor densities less than 1.0 (examples: acetylene, methane, hydrogen). Materials heavier than air (examples: propane, hydrogen sulfide, ethane, butane, chlorine, sulfur dioxide) have vapor densities greater than 1.0. All vapors and gases will mix with air, but the lighter materials will tend to rise and dissipate (unless confined). Heavier vapors and gases are likely to concentrate in low places along or under floors, in sumps, sewers and manholes, in trenches and ditches where they may create fire or health hazards.
TWA	Time-Weighted Average exposure is the airborne concentration of a material to which a person is exposed, averaged over the total exposure time, generally the total workday (8 to 12 hours). Also see TLV.	Vapor Pressure	The pressure exerted by a saturated vapor above its own liquid in a closed container. When quality control tests are performed on products, the test temperature is usually 100 degrees F, and the vapor pressure is expressed as pounds per square inch (psig or psia), but vapor pressures reported as MSDS's are in millimeters of mercury (mmHg) at 68 degrees F (20 degrees C), unless stated otherwise.
UEL or UFL	Upper explosive limit or upper flammable limit of a vapor or gas. The highest concentration (highest percentage of the substance in air) that will produce a flash of fire when an ignition source (heat, arc, or flame) is present. At higher concentrations, the mixture is too "rich" to burn. Also see LEL.		
Unstable	Tending toward decomposition or other unwanted chemical change during normal handling or storage.		
Unstable Reactive	A chemical that, in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or become self-reactive under conditions of shock, pressure, or temperature.		

Hazard Communication Program for

_____ (Name of Company)

The purpose of this program is to ensure that potential hazards and hazard control measures for chemicals used by this company are understood by company employees.

The written program is available for employee review at any time. It is located _____.
A copy of the program will be provided to any employee or employee representative, upon request.

Container Labeling

_____ (name or title of individual) will verify that all containers received for use by this company will:

- Be clearly labeled as to the contents, matching identification on MSDS.
- Note the appropriate hazard warnings.
- List the name and address of the manufacturer.

No containers will be released for use until the above data is verified.

Material Safety Data Sheets

Copies of MSDS's for all hazardous chemicals to which employees may be exposed will be kept _____.

_____ (name or title of individual) will be responsible for ensuring that:

- MSDS's for the new chemicals are available.
- MSDS's will be available for review to all employees during each work shift.
- Copies will be available on request.

Employee Training and Information

Each employee will be provided the following information and training before working in areas where hazardous chemicals exist. In addition, if a new hazardous material is introduced into the workplace, affected employees will be given new information and training concerning that material.

A. Minimum Information Provided:

1. All operations and locations in the work area where hazardous chemicals are present.
2. The location and availability of the written hazard communication program, including list(s) of hazardous chemicals used and related material safety data sheets.
3. The method the company will use to inform employees of potential hazards of non-routine tasks (jobs that are not routine for an individual because of infrequency, location or type.)

B. Minimum Training Provided:

1. Methods and observations used to detect the presence or release of a hazardous chemical in the work area (such as company monitoring programs, continuous monitoring devices, visual appearance, odor or other characteristics of hazardous chemicals).
2. The physical and health hazards of chemicals in the assigned work area.
3. The measures to take to protect against such hazards, including specific company procedures concerning work practices, emergencies and care and use of protective equipment.

- 4. Details of the company hazard communication program, including explanation of the labeling system, the material safety data sheets and how to obtain and use the appropriate hazard information.

(Optional) Upon completion of the training, each employee will sign a form acknowledging receipt of the written hazard communication program and related training.

Hazardous Non-Routine Tasks (If Applicable)

If company employees are required to do hazardous non-routine tasks, such as welding in confined spaces, or cleaning of tanks, the employer must address how the employee doing the work will be informed about the specific hazards to which they will be exposed, what personal protective equipment will be provided and who will be responsible to oversee the operation or operations. If the company does not have any hazardous non-routine tasks, line through this section and state "NO HAZARDOUS NON-ROUTINE TASKS."

Chemicals in Unlabeled Pipes (If Applicable)

If the company has chemicals in unlabeled pipes, the company must inform the employees of the hazards associated with those chemicals. If the company does not have any chemicals in unlabeled pipes, line through this section and state "NO CHEMICALS IN UNLABELED PIPES."

Informing Contractors

It is the responsibility of _____ (name or title of individual) to provide contractors and their employees with the following information:

- 1. Hazardous chemicals to which they may be exposed while on the job site.
- 2. Measures the employees may take to lessen the possibility of exposure.
- 3. Steps the company has taken to lessen the risks.
- 4. Where the MSDS's are for chemicals to which they may be exposed.
- 5. Procedures to follow if they are exposed.

Contractors Informing Employers

Contractors entering this workplace with hazardous materials will supply this employer with MSDS's covering those particular products the contractor may expose this company's employees to while working at this site.

List of Hazardous Chemicals in This Workplace

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Sign _____
Senior Management Representative

Date: _____



Personal Protective Equipment

OSHA Standard 29 CFR 1910.132–138

Purpose

Provides for the protection of personnel, including the eyes, face, head and extremities, through the use of protective equipment, clothing, respiratory devices, shields and barriers, where such protection is warranted by reason of hazards of process or environment, including chemical, radiological or mechanical hazards or irritants, encountered in a manner capable of causing bodily injury or impairment through inhalation, absorption or physical contact, and where direct control of hazards by engineering, administrative or other means is infeasible or impractical.

Scope

The use of Personal Protective Equipment, or PPE, affects all workplaces where hazards are present, or are likely to be present, which necessitate the use of PPE. PPE should not, however, be used as a substitute for engineering or administrative control of hazards where such controls are possible.

Introduction

PPE use requires hazard awareness and training on the part of the user. Employees must be aware that the equipment does not eliminate the hazard and, should the equipment fail, that exposure will occur. To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean and serviceable condition.

The basic elements of a PPE management program should include an in-depth evaluation of the equipment needed to protect against identified hazards in the workplace. Management should then use the results of this evaluation to develop and implement standard safe operating procedures for personnel, and train employees on the protective limitations of PPE, as well as its proper use and maintenance.

General Requirements

It is the responsibility of each employer to perform the required workplace hazard assessment and to verify its performance through a written document certifying its completion. This written certification shall identify the workplace evaluated, the person certifying that the evaluation has been performed, and the date of the hazard assessment.

If hazards, or the likelihood of hazards, requiring the use of PPE are identified during the hazard assessment, the employer is then required to:

1. Select and require the use of PPE that will protect affected employees from identified hazards;
2. Communicate to affected employees the PPE selection decisions made;
3. Select PPE that properly fits each affected employee; and,
4. Train affected employees as to the proper use, maintenance and limitations of selected PPE.

Notes

1. The requirements for the performance of workplace hazard assessments, selection of PPE and training of affected employees under the Occupational Safety and Health Administration (OSHA)'s general requirements for PPE, found in 29 CFR 1910.132, are only applicable for eye and face, head, foot and hand hazards.
2. In instances where employees provide their own PPE, employers are still responsible for insuring the adequacy of the PPE in controlling identified hazards, and for its proper use and maintenance by employees.

Eye and Face Protection

Employees shall be provided with eye and face protective equipment when tools and equipment or work operations present actual or potential hazards from physical, chemical or radiation agents. Some of the hazards needed to be controlled through the use of eye and face protection area as follows:

Dusts, fumes and mists. Sources of these hazard types include grinding and buffing, welding, compressed air cleaning, sawing and cutting.

Flying objects and particles. Sources of these hazard types include grinding, compressed air cleaning, sandblasting chiseling, chipping, hammering, sawing and cutting, drilling and machining.

Gases, vapors and liquids. Sources of these hazard types include handling or mixing of acids, caustics and other chemical materials, and handling of hot liquids.

Heat, glare and radiant energy. Sources of these hazard types include welding, cutting, soldering and brazing.

Other potential eye and face hazards that could be encountered at various workplaces would include electrical, molten metal and laser hazards.

The type of eye and face protection selected shall be suitable to the work being performed and the hazard present. While safety glasses are the most common form of protective equipment for the eyes, other forms of eye and face protection, including flexible and rigid goggles, metal and plastic frame safety glasses, eyecup, coverspec and plate lens type tinted welding goggles, face shields and welding helmets, are better suited to many tasks. It is important to remember that each eye, face, or face-and-eye protector is designed for a particular hazard. In selecting the protector, always consider the type and degree of hazard present and select the protector accordingly.

In general, safety glasses with installed side shields are the required minimum for protection against flying particle hazards. Goggles should be worn whenever dust, mist, fume or other fine particle hazards are present. Face shields, worn in conjunction with safety glasses or goggles, should be used for protection against splashing hazards. The following Table outlines some recommended protective equipment for various hazards, however, the Table is not a complete listing of all hazards that could potentially be encountered.



Eye and Face Protector Selection Guide

OPERATION	HAZARDS	RECOMMENDED PROTECTOR
Acetylene burning, cutting and welding	Sparks, harmful rays, molten metal, flying particles	Tinted welding goggles
Chemical handling	Splash, contact burns, fumes	Flexible fitting goggles (add face shield for severe exposure)
Chipping	Flying particles	Flexible fitting or rigid goggles, safety glasses, chipping goggles
Electric (arc) welding	Sparks, intense rays, molten metal	Plate lens welding goggles, welding helmet (welding helmet in combination with tinted safety glasses advisable)
Furnace operations	Glare, heat, molten metal	Tinted welding goggles (add face shield for severe exposure)
Grinding-light	Flying particles	Flexible fitting or rigid goggles, safety glasses, face shield
Grinding-heavy	Flying particles	Flexible fitting, rigid or chipping goggles (add face shield for severe exposure)
Laboratory	Chemical splash, glass breakage	Flexible fitting goggles (face shield when in combination with safety glasses)
Machining	Flying particles	Flexible fitting or rigid goggles, safety glasses, face shield
Molten metals	Heat, glare, sparks, splash	Tinted welding goggles (face shield in combination with tinted safety glasses)
Spot welding	Flying particles, sparks	Flexible fitting or rigid goggles, safety glasses, face shield

Note: Protective equipment for those persons requiring prescription lenses shall either incorporate the corrective lenses into its design or be capable of being worn over the corrective lenses without disturbing the proper positioning of either the corrective or the protective lenses.

Head Protection

Protective helmets shall be provided for the protection of heads of occupational workers exposed to impacts and penetrations from falling or flying objects, impacts against stationary objects and, to a lesser degree, to limited electrical shock or burn hazards. All persons working in or visiting hard hat areas shall be provided with and required to wear protective headgear.

Head protection, in the form of protective hats, must do two things; it must resist penetration and absorb the shock of a blow. This is accomplished by making the hat shell of a material hard enough to resist the blow and by utilizing a shock-absorbing lining composed of a headband and crown straps to keep the shell away from the wearer's skull.

Each type and class of head protector is intended to provide protection against a specific hazardous condition. An understanding of these conditions will help in selecting the right protective hat for the particular situation or hazard.

Protective hats are made in the following types and classes:

Type 1—Helmets with full brim, not less than 1 and ¼ inches wide; and,

Type 2—Brimless helmets with a peak extending forward from the crown.

For industrial purposes, the following three classes are recognized:

Class A— General Service: Limited Voltage Protection.

Protective hats and caps under Class A are intended for protection against impact hazards, and they are typically used in mining, construction, shipbuilding, tunneling, lumbering and manufacturing.

Class B— Utility Service: High-Voltage Protection.

Class B utility service hats and caps protect the wearer's head from impact and penetration by falling or flying objects and from high-voltage shock and burn, and are used extensively by electrical workers.

Class C— Special Service: No Voltage Protection.

The safety hat or cap in Class C is designed specifically for lightweight comfort and impact protection. This class is usually manufactured from aluminum and offers no dielectric protection. Class C helmets are used in certain construction and manufacturing occupations, oil fields, refineries and chemical plants where there is no danger from electrical hazards or corrosion. They also are used on occasions where there is a possibility of bumping the head against a fixed object.

In general, hard hat areas are those areas with the potential for head injury. As such, all construction areas, or other areas having work operations performed above ground level where other personnel are required to work or transit below such areas, shall be considered hard hat areas. Hard hat areas shall also be designated as general areas, such as dredging, construction, alteration, demolition, quarry or similar field activity work sites, rather than specific areas of a work site. All points of entry into a designated hard hat area shall be posted with a sign warning personnel of the requirement to wear hard hats while in the area.

Protective headgear shall be visually inspected daily for signs of damage (e.g. dents, cracks, etc.) that might reduce the degree of safety originally provided, and shall also be periodically inspected for signs of ultraviolet degradation as evidenced by cracking or flaking of the helmet's exterior shell. Drilling holes or in any way changing the integrity of a hard hat is prohibited.

Foot and Hand Protection

The feet and hands are vulnerable to many types of workplace hazards including sharp, falling or rolling objects, rotating, pressing or cutting machinery, vibration, heat and cold, wetness, slippery conditions, chemicals and electricity. In turn, the presence of these hazards can potentially result in injuries such as cuts, punctures, abrasions, bruises, sprains, fractures, compressions, thermal and chemical burns, repetitive stress or motion disorders, skin diseases and infections.

Foot and hand protection involves guarding your toes, ankles, feet, fingers, wrists and hands (and in some cases forearms) from injury, and there are a variety of safety shoes, specialty work boots, sleeves and gloves available to protect against workplace hazards and suit specific applications. As with other forms of PPE, it is important that selection and application criteria be based on the type of identified hazard(s), the required job function to be performed, and the performance characteristics of the PPE.

Examples of foot protection include steel-toe and steel-insole shoes for protection against falling objects, crushing injuries, sharp objects and puncture wounds, rubber or plastic boots for protection against water, oils, acids, corrosives and other chemicals, foundry or welding boots with elastic sides instead of laces to allow quick, "kick-off" removal in case hot metal or sparks get inside, and electrical hazard, conductive and non-conductive shoes for work around high voltage power sources and energized electrical circuits.

Examples of hand protection include rubber insulating gloves for electrical work, canvas or leather work gloves for material handling activities, heat resistant gloves for welding and other hot work, rubber, vinyl or neoprene gloves for chemical handling and laboratory work, and Kevlar, PVC and metal mesh gloves for working with sharp instruments including knives and saws.

Other Forms of PPE

Other forms of PPE exist for whole body protection (coveralls, Tyvek suits), torso protection (vests, aprons), respiratory protection (dust masks, respirators), fall protection (body harnesses, lanyards) and hearing protection (ear plugs, ear muffs), among others. These types of protection, including criteria governing the selection, use and maintenance of protective equipment, and employee training, are covered under other existing OSHA standards. Employers and employees need to be aware of all existing or potential workplace hazards so that methods for controlling personnel exposures can be developed and implemented to insure proper precautions are observed.

Employee Training

PPE training requirements included under the OSHA general standard require employers to provide training to affected employees who are required to use PPE. At a minimum, this training shall include the following:

1. When the use of PPE is necessary.
2. What type(s) of PPE is necessary.
3. How to properly don, adjust, wear and remove PPE.
4. The limitations of the PPE in protecting against hazards.
5. Proper care, maintenance, useful life and disposal of PPE.

Employees are required to demonstrate an understanding of the training given and the ability to properly use required PPE before being allowed to perform any work requiring its use. If the employer has any reason to believe the employee, having already been trained, does not possess the understanding and skill needed to properly use the required PPE in the performance of their work, then the employer shall retain all such employees. Other circumstances requiring retraining of employees include, but are not limited to, situations where changes in the workplace render previous training obsolete, or changes in the type(s) of PPE to be used render previous training obsolete.

The employer shall verify that each affected employee has received and understood the required training through the use of a written certification that includes the name of the affected employee, the date of training, and the topics covered. Employees should be required to acknowledge having received the training by signing a copy of the training certification for placement in their personnel files.

Applicable Regulations

OSHA regulations governing the selection and use of PPE can be found in the Code of Federal Regulations (CFR), Title 29, Subpart I-Personal Protective Equipment, §1910.132 General Requirements, §1910.133 Eye and Face Protection, §1910.135 Occupational Head Protection, §1910.136 Occupational Foot Protection, and §1910.138 Occupational Hand Protection.

Certification of Hazard Assessment

Company: _____

Address: _____

Work Area: _____

Job Station: _____

Description of Job Duties/Tasks: _____

Description of Hazards:

Eye and Face?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Describe: _____
Head?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Describe: _____
Foot?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Describe: _____
Hand?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Describe: _____
Other?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Describe: _____

PPE Selection:

Eye and Face?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____
Head?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____
Foot?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____
Hand?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____
Other?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____

Name of Person Performing Hazard Assessment: _____

Signature _____ Date: _____

Certification of Employee Training

I, _____ (Name), certify that on _____ (Date),

I received (and understood) training on the proper use and maintenance of Personal Protective Equipment (PPE), including:

1. When PPE is necessary;
2. What PPE is necessary;
3. How to properly don, doff, adjust and wear PPE;
4. The limitations of the PPE; and,
5. The proper care, maintenance, useful life and disposal of the PPE.

This training was performed for the following types of PPE:

Eye and Face?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____
Head?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____
Foot?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____
Hand?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____
Other?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Type: _____

Signature of Employee _____ **Date:** _____

Job Title _____

Signature of Instructor _____ **Date:** _____

Job Title _____

Company _____

Back Safety

Back safety awareness is necessary, due to the prevalence and severity of back injuries throughout business and industry. Sprains and strains are the most common causes of lower back pain. Backs can be injured by improper lifting, falling, auto accidents, and sports activities. But of these, lifting improperly is the largest single cause of back pain and injury. Instituting proper lifting techniques and other safety measures can significantly reduce your company's back injury incidence.

A written back safety plan can be used to create an awareness of the hazard among your workforce, standardize lifting techniques, and specify alternative materials-handling measures when lifting or moving materials by hand could pose an injury hazard. Problems with the lower back are a frequent cause of lost work time and workers compensation claims. A written back safety plan can help eliminate avoidable injuries and reduce your company's workers compensation costs.

The following chart lists types of back injuries and some facts about them.

Type of Injury	Facts About
Strains and Sprains	Can result from injury to muscles and ligaments that support the back. A torn ligament will result in severe back pain.
Ruptured or Slipped Disk	Is not uncommon and occurs when the disk (vertebral cushion) presses on a nerve.
Chronic Tension or Stress	Can result in muscle spasms and aggravate persistent and painful backaches.
Other Conditions	Such as pain "referred to the back" from other organs, such as the kidneys and prostate, can result in nagging back pain.

Make sure your written plan addresses all relevant factors and practices at your facility that can contribute to back injury. All of the following factors can contribute to this problem and are suggested to be addressed in your written plan if they could apply to your facility.

- Improper Lifting Techniques
- Falls
- Poor Physical Condition
- Work in Uncomfortable Environments
- Repetitive Trauma
- Poor Posture
- Tension and Stress
- Inattention to Work Environment

Elements of Back Safety Plan

Suggested elements of a back safety plan include statements of:

- **Purpose**— The plan's purpose for your company and employees.
- **Affected employees/departments**— This section provides an area for you to list the departments and/or job classifications that are exposed to back injury hazards and thus are subject to the back safety plan.
- **Safe lifting techniques**— These are lifting techniques and guidelines that you institute as rules that must be followed when lifting to reduce the likelihood of back injury. Failure to follow these rules, once established, should be grounds for disciplinary measures.
- **Alternative materials-handling techniques**— This section lists various materials-handling techniques to use instead of lifting, depending on the situation.
- **Other safe work techniques**— This section addresses work issues other than lifting that are related to back pain or injury and how to avoid them or improve work techniques related to them.
- **Other back safety issues**— This section addresses factors unrelated to work that can affect back safety, including such things as physical condition and posture, athletic or home-improvement activity, and tension and stress.

Sample Back Safety Plan

Company Name: _____

Contact Person: Safety & Health Manager, _____ (name)

Purpose

This company requires the procedures in this plan to be followed to provide a safe working environment. The company has implemented these procedures on safe lifting practices to ensure that employees are trained to protect themselves from the hazards of improper lifting practices.

It is the responsibility of management at this company to ensure that these policies are implemented. It is the responsibility of management to ensure that these policies and the information necessary to carry out these policies is communicated to employees. It is the responsibility of all employees to follow safe work practices and comply with these rules regarding work practices.

The effectiveness of the back safety plan depends upon the active support and involvement of all affected employees.

Affected Employees/Departments

Employees in the following departments have job duties that require lifting or materials handling. These employees are to be trained on and follow the rules of this back safety plan.

Department	Employee Job Title(s)
Shipping/Receiving	Loaders, Handlers
Maintenance	All
Production	All line personnel
_____ (other)	

Safe Lifting Techniques

The following points outline good lifting practices and procedures, safe lifting techniques that may be taught to associates to minimize their risk of back injury and pain. These practices are written with the lifter in mind. Lifting remains an important function despite the level of mechanization found in the workplace today, so attention must be directed toward safe lifting practices.

The basics of good lifting are:

1. Size up the load before you lift. Test by lifting one of the corners or pushing. If it's heavy or feels to clumsy, get a mechanical aid or help from another worker. When in doubt, don't lift alone!
2. **BEND THE KNEES.** You will note this is capitalized. There's a reason for that, it is the single most important aspect of lifting.
3. When performing the lift:
 - Place your feet close to the object and center yourself over the load.
 - Get a good hand hold.
 - Lift straight up, smoothly and let your legs do the work, not your back!
 - Avoid overreaching or stretching to pick up or set down a load.
4. Do not twist or turn your body once you have made the lift.
5. Make sure beforehand you have a clear path to carry the load.
6. Set the load down properly.
7. Always push, not pull, the object when possible.
8. Change the lifting situation if possible to minimize a lifting hazard:
 - If it's a long load, get some help.
 - Split the load into several smaller ones, when you can to achieve manageable lifting weight.
 - Avoiding lifts from below the knees or above the shoulders by using mechanical aids, positioning yourself so that the object to move is within an acceptable lifting range (between the shoulders and the knees), and/or getting help from your coworkers.

Alternative Materials-Handling Techniques

Alternative materials-handling techniques for carrying or moving loads are to be used whenever possible to minimize lifting and bending requirements. These alternative materials-handling techniques include use of:

- Hoists
- Forklifts
- Dollies
- Carts
- Other mechanical devices.

Other Safe Work Techniques

Work issues other than lifting are related to back pain or injury. You can avoid them or improve work techniques related to them.

1. **Catching Objects and Working Low**— When catching falling or tossed objects, your feet should be firmly planted, with your back straight and your knees slightly bent. Your legs should absorb the impact, not your back. If you're working on something low, bend your knees. Keep your back as straight as possible. Bending from the waist can lead to back pain. If you have to use your back, keep your knees bent and your back flat. In both of these situations, frequent rest breaks are necessary to keep from getting back fatigue.

2. **Extended Sitting/Standing**— Certain jobs require long hours of standing or sitting. These conditions can create back troubles. Get up and stretch frequently if you are required to sit for long periods. If standing, ease the strain on your lower back by changing foot positions often, placing one foot on a rail or ledge. However, keep your weight evenly balanced when standing. Don't lean to one side.
3. **Other Materials Handling Tasks**— Tasks such as lowering, pushing, pulling, and carrying can create hazards to the back as well. If the task feels uncomfortable or unnatural, utilize the alternative materials-handling techniques listed in this Back Safety Plan.
4. **Housekeeping**— Poor housekeeping: slippery floors, crowded work conditions, tools or other hazards on the floor can create slip, trip or fall hazards that can result in back injury.
5. **Poor Posture at Work**— Be aware of proper posture when sitting, standing, or reclining. When sitting, your knees should be slightly higher than your hips and your shoulders and upper back should be straight. When lying down or sleeping, keep your knees slightly bent. Sleeping on your stomach can lead to morning backache.
6. **Poor Lighting**— Poor lighting in the work area can lead to poor work practices that result in injuries of many types. Make sure lighting is adequate for the task at hand, replace burnt out bulbs, and point out hazardous areas to your immediate supervisor.

Other Back Safety Issues

Factors unrelated to work that can affect back safety, including such things as physical condition and posture, athletic or home-improvement activity, and tension and stress.

1. **Posture**— Whether your standing, sitting, or reclining, posture affects the amount of strain put on your back. The wrong posture increases strain on the back muscles and may bend the spine into the positions that will cause trouble. When standing correctly, the spine has a natural "S" curve. The shoulders are back and the "S" curve is directly over the pelvis. Good sitting posture should put your knees slightly higher than your hips. Your hips should be to the rear of the chair with your lower back not overly arched. Also, your shoulders and upper back are not rounded. Reclining posture is important, too. Sleep on your side with knees bent or sleep on your back. Sleeping on your stomach, especially on a sagging mattress with your head on a thick pillow, puts too much strain on the spine. Result: morning backache.
2. **Poor Physical Condition**— Your physical condition can lead to back pain. If you are overweight, and especially if you have developed a pot belly, extra strain on your spine results. An estimate is that every extra pound up front puts 10 pounds of strain on your back. When you are out of shape, the chances for chronic back pain are greater. Infrequent exercise is a major factor, too. A sudden strain on generally unused back muscles leads to trouble, particularly when there is a sudden twisting or turning of the back. Proper diet and exercise is the sensible way to help avoid back problems.
3. **Stress**— Stress is another factor that may lead to back pain. Tied in with your general physical condition, stress created from work or play can cause muscle spasms that affect the spinal nerve network. Although stress is part of everyone's life, and a certain amount of stress is normal, excessive stress causes backache. The solution is a balanced life style with time to relax.
4. **Repetitive Trauma**— People often think back injuries result from lifting heavy or awkward objects. Many back injuries, however, do not come from a single lift, but occur from relatively minor strains over time. Back injuries, as with other cumulative trauma disorders (CTD), may arise from repeated injuries. (But, repetitive, low-grade strains usually do not cause CTDs.) As the worker repeats a particular irritating movement, the minor injuries begin to accumulate and weaken affected muscles or ligaments. Eventually a more serious injury may occur. Thus, a specific weight lifted may actually have little to do with any single injury. Remember to use mechanical aids when appropriate along with good lifting techniques, whenever you do any lifting. You can lift safely when performed with caution.

Employee Handout Sheets

Back Safety Plan

These sheets can be copied and handed out to employees to train them on the written back safety plan.

This company has developed a written Back Safety Plan to provide information, techniques and procedures to help keep you and your back healthy.

Sprains and strains are the most common causes of lower back pain. Your back can be injured by improper lifting of moderate to heavy objects, falling, auto accidents and sports activities. But of these, lifting improperly is the largest single cause of back pain and injury. Luckily, you can do something about preventing back pain by knowing and using proper lifting techniques.

Along with the common cold, problems with the lower back are a frequent cause of lost work time and worker's compensation. The Bureau of Labor Statistics reported nearly 400,000 injuries (representing 17 percent of all occupational injuries or illnesses) from overexertion in lifting in 1992. Not only does industry lose, but you lose if you are laid up for weeks, unable to stay active.

Although with simple care and bed rest, most back pain goes away, a serious back injury or chronic back pain will require treatment. If the pain does not go away, or is accompanied by weakness or numbness in the lower limbs, you should see your doctor. Pain that radiates from the back to the buttocks and legs is typical of lower back disorders and is called sciatica.

When you go to your doctor, in addition to giving your medical history and having a physical exam, you may need other tests to determine the exact source of the pain. Today, equipment is available to help your physician determine problems.

Treatment may consist of bed rest, cold or hot packs, traction, physical therapy, or muscle-relaxing drugs.

Although our backs hold up well, our lifestyles and activities can lead to back pain. Here are some things that can go wrong.

Type of Injury	Facts About
Strains and Sprains	Can result from injury to muscles and ligaments that support the back. A torn ligament will result in severe back pain.
Ruptured or Slipped Disk	Is not uncommon and occurs when the disk (vertebral cushion) presses on a nerve.
Chronic Tension or Stress	Can result in muscle spasms and aggravate persistent and painful backaches.
Other Conditions	Such as pain "referred to the back" from other organs, such as the kidneys and prostate, can result in nagging back pain.

This company's written back safety plan addresses all relevant factors in this workplace that can contribute to back injury. All of the following factors can contribute to this problem:

- Improper Lifting Techniques
- Falls
- Poor Physical Condition
- Work in Uncomfortable Environments
- Repetitive Trauma
- Poor Posture
- Tension and Stress
- Inattention to Work Environment

If you ever have back pain when working, inform your supervisor immediately with a description of the task you were performing before and during the occurrence of pain. If you receive medical treatment of any kind for back pain or injury, let your supervisor know that as well.

Employee Sign-Off Sheet

Back Safety Plan

I acknowledge I have been given a copy of the Back Safety Plan, I have read and understood it, and I accept the plan as a working document which I will support and follow in my daily work at _____ (company name).

Employee Signature _____ Date _____

Supervisor's Signature _____

Company Name _____

Safety & Security
Manager's Signature _____

(Use the form above and/or below to document employee training/information)

I acknowledge I have been trained on and been informed how to get access to a copy of the Back Safety Plan, I have understood this training, and I will support and follow this plan in my daily work at _____ (company name).

Employee Signature _____ Date _____

Supervisor's Signature _____

Company Name _____

Safety & Security
Manager's Signature _____



Notes

