CLOW STAMPING COMPANY

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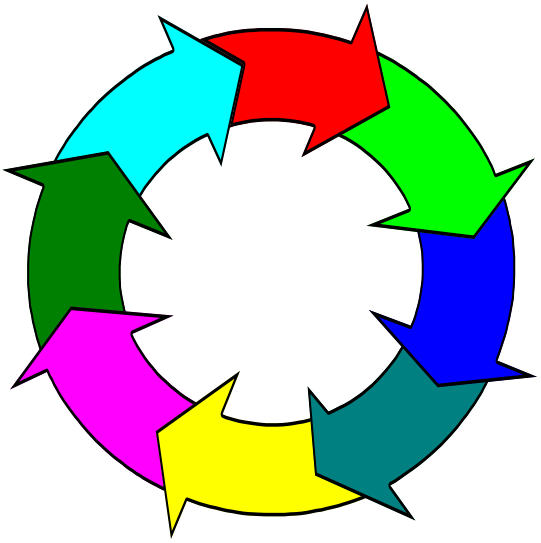
# Clow Stamping Company

# Safety & Health Manual



## Safety Starts the Process

**Rev 2018**

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**CLOW STAMPING COMPANY**
**SAFETY MANUAL**

This safety manual is designed to assist you in a safe and productive employment. Please read it carefully. You are responsible for understanding and complying with the enclosed material. If you have questions or concerns, see your supervisor.

All Employees shall comply with all occupational safety and health, standards, rules, regulations, and orders issued under the Act (O.S.H.A) that apply to their own actions and conduct on the job.

## SAFETY STATEMENT

Purpose:
To provide a healthy and safe work environment for all employees.

Clow Stamping Company believes the safety and health of employees is of primary importance. Safety does not just happen; it requires commitment by everyone, from the production line to upper management.

Management is committed to providing a safe work environment conducive to work practices and policies.

Clow Stamping Company's goal is to eliminate work related safety and health injuries to employees and to provide a safe work environment. To achieve this goal, we will concentrate our efforts in the following areas:

1. Provide employee training and education.

2. Maintain active in-house safety committees.

3. Assess hazards in the workplace.

4. Maintain safe operating equipment.

5. Associate with safety and health organizations.

## PERSONAL PROTECTIVE EQUIPMENT
## (O.S.H.A) STANDARDS

An assessment is made of all departments to determine if hazards are present, or likely to be present, which necessitate the use of personal protective equipment. If such hazards are present, or likely to be present, the employee will wear the selected types of P.P.E. that will protect the affected employee from the hazards identified in the hazard assessment.

### 1910.133 EYE AND FACE PROTECTION

Each affected employee shall use the appropriate eye or face protection when exposed to eye or face hazards from flying particles, liquid chemicals, or injurious light radiation. Each affected employee shall use eye protection that provides side protection when there is a hazard from flying objects.

### 1910.135 HEAD PROTECTION

Each affected employee shall wear protective helmets when working in areas where there is a potential for injury to the head from falling objects.

### 1910.136 FOOT PROTECTION

Each affected employee shall wear protective footwear when working in areas where there is a danger of foot injuries due to falling and rolling objects, or objects piercing the sole, and where such employee's feet are exposed to electrical hazards.

### 1910.138 HAND PROTECTION

Each affected employee shall wear appropriate hand protection when employee's hands are exposed to hazards such as those from skin absorption of harmful substances, severe cuts or lacerations, chemical burns, or temperature extremes.

P.P.E. devices alone should not be relied upon to provide protection against hazards. It is the responsibility of the employee to work in a safe manner.

## EYE WEAR POLICY

(Effective 11/01/2016)

Clow Stamping Company will comply with OSHA Standard 1910.133 Eye Protection. Each affected employee shall use eye protection that provides side protection in the following departments:

- Welding/Spot Welding
- Maintenance
- Press Room
- Tool and Die
- Production Supervisors
- Assembly
- Shear
- Buffing and Grinding

This policy includes office personnel, visitors, vendors and customers of Clow Stamping Company while in any area / department that requires safety glasses to be worn. Over the glass safety eye wear can be worn in conjunction with prescription glasses.

If prescription eye wear is safety rated and has attached side shields no other protection is required.

Criteria for safety eye wear:
Protective eyewear must comply with ANSI Standard Z87.1

Clow has a reimbursement program on any safety eyewear purchased. For additional information, see your Supervisor or the employee handbook.

## FOOT PROTECTION POLICY

(Effective 11/1/2016)

Clow Stamping Company will comply with O.S.H.A. Standard 1910.136 Foot Protection having steel or composite toe along with metatarsal protection is required in the following departments:

- Welding/Spot Welding
- Maintenance
- Press Room
- Shipping and Receiving
- Tool and Die
- Production Supervisors
- Assembly
- Shear
- Buffing and Grinding
- Trucking

Office personnel are required to wear closed toe shoes. Open toe shoes, flip flops, sandals etc. are not allowed.

Note: Fiberglass is also available and meets the same standard as steel (ANSI Standard) this is acceptable.

Criteria for protective footwear:

Protective footwear purchased after July 5, 1994 shall comply with ANSI Z41-1991
Protective footwear purchased before July 5, 1991 shall comply with the ANSI Z14.1-1967. The Company has a reimbursement program on any safety shoes purchased. For additional information, see your Supervisor or the employee handbook.

# Clow Stamping Company
# Laser Safety Program

# CL-7 CNC CINCINNATI
# Fast-Axial Flow $CO_2$
# Class IV Laser

## I. FUNDAMENTALS OF LASER OPERATION

The term "LASER" is an acronym. It stands for "Light Amplification by Stimulated Emission of Radiation." Thus the laser is a device which produces and amplifies light. The mechanism, by which this is accomplished, stimulated emission, was first postulated by Albert Einstein in 1917. The light, which the laser produces, is unique, for it is characterized by properties which are very desirable, but almost impossible to obtain by any means other than the laser.

### *A. ENERGY LEVELS*

Light can be produced by atomic processes, and it is these processes which are responsible for the generation of laser light. Let's look first at atomic energy levels and then see how changes in these energy levels can lead to the production of laser light.

A number of simplifications will be made regarding the concept of the atom. It can be assumed, for the purposes of this discussion, that an atom consists of a small dense nucleus and one or more electrons in motion about the nucleus.

The relationship between the electrons and the nucleus is described in terms of energy levels. Quantum mechanics predicts that these energy levels are discrete.

### *B. RADIATIVE TRANSITIONS*

The electrons normally occupy the lowest available energy levels. When this is the case, the atom is said to be in its ground state. However, electrons can occupy higher energy levels, leaving some of the lower energy states vacant or sparsely populated. One way that electrons and atoms can change from one energy state to another is by the absorption or emission of light energy, via a process called a radioactive transition.

### *C. ABSORPTION*

An electron can absorb energy from a variety of external sources. From the point of view of laser action, two methods of supplying energy to the electrons are of prime importance. The first of these is the transfer of all the energy of a photon directly to an orbital electron. The increase in the energy of the electron causes it to "jump" to a higher energy level; the atom is then said to be in an "excited" state. It is important to note that an electron can accept only the precise amount of energy that is needed to move it from one allowable energy level to another. Only photons of the exact energy acceptable to the electron can be absorbed. Photons of slightly more (or slightly less) energy will not be absorbed. Another means often used to excite electrons is an electrical discharge. In this technique, the energy is supplied by collisions with electrons which have been accelerated by an electric field. The result of either type of excitation is that through the absorption of energy, an electron has been placed in a higher energy level than it originally resided. As a result, the atom of which it is a part is said to be excited.

### *D. SPONTANEOUS EMISSION*

The nature of all matter is such that atomic and molecular structures tend to exist in the lowest energy state possible. Thus, an excited electron in a higher energy level will soon attempt to DE-EXCITE itself by any of several means. Some of the energy may be converted to heat.

Another means of de-excitation is the spontaneous emission of a photon. The photon released by an atom as it is de-excited will have a total energy exactly equal to the difference in energy between the excited and lower energy levels. This release of a
Photon is called spontaneous emission. One example of spontaneous emission is the common neon sign. Atoms of neon are excited by an electrical discharge through the tube. They de-excite themselves by spontaneously emitting photons of visible light.

NOTE: the exciting force is not of a unique energy, so that the electrons may be excited to any one of several allowable levels.

*E. STIMULATED EMISSION*

In 1917, Einstein postulated that a photon released from an excited atom could, upon interacting with a second, similarly excited atom, trigger the second atom into de-exciting itself with the release of another photon. The photon released by the second atom would be identical in frequency, energy, direction, and phase with the triggering photon, and the triggering photon would continue on its way, unchanged. Where there was one photon now there are two. These two photons could then proceed to trigger more through the process of stimulated emission. If an appropriate medium contains a great many excited atoms and de-excitation occurs only by spontaneous emission, the light output will be random and approximately equal in all directions. The process of stimulated emission, however, can cause an amplification of the number of photons traveling in a particular direction - a photon cascade if you will.
A preferential direction is established by placing mirrors at the ends of an optical cavity. Thus the number of photons traveling along the axis of the two mirrors increases greatly and Light Amplification by the Stimulated Emission of Radiation may occur. If enough amplification occurs, LASER beam is created.

*F. POPULATION INVERSION*

Practically speaking, the process of stimulated emission will not produce a very efficient or even noticeable amplification of light unless a condition called "population inversion" occurs. If only a few atoms of several million are in an excited state, the chances of stimulated emission occurring are small. The greater the percentage of atoms in an excited state, the greater the probability of stimulated emission. In the normal state of matter the population of electrons will be such that most of the electrons reside in the ground or lowest levels, leaving the upper levels somewhat depopulated. When electrons are excited and fill these upper levels to the extent that there are more atoms excited than not excited, the population is said to be inverted.

*G. LASER COMPONENTS - (Physical Principles and Construction)*

A generalized laser consists of a lasing medium, a "pumping" system and an optical cavity. The laser material must have a metastable state in which the atoms or molecules

can be trapped after receiving energy from the pumping system. Each of these laser components are discussed below:

1. Pumping Systems
   a. The pumping system imparts energy to the atoms or molecules of the lasing medium enabling them to be raised to an excited "metastable state" creating a population inversion. Optical pumping uses photons provided by a source such as a Xenon gas flash lamp or another laser to transfer energy to the lasing material. The optical source must provide photons which correspond to the allowed transition levels of the lasing material.
   b. Collision pumping relies on the transfer of energy to the lasing material by collision with the atoms (or molecules) of the lasing material. Again, energies which correspond to the allowed transitions must be provided. This is often done by electrical discharge in a pure gas or gas mixture in a tube.
   c. Chemical pumping systems use the binding energy released in chemical reactions to state.

2. Optical Cavity
   An optical cavity is required to provide the amplification desired in the laser and to select the photons which are traveling in the desired direction. As the first atom or molecule in the metastable state of the inverted population decays, it triggers via stimulated emission, the decay of another atom or molecule in the metastable state. If the photons are traveling in a direction which leads to the walls of the lasing material, which is usually in the form of a rod or tube, they are lost and the amplification process terminates. They may actually be reflected at the wall of the rod or tube, but sooner or later they will be lost in the system and will not contribute to the beam.

   If, on the other hand, one of the decaying atoms or molecules releases a photon parallel to the axis of the lasing material, it can trigger the emission of another photon and both will be reflected by the mirror on the end of the lasing rod or tube. The reflected photons then pass back through the material triggering further emissions along exactly the same path which are reflected by the mirrors on the ends of the lasing material. As this amplification process continues, a portion of the radiation will always escape through the partially reflecting mirror. When the amount of amplification or gain through this process exceeds the losses in the cavity, laser oscillation is said to occur. In this way, a narrow concentrated beam of coherent light is formed.
   The mirrors on the laser optical cavity must be precisely aligned for light beams parallel to the axis. The optical cavity itself, i.e., the lasing medium material must not be a strong absorber of the light energy.

3. Laser Media:
   Lasers are commonly designated by the type of lasing material employed. They're four types which are: solid state, gas, dye, and semiconductor. The characteristics of each type will be described.

*H. CARBON DIOXIDE LASER*

The carbon dioxide laser is the most efficient and powerful of all CW laser devices. Continuous powers have been reported above 30 kilowatts at the far infrared 10.6 μm wavelength.

An electrical discharge is initiated in a plasma tube containing carbon dioxide gas. CO(2) molecules are excited by electron collisions to higher vibration levels, from which they decay to the metastable vibration level occurs; which has a lifetime of approximately 2x10(-3) seconds at low pressure of a few Torr. Establishing a population inversion between certain Vibration levels leads to lasing transitions at 10.6 μm, while a population inversion between other vibration levels can result in lasing transitions at 9.6 μm. Although lasing can be obtained in a plasma tube containing CO(2) gas alone, various gases usually added, including N(2), He, Xe, CO(2) and H(2)O. Such additives are used to increase the operating efficiency of CO(2) lasers. The most common gas composition in CO(2) lasers is a mixture of He, N(2) and CO(2).

Carbon dioxide lasers are capable of producing tremendous amounts of output power, primarily because of the high efficiency of about 30%, as compared to less than 0.1% for most HeNe lasers. The principal difference between the CO(2) and other gas lasers is that the optics must be coated, or made of special materials, to be reflective or transmissive at the far infrared wavelength of 10.6 μm. The output mirror can be made of germanium, which, if cooled, has very low loss at 10.6 μm.
There are three common laser cavity configurations of the CO(2) laser. The first is the gas discharge tube encountered with the discussion of the HeNe laser. Secondly is the axial gas flow, where the gas mixture is pumped into one end of the tube and taken out the other. The gas flow allows for the replacement of the CO(2) molecules depleted (disassociated CO(2) molecules) by the electrical discharge. Nitrogen is added to the CO(2) to increase the efficiency of the pumping process and transfers energy by collisions. Associated effects enhance the de-excitation process. Helium is added to the mixture to further increase the efficiency of the process of pumping and stimulated emissions. The third method is the transverse gas flow. This technique can produce CO(2) laser emissions at power levels approaching 25 kW.

The CO(2) laser has a strong emission wavelength at 10.6 micrp m. There is another strong line at 9.6 miceo m and a multitude of lines between 9 and 11 μm. CO(2) lasers are highly efficient (10-30%), give high output powers (used for welding and cutting), and applications out-of-doors can take advantage of low transmission loss atmospheric window at about 10 μm.

## II. BIOEFFECTS OF LASER RADIATION ON THE EYE AND SKIN

Laser radiation of sufficient intensity and exposure time can cause irreversible damage to the skin and eye of man. The most common cause of laser induced tissue damage are thermal in nature. The process is one where the tissue proteins are denatured due to the temperature rise following absorption of laser energy. The thermal damage process is generally associated with lasers operating at exposure times greater than 10 microseconds and in the wavelength region from the near ultraviolet to the far infrared (0.315 - 103 μm).
Other damage mechanisms have also been demonstrated for other specific wavelength ranges and/or exposure times. For example, photochemical reactions are the principal cause of tissue damage following exposures to either actinic ultraviolet radiation (200 - 315 nm) for any exposure time or "short- wave" visible radiation (400 - 550 nm) when exposures are greater than 10 seconds. Tissue damage may also be caused by thermally induced acoustic-shock waves following exposures to very short-time laser exposures (submicrosecond).

### *A. ULTRAVIOLET EFFECTS ON THE SKIN*

The ultraviolet spectrum is divided into three specific regions which are related to the different biological responses of these regions. In the skin, UV-A (315 - 400 nm) can cause erythema and hyperpigmentation.

In addition to thermal injury caused by ultraviolet energy, there is the possibility of radiation carcinogenesis from UV-B (280 - 315 nm) either directly on DNA or from effects on potential carcinogenic intra-cellular viruses.

On the basis of these studies with non-coherent ultraviolet radiation, exposure in the UV-B range is most injurious to skin. Exposure in the shorter UV-C (200 - 280 nm) and the longer UV-A ranges seems less harmful to human skin. The shorter wavelengths are absorbed in the outer dead layers of the epidermis (stratum corneum) and the longer wavelengths have an initial pigment-darkening effect followed by erythema if there is exposure to excessive levels.

It should be kept in mind that phototoxic and photosensitizing chemicals in the skin may potentiate the effects of laser operating in the visible and ultraviolet regions. Studies on the stimulating effect of very low level exposures of the ruby laser on hair growth, phagocytosis index and wound healing are of interest in any consideration of chronic effects.

Healing of laser induced skin lesions is similar to any localized thermal wound and should be medically treated in a similar fashion. Laser induced lesions on the retina tissues of the eye will usually cause irreversible vision function loss and is difficult to medically treat.

*B. OCULAR EFFECTS OF LASER RADIATION*

The principal hazard associated with laser radiation is exposure to the eye. This is particularly important in the visible and near-infrared spectral regions (400 - 1400 nm). There are, however, other serious potential hazards in other spectral regions as outlined in the following sections. The eye may be conceptually considered as a slightly flattened globe which is transparent to the light passing through an aperture pupil) and which has an efficient light absorber on the inside (retinal surface), opposite the aperture. The transparent region of the eye includes several structures which operate to control the exposure to the retina.

The cornea, the transparent window, is the primary refracting structure of the eye. Because of the differences in refractive indices of air and the cornea, more than 80 percent of the refraction of

light takes place as the light enters the eye. Between the cornea and the lens is one of the two chambers of the eye. The aqueous chamber contains the aqueous fluid.

The lens is the dynamic refractive medium in the eye, and is responsible for the range of focus of the eye. The retina is the light absorbing structure of the eye containing the neural receptors which initiate the vision process. A blind spot in the retinal surface is located at the point where the optic nerve enters into the eye. The fovea is the portion of the retina which is most sensitive to detail and which discriminates color. This structure fills an angle of approximately two degrees in the central portion of the retina. The fovea is located in a small dip in the center of the area called the macula lutea. The macula fills an area of about 1 mm diameter.

The various structures of the eye transmit, reflect, and absorb optical energy. The effects of laser exposure on the retina are influenced by the transmission losses of the ocular media. The transmittance of the ocular media are such that retinal effects can be anticipated only for laser wavelengths between 400 nm and 1400 nm. Outside that range, structures other than the retina are affected.

The retinal effects of visible optical radiation are also influenced to some degree by the size of the retinal image and the time duration of the laser exposure.

## III. LASER & LASER SYSTEM CLASSIFICATIONS

The intent of laser hazard classification is to provide warning to users by identifying the potential hazards associated with the corresponding levels of accessible laser radiation through the use of labels and instruction. It also serves as a basis for defining appropriate control measures and medical surveillance.

Lasers and laser systems received from manufacturers shall be classified and appropriately labeled by the manufacturer. However, the classification may change whenever the laser or laser system is modified to accomplish a given task.

Also, the Laser Safety Officer (LSO) shall affect the classification designation in cases where the laser or laser system classification is not provided or where the class level may change because of alterations to the laser or laser system.

It should be mentioned that the U.S. Federal Government does not "approve" laser systems. The manufacturer of the laser system first classifies the laser and then certifies that it meets all performance requirements of the Federal Laser Product Performance Standard (FLPPS).

Therefore, all lasers and laser systems that are manufactured by a company, or purchased by a company and relabeled and placed into commerce, or incorporated into a system and placed into commerce, shall be classified in accordance with the FLPPS. The classification shall be confirmed by the LSO at the laser installation.

### *A. LASER HAZARD CLASSES*

Virtually all of the U.S. and international standards divide all lasers into four major hazard categories called the laser hazard classifications.
The basis of the classification scheme is the ability of the primary or reflected primary beam to cause biological damage to the eye or skin during intended use. The criteria is established relative to the Maximum Permissible Exposure (MPE) levels that are accessible during operation of the laser.
Lasers and laser systems are assigned one of four broad Classes (I to IV) and Optical Fiber Communications Systems (OFCS) are assigned one of four service groups (SG1, SG2, SG3a, SG3b) depending on the potential for causing biological damage.

1. **CLASS I** - cannot emit laser radiation at known hazard levels (typically CW: 0.4 μwatts at visible wavelengths). Users of a Class I laser products are generally

exempt from radiation hazard controls during operation and maintenance (but not necessarily during service).

Since lasers are not classified on beam access during service, most all Class I industrial lasers will consist of a higher class (high power) laser enclosed in a properly interlocked and labeled protective enclosure. In some cases, the enclosure may be a room (walk-in protective housing) which requires a means to prevent operation when operators are inside the room.

2. **CLASS II** - low power visible lasers which emit above Class I levels but emitting a radiant power not above 1 mW. The concept is that the human aversion reaction to bright light will protect a person.

NOTE: Class IIA is a special designation that is based upon a 1000 second exposure and applies only to lasers that are "not intended for viewing" such as a supermarket laser scanner. The upper power limit of Class IIA is 4.0 μW. These are products whose emission does not exceed the Class I limit for an emission duration of 1000 seconds.

3A. **CLASS IIIA** - intermediate power lasers (CW: 1-5 mW). Only hazardous for intrabeam viewing. Some limited controls are usually recommended.

NOTE: There are different labeling requirements for Class IIIA lasers with a beam irradiance that does not exceed 2.5 mW/cm(2) (Caution logotype) and those where the beam irradiance does exceed 2.5 mW/cm(2) (Danger logotype).

3B. **CLASS IIIB** - moderate power lasers (CW: 5-500 mW, pulsed: 10 J/cm(2) - or the diffuse reflection limit, which ever is lower). In general, Class IIIB lasers will not be a fire hazard nor are not generally capable of producing a hazardous diffuse reflection except for conditions of intentional staring done at distances close to the diffuser. Specific controls are recommended.

4. **CLASS IV** - High power lasers (cw: 500 mW) are hazardous to view under any condition (directly or diffusely scattered) and are a potential fire hazard and a skin hazard. Significant controls are required of Class IV laser facilities.

## IV. CONTROL MEASURES

*A. LASER CONTROLLED AREAS*

1. Laser devices shall be isolated in an area designed solely for laser operations.
2. Access to such an area shall require appropriate authorization.
3. Special emphasis shall be placed on control of the path of the laser beam.
4. All persons using such lasers or laser systems shall be duly informed about the potential hazards of laser operations.
5. Only authorized personnel shall operate laser systems.
6. Visitors shall not be permitted into the laser-controlled area unless appropriate supervisory approval has been obtained and protective measures taken.
7. Alignment of laser optical systems (mirrors, lenses, beam deflectors, etc.) shall be performed in such a manner that the primary beam or specular reflections cannot expose the eye to a level above the appropriate intrabeam MPE.
8. Whenever possible, the entire beam path, including the interaction area, that is, the area in which irradiation of materials by the primary or secondary beam occurs, should be enclosed.

9. Enclosures should be equipped with interlocks so that the laser system will not operate unless such enclosures are properly installed.
10. For pulsed systems, interlocks shall be designed so as to prevent firing of the laser by dumping the stored energy into a dummy load. For cw lasers, the interlocks shall turn off the power supply or interrupt the beam by means of shutters.
11. Interlocks shall not allow automatic reenergizing of the power supply but shall be designed so that after tripping the interlock, the power supply or shutter must be reset manually.
12. Eye protection devices which are designed for protection against radiation from a specific laser system shall be used when engineering and procedural controls are inadequate to eliminate potentially hazardous exposures.
13. Whenever possible, the laser system should be fired and monitored only from remote positions.
14. An alarm system (e.g., an audible sound or a warning light which is visible through protective eyewear) or a verbal "countdown" command should be used prior to activation.
15. The audible system may consist of a bell or chime which commences when a pulsed laser power supply is charged for operation, for example, during the charging of capacitor banks. Systems should be used in which a warning will sound intermittently during the charging procedure (pulsed systems) and continuously when fully charged.
16. In order to safely operate a Class IV laser or laser system, a laser warning system shall be installed.
    a. A laser activation warning light assembly shall be installed outside the entrance to each laser room facility containing a Class IV laser or laser system.
    b. In lieu of a blinking entryway warning, the entryway light assembly may alternatively be interfaced to the laser in such a manner that a light will indicate when the laser is not operational (high voltage off) and by an additional light when the laser is powered up (high voltage applied) but not operating and by an additional (flashing) light when the laser is operating.
    c. A laser warning sign shall be posted both inside and outside the laser controlled area.
17. Under conditions where the entire beam path is not enclosed, safety latches or interlocks shall be used to prevent unexpected entry into laser controlled areas.
18. Such measures shall be designed to allow both rapid egress by the laser personnel at all times, and admittance to the laser controlled area in an emergency condition.
19. For such emergency conditions, a "panic button" (control-disconnect switch or equivalent device) shall be available for deactivating the laser.
20. Under conditions where the entire beam path is not completely enclosed, access to the laser controlled area shall be limited only to persons wearing proper laser protective eyewear when the laser is capable of emission.
21. In this case all other optical paths (for example, windows) from the facility shall be covered or restricted in such a way as to reduce the transmitted intensity of the laser radiation to levels at or below the MPE for direct irradiation of the eye.
22. Specularly reflecting surfaces which are not required when using the laser shall be removed from the beam path.

Control measures shall be devised to reduce the possibility of exposure of the eye and skin to hazardous laser radiation and to other hazards associated with the operation of lasers and laser

systems. This applies during normal operation and maintenance by users, as well as by Manufacturers during the manufacture, testing, alignment, servicing, etc. of lasers and laser systems.

There are four basic categories of controls useful in laser environments. These are engineering controls, personal protective equipment, administrative and procedural controls, and special controls. The controls to be reviewed here are based upon the recommendations of the ANSI Z-136.1 standard.
Designs for lasers, laser systems, and the associated work areas shall be predicated upon the classification of the laser or lasers used. Generally, all purchased systems will be classified by the manufacturer in accordance with the Federal Standard. However, it is the responsibility of the LSO to confirm the classification and recommend or approve all control measures prior to laser equipment or facility use. Important in all controls is the distinction between the functions OF OPERATION, MAINTENANCE AND SERVICE. First, laser systems are classified on the basis of level of the laser radiation accessible during operation. Maintenance is defined as those tasks specified in the user instructions for assuring the performance of the product and may include such tasks as routine cleaning or replenishment of expendables. Service functions are usually performed with far less frequency than maintenance functions (vis: replacing the laser resonator mirrors, repair of faulty components) and often will require access to the laser beam by those performing the service functions. Service functions should be clearly delineated as such in the product's manuals.

## IV. NONRADIATION HAZARDS OF LASERS

*1. INDUSTRIAL HYGIENE CONSIDERATIONS*

Potential hazards associated with compressed gases, pryogenic materials, toxic and carcinogenic materials and noise should be considered. Adequate ventilation shall be installed to reduce noxious or potentially hazardous fumes and vapors, produced by laser welding, cutting and other target interactions, to levels below the appropriate threshold limit values, e.g., American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values (TLV's).

*2. EXPLOSION HAZARDS*

High pressure arc lamps and filament lamps or laser welding equipment shall be enclosed in housings which can withstand the maximum pressures resulting from lamp explosion or disintegration. The laser target and elements of the optical train which may shatter during laser operation shall also be enclosed.

*3. OTHER NON-BEAM OPTICAL RADIATION HAZARDS*

This relates to optical beam hazards other than laser beam hazards. Ultraviolet radiation emitted from laser discharge tubes, pumping lamps and laser welding plasmas shall be suitably shielded to reduce exposure to levels below the ANSI Z-136.1 (extended source) and/or ACGIH - TLV's.

*4. COLLATERAL RADIATION*

Radiation, other than laser radiation, associated with the operation of a laser or laser system, e.g., radiofrequency (RF) energy associated with some plasma tubes, x-ray emission associated with the high voltage power supplies used with excimer lasers, shall be maintained below the applicable protection guides. The appropriate protection guide for RF and microwave energy is that given in the American National Standard "Safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 kHz to 100 GHz," ANSI C95.1; the appropriate protection guides for exposure to X-ray

emission is found in the Department of Labor Occupational Safety and Health Standards, 29 CFR Part 1910.96 and the applicable State Codes. Lasers and laser systems which, by design, would be expected to generate appreciable levels of collateral radiation, should be monitored.

5. *ELECTRICAL HAZARDS*
The intended application of the laser equipment determines the method of electrical installation and connection to the power supply circuit (for example, conduit versus flexible cord). All equipment shall be installed in accordance with the National Electrical Code and the Occupational Safety and Health Act. [Additional specific recommendations can be found in Section 7.4 of ANSI Z136.1 (1986)].

6. *FLAMMABILITY OF LASER BEAM ENCLOSURES*
Enclosure of Class IV laser beams and terminations of some focussed Class IIIB lasers, can result in potential fire hazards if the enclosure materials are exposed to irradiances exceeding (Equation, SEE PAPER COPY.) Plastic materials are not precluded as an enclosed material but their use and potential for flammability and toxic fume release following direct exposure should be considered. Flame resistant materials and commercially available products specifically designed for laser enclosures should also be considered.

**IV. DIFFUSE REFLECTION** In practice, most slightly rough non-glossary surfaces act as diffusing surfaces to incident laser beams. A diffusing "rough" surface acts as a plane of very small scattering sites that reflect the beam in a radically symmetric manner. The roughness of the surface is such that the scattering sites are larger than the laser wavelength.

It should be stressed that "rough" surfaces do not always act as diffuse reflectors at ALL WAVELENGTHS. For example, brushed aluminum (which is partially diffuse for visible wavelength laser radiation) is a good specular (mirror-like) reflector for far-infrared wavelength lasers such as the CO(2) laser (10.6 μm). However, if the metal surface is melting (such as during a laser welding process) the laser beam back reflected from the weld puddle will usually obey a cosine scattering relationship.

Additionally, most slightly "rough" surfaces may still have some properties that also contribute some specular reflection component. This may occur with just a few percent of the incident radiation specularly reflected and the remainder diffusely reflected. This behavior is generally the rule, and not the exception, for most common surfaces. As a result, a constant power distribution of the reflected radiation is not exactly radically symmetric, but will skews toward the specularly reflected component.

A laser beam reflected from a diffuser is often expressed in radiant energy units which combine the reflected radiant power (or energy) with the geometry of a solid angle "cone" and the reflected "source" area.

For comparative purposes, consider that staring directly at a standard 100 watt frosted light bulb at close range is equivalent to viewing a diffuse light source with a radiance of about 40 mW/cm(2)sr. Hence the diffuse reflection of a 1 mW HeNe laser directed onto a wall 10 meters away is over 100 times less "bright" than viewing a 100 watt diffused light bulb! Hence diffuse viewing of low power laser light can offer no more hazard (and maybe less) than more conventional light sources. The dividing point between hazardous and non hazardous diffuse

reflections with cw lasers is generally considered to be 0.5 watt (the dividing point between cw Class IIIB and Class IV
lasers).

**NOMINAL HAZARD ZONE (NHZ) DISTANCE VALUE**

| | **Exposure Criteria** | | **Hazard Range Meters** | |
|---|---|---|---|---|
| **Laser** | | **Diffuse** | **Lens on Laser** | **Direct** |
| CO2 | 8 hours | 0.4 | 5.3 | 309 |
| 500 watt | 10 seconds | 0.4 | 5.3 | 309 |
| 106 um | | | | |

**Laser Criteria used for NHZ distance calculations :**

| | |
|---|---|
| Wavelength (um) | 10.6 |
| Beam Power (Watts) | 500.0 |
| Beam Divergence (mrad) | 2.0 |
| Beam Size at aperture (mm) | 20.0 |
| Beam Size at lens (mm) | 30.0 |
| Lens focal length | 200.0 |
| MPE for 8 hours(uW/cm2) | 1.0 x10 5 |
| MPE for 10 seconds (uW/cm 2) | 1.0 x 10 5 |
| MPE for 0.25 second (uW/cm 2) | ---------- |

Under normal operation no special glasses are needed other then poly-carbonate safety glasses.

Special Laser Glasses are required for beam alinement only.

## Light Curtain Safe Distance

*Step One*: Check the blue display box for current setting RDY, FB-1, FB-2, FB-3.
*Step two*: Check the speed of or strokes per minute the press is operating at (if applicable). Some presses have variable settings that you can change the strokes per minute. All of the Stamtec presses have this option and some of the Blow presses. Some of the older presses can be adjusted to operate faster or slower if desired. It is very important that the speed of the press be noted when checking the safe distance of the press.
*Step three*: Check the information sheet on the press for safe distance per setting of the blue display box and speed of press.
*Step four*: Check the safe distance from the closest pinch on the bed of press this could be the tool, stripper, guide post, or anything else that could create a pinch point.
*Step five*: Once you establish the pinch point you want to check use a tape measure and square. Butt the end of tape measure to the pinch point you are checking holding it parallel to the bed of the press. Slide the square down the tape measure towards the object you are checking watch the green display light, when the beam is broken the light will turn from green to red. Check the reading of tape measure; when the display turns from green to red. The reading must be equal to or greater then the posted number on the information sheet that matches the speed of press and the blue display box setting.
*Step six*: Sign and date the job card.

## Pullout / Set up

*Step one*: With the ram all the way at the top of stroke check the operators over reach, the operator should be able to reach enough to put the part in the stops or perform the operation they are doing. Set the reach so they can do this. Do not give them excess amount of reach that is not needed this would cause excess cable to be caught around objects that could cause harm to the operator. If an adjustment needs to be made it is done by the chain setting with the ram at the top of stroke.
*Step two*: lower the press ram down watching for pinch points; their can be more then one. Guide post, stripper, tool, pad, punch, etc. all must be cleared when the ram is coming down. The last place the ram is stopped at and checked is when the ram is lowered so the tools have a one inch gap between them it will be before reaching the bottom of the stroke.
*Step three*: With the ram at a one inch gap from closing at any pinch point the operator's finger tips need to be pulled back at least one inch from any danger point. Adjust the crank handle to make any settings for this.

## Hand Control

*Step one*: Check the label on press for correct safe distance.
*Step two*: Place the hand controls tight against the bed of press before checking (if they are movable).
*Step three*: Check the distance from the closest pinch point to the center of the palm buttons they must be located equal to or greater then the posted number. Use a tape measure to check the distance.

Company policy: All presses equipped with light and pullouts will have them both set for compliance. Exceptions to this would be presses that have light curtains that are not made to be adjusted; only the pullout device need to be set for compliance on these presses or presses that only are using the light curtain solely.

## OVERHEAD PULLOUTS

PULL OUTS MUST BE WORN AT ALL TIMES WHEN OPERATING PRESS MACHINES.

The only exceptions are as follows:

1. If you are operating a press that requires double hand control for operation, you need not wear pullouts.

2. If you are wearing restraints, you need not wear pull-outs.

3. If the press has only light curtains on it.

4. If the tool is barrier guarded, you need not wear pull-outs.

5. Guarding by distance can be used on (Pressbrakes only). If the total duration of the job and similar jobs are less than 2 hours annually, and the safe distance of 10 inches is held from the punch to the tip of the employee's fingers when the part is held in the stops. Also operator experience must be taken into consideration when a safe distance is used.

6. If their is no way to safe guard the point of operation the job must not be run. Alternative measures must be taken to provide a means to safe guard the point of operation. If the tool can not be guarded the safety Inspector is not to sign the card, the problem is to be brought to the attention of Management.

7. If the tool has other pinch points from the punch and die; strippers, guide post, etc. on the tool and the pullouts cannot be set to re-tract the operators hands safely from all of these areas the job cannot be run with pullouts. One option and most likely the best would be to operate the press on hand control.

8. Primary safe guards are pull outs, restraints, hand controls and barrier. Light curtains are used as secondary safety devices. Both the primary and secondary safety devices must be used if the press is equipped with both, any deviation from this rule must be management approved from the shift Supervisor or Risk Manager.

**INSTRUCTION CARD FOR MODEL J SAFEGUARDS PAGE BEFORE ADJUSTING AND WHEN USING THE MODEL J SAFEGUARD**

BE SURE ... The Operator is wearing his wristlets and wearing them properly as illustrated on the back of this card.
BE SURE ... Wristlets are properly attached to the cables at all times and the cable snaps are firmly closed. Do not allow the operator to wear rings or any object, which might become caught while working at the press. Do not place hands in danger while adjusting. Always adjust the Safeguard for the operator who will be using it.

ADJUST THE SAFEGUARD IN FOUR STEPS

# Safety Device protects hands

## DOWNWARD MOVEMENT OF THE RAM ACTUATES PULL-BACK OF POSSONS SAFETY DEVICE

### NORMAL OPERATION

**WITH DIE OPEN:** Material is placed.

**CLOSING DIE:** Operator normally removes hand before descent of ram. Note: In this case, hand is free of any pulling action by the cord.

**DIE IS CLOSED:** Hand is back, free to reach material for next cycle.

### OPERATOR FORGETS OR PRESS REPEATS

**WITH DIE OPEN:** Material is placed.

**CLOSING DIE:** Should the operator fail to remove his hand voluntarily, the cord exerts a pull to remove the hand from the danger area. Accelerated pull begins as the ram starts to descend. If the press should repeat, the operator is afforded the same protection.

**DIE IS CLOSED:** Hand is back, free to reach material for next cycle.

**What it does** The Possons Safety Device will provide protection for your press operator if, for any reason, the ram descends while his hands are under or between the dies. The operator, after placing the stamping in the die, normally takes his hands to a safe position when reaching for the next part to be processed. Should he fail to do so, the device, activated by each stroke of the press, removes hands from danger. This is also the case should the press repeat. When the ram descends there is no jerk or pull on the hands unless they are left in or near the danger zone.

3

STEP # 1 - Adjusting Reach - Chain Adjustment "A".

A. With Ram at top dead center, adjust the reach to restrain the operator from reaching any further than is necessary to feed the part.
B. To do this, remove the locking pin and turn the hex head sprocket shaft with a 3/4 wrench.
C. Turn in the direction that pulls the chain downward and retracts the cables.
D. Secure this adjustment by inserting the locking pin in the hole that lines up with a sprocket tooth space.
E. Secure locking pin with a hairpin cotter on each end of the locking pin. Be sure cotter pins are secure.

STEP #2 - Checking hand and finger clearance at all intermediate points in the press stroke on the down stroke only.

NOTE: BEFORE AND DURING Step #2 you must check to be sure there are no bolts, clamps, stops, air blasts, dowel pins, knockout pins, the production part itself or other objects projecting in such a way that the wristlets, wristlet rings, snaps or cables may be caught on them potentially causing the operators hand, in any position, to get caught in a pinch point. YOU MUST make your first check for catch points or hook points with RAM AT TOP DEAD CENTER.

a. Be sure press power is off.
b. Position the ram partway down with flywheel bar. Do NOT jog ram down. Be sure the ram has stopped. The operator MUST put his hands between the tools for checking.
c. Check that operator's extended closed fists and his extended stacked fingers -- both held vertically -- cannot be pinched or caught on the hand knuckle in ANY possible pinch point. Check that the operator's extended closed fists and his extended closed fingers -- both held horizontally -- cannot be pinched or caught in ANY possible pinch point. In any of these positions the operator's hands must be pulled free BEFORE they can be pinched. Examples of some pinch points; over or under the part in the tool, pinch point between part and tooling which is created during the operation, between dowel pins and top tooling, under pads, between strippers and tooling, between material strip and punch mounting plate as well as the bolster plate (in a cushion blanking operation) or other objects used as bolts, clamps, stops, build ups and air blasts which are projecting in such a way as to create a pinch point. Pay special attention to pinch points created by stacking parts at the press.
d. Continue to slowly turn the ram down by hand until you are sure the operator cannot be pinched or caught at any point in the press stroke under any circumstances.

STEP 3 – Dwell Adjustment “B” Adjusting to Restrain Operator's Extended Finger Tips At Least One Inch From Any Possible Finger Tip Pinch Point.

a. Position the press ram so you have one inch open spacing at the first possible fingertip pinch point.
b. Adjust cables to restrain operator's finger tips at least one inch from the first possible finger tip pinch point.
c. Make this adjustment by turning the dwell adjustment crank"B" clockwise to shorten cables.
d. Replace crank over trombone tunes with bend in crank upwards.

STEP 4 - Checking to be sure your adjustments will allow the Safeguard to function properly.

a. Now that the tools are near bottom stroke, observe drive chain to determine it will not completely unwrap from drive sprocket when the ram reaches bottom stroke.
b. Be sure the ram is now returned to top dead center.
c. Check to be sure there is no slack in the drive chain.
d. Check to be sure cable block is "FREE" and not hitting the rubber bumper at ends of guide rod.
e. If your adjustments will not allow the safeguard to function properly, see your Supervisor to determine if safeguard can be readjusted.
f. If your adjustments prevent the operator from feeding the part properly, check to see if hand tools can be used to feed the part safely and efficiently. If you cannot establish safe and efficient conditions do not approve the adjustment but see your Supervisor for tooling change or for moving the setup into a longer stroke press.SOME DO'S AND DON'TS for using Safeguard Nylon Wristlets

DO... Inspect wristlets and wristlet rings. Replace as soon as they show wear or damage.

DO... Wear wristlets properly. Safeguard nylon wristlets have a hand loop, NOT a thumb loop. The four fingers, NOT THE THUMB, are inserted through the loop. The wristlet must be worn in this manner, as illustrated at the right. DON'T... Fail to fasten the wristband. Wristband MUST be fastened so that wristlets cannot slip off hand.

# NYLON WRISTLET AND CABLE SNAP DESIGN

Nylon wristlets are made of strong, comfortable, nylon webbing. When properly worn, the hand loop extends around the palm and back of the hand, not just over the thumb. Both ends of the loop are secured directly to the connecting ring.

The wrist strap, holding the loop in place, is fitted with a metal tip that will not completely detach from the buckle. This design makes the minor changes in the adjustment of the wrist strap easier and has less influence on the setting of the hand loop.

The snap assembly is designed specifically for Pullout Holdout Devices. It is permanently attached to the Cable. The snap slider must be slid back against spring tension to attach or detach the wristlet. It is designed so that the snap cannot be opened under load.

A PROPERLY ADJUSTED DEVICE EXERTS NO PULL ON HAND ALREADY IN A SAFE POSITION

## SAFETY RULES AND EMPLOYEE RESPONSIBILITIES

The following list is not meant to be all inclusive and the order in which they appear is not necessarily the order of their relative importance.

In addition to these commonly accepted safety rules, follow all specific instructions given for each job and exercise all the care necessary to prevent injury.

Ask for training and instruction before you begin production of parts. Develop a sense of personal safety awareness and understand that by working safely at all times, you can avoid accidents.

Take personal responsibility for keeping yourself, your coworkers, and equipment from mishaps.

All employees are expected to follow safe working practices, obey rules and regulation, and work in a way that maintains the high safety and health standards developed and sanctioned by the company and O.S.H.A
All employees must recognize their responsibility to prevent injuries and illnesses and must take necessary actions to do so. Their performance in this regard will be measured along with their overall performance.

Review the safety and health educational material posted on bulletin boards and distributed to work areas. If you do not understand something, ask questions.

## GOLDEN RULE FOR PRESS OPERATOR SAFETY

KEEP YOUR FINGERS AND HANDS OUT OF THE POINT OF OPERATION AND BETWEEN PINCHING POINTS OF DIE WITHOUT PROPER GAURDING WHEN THE FLYWHEEL IS IN MOTION OR MOTOR IS RUNNING.

1) Do not report to work under the influence of alcohol or drugs.

2) Make certain that tools and equipment are not defective and that proper safety guards and protective devices are in place.

3) Maintain a clean and organized work area. No litter on the floor at any time (wrappers, cans, etc.). Keep all areas clean and free of debris.

4) All presses will be shut off when they are unattended.

5) Safety devices, mechanical and personal, must be used at all times where required. The Company will provide the necessary safety equipment. You are responsible for maintaining or replacing that equipment.

## SAFETY RULES AND EMPLOYEE RESPONSIBILITIES

6) Safety devices on machines will be used. If you do not understand how to adjust your pullout or any other safety device, talk to your Supervisor or lead man immediately.

7) Safety glasses with side shields are required in the shop area.

8) Ear plugs are required in all shop areas where decibel levels reach 85 DBA. (Areas are signed.)

9) Anyone operating a fork lift must be certified with in-house training.

10) Use and heed warning signs and safety rules.

11) Follow proper lifting procedures to eliminate back injuries. Do not lift more than 50 pounds. Pans of parts are to weigh 50 pounds or less. Sometimes putting more than 50 pounds in a pan is unavoidable, depending on the size and weight of the parts being manufactured. The important thing to remember is to have help or use a fork lift if you must move anything over 50 pounds.

12) Do not put more than 50 pounds on the small storage racks. These restricted racks are marked accordingly.

13) You must have a safety inspector's initials and "OK" before operating a press. Safety persons cannot "OK" themselves. They must be "OK'd" for work by another safety person.

14) Never operate the press with the brake monitor bypassed or attempt/continue to operate the press if the brake monitor signals a fault when the press is in operation or after it has stopped.

15) Fingers are precious. Never operate a press without a guard or safety device, which will keep hand and fingers out of the die area.

16) The die safety block will be used on set-up or production anytime a person places their hands, or any part of their body, in the point of operation to adjust or repair any die that is in the press.

17) If the machine has a mechanical energy source, such as a flywheel, it must come to rest before the die block can be inserted.

## SAFETY RULES AND EMPLOYEE RESPONSIBILITIES

18) Never attempt to install, adjust or remove dies or service the press with the motor on and the flywheel in motion.

19) Working areas around the press must be cleared of any objects.

20) Clean bolster plate, slide face and dies before installing.

21) Use the proper die for the press size to prevent overloading.

22) When dies are clamped to the press, use enough clamps to hold the dies firmly in position.

23) Be sure all persons are clear of the press before inching or cycling.

24) Before cycling the press, check die area, slide bolster and overhead area to make certain no tools, nuts, bolts, clamps, bars or anything you used to set up are left lying about.

25) Before releasing the press for production, replace all guards, covers and applicable safety devices for protection of the operator.

26) When changing settings of press controls for a different mode of operation, make sure selection switches are set correctly.

27) Report any questionable operation, unusual actions, oil leaks, improper maintenance or unsafe condition to the proper persons.

28) Whenever the press has been inoperative or left unattended, even for a brief moment, all selector switches, etc. should be checked before starting machine.

29) Shut off the press motor. The flywheel must not be turning when the die is actually being placed or removed from the press.

30) Remove die clamp and lower ram before inserting tool to prevent misalignment of tool and ram.

31) Be sure to grease die set bushings every 4 hours.

32) Be sure the safety pull-back cords are not frayed or worn and that the mechanism of the safety is greased and oiled where needed.

33) Safety devices must be signed by a Safety Inspector before operating the machine.

## SAFETY RULES AND EMPLOYEE RESPONSIBILITIES

34) When repairs on machinery or equipment are needed, it must go through the lock-out/tag-out process until repaired.

35) When working on a machine, determine if the clutch is a full revolution or part revolution clutch.

36) All pullout wristlets will be worn with the straps tightened. (When hazard is present)

37) All pullouts will have the over-reach set first, then the pinch point will be set. (See the "Safety Manual" for detailed instructions.)

38) If gloves are worn, they will be worn over the wristlets. (When hazard is present)

39) Gloves will not be worn while operating any rotating machine (mill, drill press, lath, taper, etc.)

40) All personnel are subject to random safety checks.

41) Do not falsify signatures on a Safety card.

42) Firearms or weapons are not allowed on Company property. The parking lot and surrounding area is Company property. If a firearm is carried in your vehicle, it must remain cased and/or in the trunk.

43) Horseplay, fighting, unnecessary shouting and loud noise is prohibited.

44) Be sure to observe overload tonnage ratings.

45) Always check guide posts for hazards.

46) Always use spring loaded turnover bars.

47) Use hand tools for the removal of stuck scrap and parts.

48) Never modify or attempt to bypass safety features designed into press control that are intended for your protection.

49) Affected employees are not allowed to work without proper Personal Protective Equipment.

50) Operators are not allowed to walk away from the press while wearing wristlets attached to either hand.

51) See forklift safety, regarding any issues on lifts and driving.

## SAFETY RULES AND EMPLOYEE RESPONSIBILITIES

In the event a safety incident occurs on first shift, it is the responsibility of the Risk Manager or acting department supervisor to address the incident. If neither is available, the shift supervisor or acting shift supervisor shall respond for all departments.

If the safety incident occurs during second, third or weekend shifts the shift supervisor or acting shift supervisor shall respond, for all departments.

Clow Stamping Company has a warning slip procedure. However, Clow Stamping Company reserves the right to discipline as determined appropriate by the magnitude of the offense and the number of prior offenses.

Violation of any Company work rule, safety rule or policy may warrant a warning slip and time off with no pay.

Clow Stamping Company reserves the right to change these policies at any time and to terminate the employment relationship with or without cause.

If you have a suggestion for reducing safety and health risk, offer it. It is your responsibility to get involved.

Take part in the employee participation system and support other employees in their assigned roles under the safety and health program.

Make sure you understand exactly what your responsibilities are in emergency situations.

Know how and where medical help can be obtained.

## OVERHEAD CRANES

DESIGNATED PERSONNEL: Only designated personnel are permitted to operate crane.

TRAINING: All personnel that have been designated to operate cranes must receive training on pre-operation inspection, basic operating techniques, pre-lift considerations, safe lifting, load movement, and have demonstrated their capability and understanding of crane safety.

COMPANY POLICY: No person under any circumstances is permitted to stand or pass under a load on the hook. The operator shall not be allowed to leave his position at the controls while the load is suspended. No hoisting, lowering, or swinging shall be done while anyone is on the load or hook.

OPERATOR INSPECTION: Each shift shall complete the inspection form at the beginning of each shift.

## FORK LIFTS

A lift truck is a self-propelled vehicle with at least three wheels designed to lift, transport and position material. Loads are carried on forks, which move up and down on a mast attached to the front of the vehicle. Rear wheels control steering. Front wheels are powered.

While carrying a load, the lift truck illustrates how it is built on the principle of a teeter-totter. The front or drive wheels act as the fulcrum point. The weight of the load on the forks is counterbalanced by a counterweight at the rear of the truck. When the truck is carrying a capacity load, it is properly counterbalanced to meet certain standards for stability. This principle points out the danger of overloading the truck by carrying more than its rated capacity. Too much load on the forks could mean tipping the truck forward or losing control of steering because of lack of sufficient weight on the rear steer wheels.

A lift truck - even the small ones - are very expensive. As an operator, you are responsible for proper care and safe operation of both the fork lift and the load you are carrying.

An average car weighs between 2,500 and 3,500 pounds. A 6,000 pound capacity fork lift, unloaded, weighs two or three times as much. With a capacity load you are maneuvering approximately l6,000 pounds. You must always be concerned with the safety of yourself, your co-workers and the truck and its load.

Carrying capacity:

The capacity rating of a lift truck is determined by considering the weight of the load and the distance between the load center and the center of the drive wheels, which serve as the pivot point. As you increase the distance between these two points, you reduce the total load that can be handled.

Carrying capacity can be greater than lift capacity, especially on machines with high lifts. If you lift loads to 20 feet, you must reduce the weight of the load. When you tilt the load forward to deposit it, the weight makes the mast work like a lever against the truck. Too much weight when the mast is well extended can turn the truck over.

Controls:

Some lift truck controls are similar to and operate in the same way as those in cars. Accelerator, foot brake, parking brake and clutch are much the same.

Other lift trucks have a directional control lever for selecting the direction you wish to go. Some lift trucks have power shift transmission in which case a clutch is not required. You will use an inching pedal to inch or slowly move the vehicle to position the load.

Variety of Fuel:

Lift trucks may be equipped with internal combustion engines which use diesel, gasoline or liquefied petroleum gas. Others are powered by electric motors which supply the energy source from a storage battery.

Knowledge of the lift truck:
Electric Truck:

| | |
|---|---|
| Key Switch | Hydraulic control lever |
| Battery charge indicator | Forks |
| Hour meter | Carriage |
| Horn | Uprights |
| Directional control lever | Lift cylinder |
| Accelerator pedal | Tilt cylinder |
| Brake pedal | Hydraulic sump |
| Seat brake | |

Gas Trucks:

| | |
|---|---|
| Ignition switch/starter | Left inching brake pedal |
| Choke button | Right inching brake pedal |
| Oil pressure indicator | Parking brake |
| Ammeter | Lift lever |
| Temperature indicator | Tilt lever |
| Fuel indicator | Forks |
| Clutch pedal | Carriage |
| Gear shift lever | Uprights |
| Speed range lever | Lift cylinder |
| Forward and reverse lever | Tilt cylinder |
| Accelerator pedal | Hydraulic sump |

BEFORE OPERATION OF ANY LIFT TRUCK, YOU MUST PASS THE CLOW STAMPING COMPANY LIFT TRUCK TRAINING COURSE.

Watch for rough running, stalling, etc. Report any malfunction to your supervisor.

<u>Starting - Electric Truck:</u>
Check position of steering wheels before you get into the truck so you are prepared for a quick turn.
Release the seat safety brake.
Make sure directional control lever is in neutral.
Turn key on with brake and speed control un-depressed.

*Battery powered trucks should not be used when battery is low.

<u>Driving Electric Truck:</u>
Move directional lever into position.
Depress the speed control pedal for desired speed.
To change direction, take foot off speed control, move the directional lever, and depress pedal again. (Flow of current through the drive motor has been reversed causing a drag which slows your truck - reverse torque braking. Leave your foot on the pedal and the instant your truck stops it will automatically reverse direction and accelerate as before. You can speed the slowdown by applying your foot brake.
To stop, remove foot from speed control pedal and depress brake to allow a smooth, safe stop.
If machine is to be parked, lower forks to floor, turn key to "off" and place directional lever in "neutral". When the driver's seat is unoccupied, the "dead man brake" is automatically applied.

GAS TRUCKS

Starting gas truck:

Check position of steering wheel before you get into the truck so you are prepared for a quick turn.
Place transmission in neutral.
Engage starter by turning ignition to start position. (Do not engage more than 15 seconds without a minute or so interval between trials).
After started, check all instruments in panel so be sure they are operational.
Run engine to warm the oil - especially in cold weather.

Driving gas truck:

Release parking brake - move speed lever for desired speed.
Move forward and reverse lever out of neutral and into position for desired direction.
Depress accelerator to attain speed.
Come to a complete stop before shifting.
To stop, remove foot from accelerator and depress brake pedal. If parking, place transmission lever in neutral position, lower forks to the floor and apply parking brake and shut off the engine.

Steering and turning fork trucks

Lift trucks steer with rear wheels. The rear end swings wide when making a turn while the truck pivots on the front wheels. This action permits the fork lift truck to make sharper runs in smaller spaces. The drive wheel on the inside of the steering arc is your guide.

Always make turns gradually and smoothly. Fast or sharp turns may spill a load or cause collision.

Picking up a load

Every truck has a rating capacity plate. This plate gives the height of lift and load capacity. Exceeding the load capacity may cause serious damage and is dangerous. If in doubt about the weight of the load, check with your Supervisor.

Approach the load straight on with the forks parallel to the floor.

Adjust the forks on the fork bars so the spread of the forks matches the width of the load or pallet.

Shift forks to center them under each load. To pick up a coil of wire, large pipe, or other hollow-center load with ordinary forks, move the forks so they are close together and centered. Insert forks in center of coil and raise them enough to clear the floor. Drive slowly with this type of load, taking care when turning to avoid having the load swing.

Approach load slowly. Center load as closely as possible. Tilt mast back slightly and lift slowly, accelerating engine a bit at the same time. Never take your eyes off the load.

Use inching feature while loading or stacking.

Make sure load is against carriage and load bracket. The weight of the truck has to balance the weight of the load. The further out the load center, the less weight the truck can lift safely.

Driving with the load

Always start truck in low gear.

Avoid fast starts and stops.

Loaded or empty, raise forks just high enough to clear obstructions.

Avoid running over obstructions, large or small.

Always look in the direction you are traveling.

Keep an eye on overhead obstructions.

Take special care when operating on ramps and inclines.

When going down the ramp, put the truck in low gear.

Never do any fancy maneuvering on ramps or inclines.

Never park on an incline unless absolutely necessary.

Before driving into a truck or trailer, make sure the load wheels are blocked to prevent the truck or trailer from rolling when you enter.

Dock boards and bridge plates must be firmly in place and strong enough to support the weight of the loaded truck.

Avoid driving along the edge of a loading dock.

Unloading

When depositing the load, enter the area squarely. Never butt or ram a load with the forks.

Never stop your lowering action suddenly.

Stacking

Approach to within a foot of the load. Stop, raise load slowly while inclining forward. When load is to desired height, tilt upright forward until it is vertical. Position load squarely over stack. Lower the load slowly.

Take care when mast and load are raised. The heavier the load and the higher you raise it, the higher the truck's center of gravity, reducing stability. Watch for overhead obstructions that could spill the load or tip the truck.

Always heed stacking height instructions.

Do not allow a worker to stand near you when you stack material.

Do not stack material in aisles or roadways.

## SAFETY FORKLIFTS

- Never use reverse as a brake.
- Never change direction of travel while in motion.
- Never leave gasoline powered truck with motor running.
- Avoid sudden stops or starts.
- Do not let anyone ride the forks or hitch a ride in any manner. People used as counterweights to hold the forklift down is strictly prohibited and could result in termination of employment.
- If elevating a workman, a safety cage must be placed on the forks.
- Watch for pedestrians.
- Lower forks to ground level when parking.
- Keep to the right whenever possible.
- Use horn only as a warning signal.
- Yield to right of way.
- Keep your arms and legs where they belong.
- Avoid bumping into objects.
- Slow down for wet and slippery floors.
- Don't daydream - be alert - drive slowly over rough surfaces.
- Never operate a forklift with hard rubber tires outside on rough terrain.
- The driver of the forklift will yield to the person or persons on all corners, walkways, or any place in the shop when the situation of close proximity is present. Any accident involving injury or damage to company property could warrant a Drug test. Any injury obtained from a forklift incidence will result in a drug test for both the driver and other person or persons involved.

## COMPRESSED AIR

To prevent injuries when working with compressed air, obey the following rules:

Before operating an air hose, examine all connections to make sure they are tight and will not come loose under pressure. Hold the nozzle when turning the air on or off.

Don't kink the hose to stop the air flow. Always turn off the air at the control valve.

Check the air hose carefully to make sure it is in good condition before opening the valve to let air into the hose. When the job is finished, turn off the valve on both the tool and the air-line.

Keep air hoses out of aisle ways where they can be damaged by traffic or be a tripping hazard.

Never point a compressed air hose nozzle at any part of your body or at another person. Never use compressed air for a practical joke. A blast of air playfully directed behind a fellow worker can startle him and cause him to bump against moving machinery.

Before turning on the air pressure, make sure that dirt from the machinery being cleaned will not be blown onto other workers. To prevent dirt from flying about, cover the equipment with canvas. Only the operator should be in the immediate cleaning area.

The operator and any other workers who must be in the immediate cleaning area must wear eye protection and other necessary personal protection equipment.

All compressed air used for cleaning shall not exceed 30 PSI.

**CLOW STAMPING COMPANY**
**A Workplace Accident and Injury Reduction Program (A.W.A.I.R)**

## 1. Safety Statement

Purpose:

To provide a healthy and safe work environment for all employees, Clow Stamping Company believes the safety and health of employees is of primary importance. Safety does not just happen; it requires commitment by everyone, from the production line to upper management.

Management is committed to provide a safe work environment conducive to work practices and policies. Clow Stamping Company's goal is to eliminate work related safety and health injuries to employees and to provide a safe work environment. To achieve this goal, we will concentrate our efforts in the following areas:

1. Provide employee training and education.
2. Maintain active in-house safety committees.
3. Assess hazards in the workplace.
4. Maintain safe operating equipment.
5. Associate with safety and health organizations.

## 2. Member mission statement:

To show responsibilities and methods for implementation and maintenance of the safety program.
The AWAIR committee will consist of approximately 5 to 8 people that will meet as needed or quarterly. The Risk Manager will bring all agenda items addressed by the committee, to upper management for final approval. The committee will focus on the OSHA 300 log for hazard identification. They will use information from the log to determine the most frequent and severe injuries and illness to the Company. Committee members will also use the log to determine where job hazard analysis need to be conducted to prevent future injury.
Members will represent Employee and Management.

## 3. GOAL AND OBJECTIVES

We will reduce our amount of hand and finger lacerations we will do this by providing higher protection gloves along with Kevlar sleeves when blanking.

We will address employee safety concerns in a timely manner, accidents and near misses will be investigated to prevent any further injury.
We will maintain a company culture that is committed to workplace safety and health.

**4. RESPONSIBILITIES**
**Personnel Manager:**

(A) Keep record of all Company accidents and employee compensations for said accidents. These files will list all physician recommendations for restricted work activities.

(B) Maintain the yearly review of the AWAIR program.

(C) Schedule yearly hearing test.

Assist in the development of a comprehensive injury management program including:

(1) Develop and implement incentive programs, if requested.

(2) Implement a corporate wide safety awareness program.

(3) Guide and participate in safety committees.

(4) Develop modified / transitional jobs.

(5) Conduct pre-placement physicals.

**Risk Manager:**
(A) Inform employees of any new safety hazards, regulations, procedures or policies. This information may be provided through bulletin board postings, plant meetings, individual employee meetings, or through the Company employee handbook.

(B) Assist the Production Manager in assigning daily safety responsibilities and hold those persons accountable. He will recognize employees for a good job and recommend disciplinary action through the Production Manager for safety violations.

(C) Schedule regular safety training.
Copies of those training sessions and the names of those employees in attendance will be kept in the safety training files in the Personnel Managers office or Personnel Manager.

(D) See the Company accident procedure is followed for all serious injuries, including filing of OSHA reports.

(E) Maintain safety records.
(F) Ensure that an injured employee adheres to his restrictions.
(G) Maintain the OSHA 300 log.
(H) Perform accident investigations.
(I) Maintain the AWAIR file and keep records of all safety meetings.

Assist in the development of a comprehensive injury management program including:

(1) Develop and implement incentive programs, if requested.

(2) Implement a corporate wide safety awareness program.

(3) Guide and participate in safety committees.

(4) Develop modified / transitional jobs.

**Managers:**

(A) Allocate sufficient resources ( money and material ).

(B) Assign safety responsibilities and hold those persons accountable.

(C) Set safety examples.

(D) Actively promote safety program ( communication ).

(E) Interview employees during a walk around.

Assist in the development of a comprehensive management program including:

(1) Guide and participate in safety committees.

(2) Implement a corporate wide safety awareness program.

(3) Develop and implement incentive programs, if requested.

**Supervisors:**

(A) Set safety examples.

(B) Provide employee training.

(C) Show recognition for a good job; discipline for of safety violations.

(D) Talk safety with employees.
(E) Attend supervisory safety training.
(F) Know standards that affect department.
(G) Accept responsibility for safety of their department.

**Employees:**

(A) Participate in safety inspections.

(B) Attend safety training.

(C) Participate in safety committee.

(D) Make safety suggestions.

(E) Take care of their equipment (keep guard in place, housekeeping, watch out for fellow workers**).**

**5. How this program will address the following areas of this AWAIR program.**

**Established:**

(A) A written policy making long term commitment to safety and health.

(B) Communicated to employees through letters, training and safety committees.

(C) Interview employees during walk around.

**Measured:**

(A) Annual surveys of workplace.

(B) OSHA 300 log.

(C) Employee participation.

**Maintained:**

(A) Active participation.

(B) Make it interesting.

(C) Make it part of work program and evaluation.

(D) Support safety efforts.

(F) Have concerned persons involved in program.

(G) Support active safety committees.

(H) Interview employees during walk around.

**6. Show how hazards were identified, analyzed and controlled.**

**Identified:**

(A) Workplace survey.

(B) Review OSHA 300 log.

**Analyze:**

(A) Job hazard analysis.

**Control:**

(A) Correct hazards that are noted.

(B) Repair or replace hazardous equipment.

(C) Conduct effective training.

(D) Provide personal protective equipment.

(E) Enforce safety program.

(F) Hazards noted during walk around.

**7. How the plan will be communicated to all affected employees.**

**Communication:**

(A) Written statement.

(B) Plant postings.

(C) Training sessions:
1. One on one.
2. Hands on.
3. Group.
4. Outside.

(D) Documentation of who did the training, who attended the training, what was covered, when the training was given.

**8. How workplace accidents will be investigated and corrective actions will be implemented.**

**Accident Investigation:**

(A) All accidents investigated.
(B) Accident investigation report ( if no accidents have occurred, a blank accident form should be on hand) reports should show what happen, what was the cause, what preventive action is being taken to prevent similar accidents.

**9. Safety work practices will be enforced.**
**Enforcement:**
(A) Written statement on how safe work practices and rules will be enforced.

(B) What corrective actions, warnings, counseling or disciplinary action, if any, were taken.

(C) An evaluation of the effectiveness of enforcement program seen on walk around.

**10. Inspections**
(A) Frequent plant inspections are essential to keep informed of current conditions, practices and procedures. Safety inspections should be performed by supervisory personal, safety committee and Risk Manager. The findings will be addressed by the committee, and safety deficiencies should be corrected as soon as possible.

(B) It is important to document the actions taken to correct hazards found during the inspections. Inspections should include physical survey of premises and also evaluate and identify unsafe acts of employees, contractors or temporary employees.

(C) The safety committee perform inspections at least annually. It is best to break inspections down into departments, rather than trying to inspect the entire plant.
Lost control surveys will be conducted by a representative from Berkley Administration.
Lost control surveys, emphasizing potential hazards to employees are divided into categories:

(1) General safety surveys ( entire facilities ).

(2) Department surveys.

(3) Ergonomic workplace evaluation.

**Hazard Identification:**
The AWAIR committee identified the major hazards in the workplace by looking at the OSHA 200 log for the past 3 years and came up with the following information:

Most frequent:
(1) Lacerations
Most severe:
(1) Back Strains

**Education / Training:**
All employees will receive training on the Company Safety Policy, OSHA mandated training on the first day of employment and annually thereafter.

**Hazard Analysis:**
All job hazard analysis done will be given to the Risk Manager to be addressed with upper management.

**Hazard Control:**

The job hazard analysis will be used for information to allocate money to purchase any additional equipment, personal protective equipment, operator training, etc. that came out of the job hazard analysis that would reduce any further injuries.

**Emergency Preparedness Plan:**

There will be people on each shift who will be trained in First Aid / CPR. They will be responsible for taking care of all accidents that require basic First Aid. They will be responsible to see that the injured employee is taken into the local clinic or hospital for further medical treatment if needed.

## SAFETY DATA SHEETS

There are two ways to access S.D.S electronically in the Supervisor's, tool room, shipping, and welding offices. If you are interested or concerned about the product you are working with, the S.D.S. is the best source of information. The S.D.S. is set-up in sections. Each section contains different information. If you know what information you are looking for, you can quickly and easily find the information.

EXAMPLE:

SECTION 1 - PRODUCT IDENTIFICATION.

SECTION 2 - HAZARD INGREDIENTS.

SECTION 3 - COMPOSITION / INFORMATION.

SECTION 4 - FIRST AID MEASURES.

SECTION 5 – FIRE FIGHTING MEASURES.

SECTION 6 – ACCIDENTAL RELEASE MEASURES.

SECTION 7 – HANDLING AND STORAGE.

SECTION 8 – EXPOSURE CONTROLS / P.P.E.

SECTION 9 - SPECIAL PRECAUTIONS

SECTION 10 – STABILITY AND REACTIVITY.

SECTION 11 – TOXICOLOGICAL INFORMATION.

SECTION 12 – ECOLOGICAL INFORMATION.

SECTION 13 – DISPOSAL CONSIDERATIONS.

SECTION 14 – TRANSPORT INFORMATION.

SECTION 15 - REGULATORY INFORMATION.

SECTION 16 - OTHER INFORMATION.

**CLOW STAMPING COMPANY ENCOURAGES EMPLOYEES TO REPORT NEAR MISS ACCIDENTS THAT COULD HAVE CAUSED INJURY**

## ACCIDENT PREVENTION FORM

This form is to be used for the reporting of all accidents where there was a potential for serious injury, death or extensive physical damage.

Date: Department:

Date of potential accident:

Nature of injury / damage of accident ( or potential accident: )

Description:

Cause:

Corrective Action Suggested / Taken:

Person Submitting form for review:

Employee or employees involved:

Approved by:

**CLOW STAMPING COMPANY ENCOURAGES EMPLOYEES TO REPORT ALL UNSAFE CONDITIONS AND ACTS.**

## EMPLOYEE REPORT OF UNSAFE CONDITIONS OR ACTS
**(Employee: Complete and give to supervisor)**

Employee:

Date:

Hazard / Problem:

Suggestion: :

(Supervisor: Complete and give to Safety Department)

Supervisor:

Department:

Date:

Action taken:

Decision by supervisor and safety department:

## ACCIDENT PROCEDURE

1. Evaluate injury for seriousness. Do necessary first aid on sight. A list of all 1st Aid personnel available at each 1st Aid station.

2. Transport to medical facility with Company vehicle if it is available. For a serious accident call 911 and request an Ambulance.

3. Call ahead to the clinic or hospital so they are prepared for your arrival. An injured employee may not drive himself. Phone numbers are listed by Supervisors phones, and inside Blood borne cabinets.
A. Must have a first aid person accompany the accident victim while transporting.
B. Must have drug testing kit accompany accident victim to hospital, packets are in the Supervisor's office.
C. Notify emergency contact person listed in the employee's file. Notify family, use discretion.

4. Shut down machine use Lock Out / Tag Out procedure and restrict the area.
A. Take pictures of tools and machine and write down die number for all serious accidents.
B. Have maintenance personnel thoroughly check out the machine / equipment on all accidents.
C. Absolutely do not put machine back into production until a clearance is received from the Risk Manager.

5. Statements
A. Supervisor's report of accident must be filled out as soon as possible.
B. Separate any witnesses and have statements hand written in their own words as soon as possible.
C. Employee statement should be taken as soon as circumstances permit.
D. Maintenance personnel must make a written report of findings.
E. All statements must be given to the Risk Manager, Production Manager or Personnel Manager for processing.
NOTIFY ONE OF THE FOLLOWING: Production Manager, Risk Manager or Personnel Manager. Phone numbers are listed in the shop and office.

<u>WORK RELATED INJURY - DRUG TESTING</u>

* Any lost work day or day's after the day of injury (8hrs or more in one day) <u>will warrant a drug test</u>.

*Any restricted or (partial days worked less then 8hrs) in the course of the injury <u>will not warrant a drug test</u>.

(Please see the Company's Drug and Substance Abuse Policy for complete testing information).

<u>ACCIDENT INVESTIGATION</u>
All accidents will be investigated by the Safety Department to prevent additional accidents. The Risk Manager is responsible for notifying O.S.H.A if necessary.

**CLOW STAMPING COMPANY RETURN TO WORK POLICY**
**FOR**
**WORK RELATED INJURIES**

PURPOSE: To ensure the timely return of injured employees to meaningful employment.

Clow Stamping Company believes the injured employee should return to work in any capacity that can be achieved, through coordination of limitations, restrictions and available tasks.

Expedient return is beneficial to both the employee and their employer.

Clow Stamping Company has selected several physicians at Brainerd Medical Center and St. Joseph's Medical Center as well as two chiropractors, (Redebaugh Chiropractic and Renneke Chiropractic) as preferred providers. They have either toured our facility or have a working knowledge of the jobs we perform.

* We recommend that you receive prior approval from the Human Resources Department or Risk Manager before seeing a physician or clinic that is not listed above.

Be sure to advise the clinic at the time of your appointment or visit that you are being seen for a work related issue. They will assign you to the approved physician.

A physician needs to be aware of the required physical functions of both regular and restricted duties to make an educated return to work decision. This is particularly important when light duty or restricted activities are assigned. Before returning to work you must have a work release signed by your attending physician. Clow Stamping Company provides Light Duty Jobs.

Coordinating the efforts of the employee, employer and physician offers the employee a safe and speedy recovery while maintaining the employer's production standards.

# CLOW STAMPING COMPANY
# SAFETY POLICY AND PROCEDURES

**RE**
Plant Visitation

**Purpose**
To insure a safe and consistent policy of tours.

**Scope**
This policy applies to all departments of Clow Stamping Company and all visitors of Clow Stamping Company.

**Procedures**

**Tour Guides**
All visitors of Clow Stamping Company are required to have a Clow Stamping Company employee present at all times when on the production floor. Contractors and Vendors performing work duties or daily routines for the company must be given safety instructions prior to beginning work and thereafter on an as needed basis by a supervisor or Risk Manager. (See Contractor/Vendor policy). Any person or persons on Company property without permission will be asked to leave.

**Safety Glasses**
All visitors touring/working in the manufacturing facility require safety glasses. Non-prescription safety glasses with side shields are available at the plant. Workers/outside vendors must wear safety glasses with side shields.

**Safety Shoes**
Visitors are not required to wear safety shoes.

**Hearing Protection**
Hearing protection needs to be offered to all visitors. It is not mandatory unless the visitor/visitors are in the plant for more than 2 hours.

**Hazard Communication**
Visitors will be given information on hazardous chemicals prior to working with them. Any visitor having questions regarding chemicals or equipment at the facility should contact the Risk Manager or supervisor prior to working with a chemical or immediately if exposed to a chemical.

**Forklift**
Only persons that have been trained by Clow Stamping Company are permitted to drive forklifts. If forklifts are needed the Risk Manager or supervisor must be contacted to coordinate a driver.

**Lock-Out-Tag-Out**
This facility has written procedures for de-energizing machines. Visitors are required to follow our program.

The tour guide is responsible for the safety of the person or persons in the group.

# Blood borne Pathogens

## Exposure Control Plan (ECP) for Bloodborne Pathogens

### Purpose

Clow Stamping Company is committed to providing a safe and healthful work environment for our entire staff. In pursuit of this endeavor, the following exposure control plan (ECP) is provided to eliminate or minimize occupational exposure to blood borne pathogens in accordance with OSHA standard 29 CFR 1910.1030, "Occupational Exposure to Blood Borne Pathogens."

The ECP is a key document to assist our firm in implementing and ensuring compliance with the standard, thereby protecting our employees. This ECP includes:

· Determination of employee exposure;
· Implementation of various methods of exposure control, including:
- Universal precautions.
- Engineering and work practice controls.
- Personal protective equipment, and
- Housekeeping.

· Hepatitis B vaccination;
· Post-exposure evaluation and follow-up;
· Communication of hazards to employees and training;
· Recordkeeping; and
· Procedures for evaluating circumstances surrounding an exposure incident.

The methods of implementation of these elements of the standard are discussed in the subsequent pages of this ECP.

### Administrative Duties

The Risk Manager is responsible for the implementation of the ECP. The Risk Manager will maintain, review, and update the ECP at least annually, and whenever necessary to include new or modified tasks and procedures. Contact location/phone number: 218-765-3111.

Those employees who are determined to have occupational exposure to blood or other potentially infectious materials (OPIM) must comply with the procedures and work practices outlined in this ECP.

The Risk Manager will maintain and provide all necessary personal protective equipment (PPE), engineering controls (e.g., sharps containers), labels, and red bags as required by the standard. The Risk Manager will ensure that adequate supplies of the aforementioned equipment are available in the appropriate sizes. Contact location/phone number: 218-765-3111.

The Risk Manager will be responsible for ensuring that all medical actions required are performed and that appropriate employee health and OSHA records are maintained. Contact location/phone number: 218-765-3111.

The Risk Manager will be responsible for training, documentation of training, and making the written ECP available to employees, OSHA, and NIOSH representatives. Contact location/phone number: 218-765-3111.

### Employee Exposure Determination

| Job Classification | Task or Procedure |
|---|---|
| First Aid Personnel | Render First Aid. |
| Risk Manager | Render first aid/assist in cleanup/oversee Injury site and procedure. |

Maintenance Supervisor Assist in cleanup of machine.
Part-time, temporary, contract, and per diem employees are covered by the standard. How the provisions of the standard will be met for these employees is described in this ECP, if applicable.

**Methods of Implementation and Control**

*Universal Precautions*

All employees will utilize universal precautions.

*Exposure Control Plan*

Employees covered by the bloodborne pathogens standard receive an explanation of this ECP during their initial training session. It will also be reviewed in their annual refresher training. All employees have an opportunity to review this plan at any time during their work shifts by contacting the Risk Manager. If requested, we will provide an employee with a copy of the ECP free of charge and within 15 days of the request.

The Risk Manager
is responsible for reviewing and updating the ECP annually or more frequently if necessary to reflect any new or modified tasks and procedures that affect occupational exposure and to reflect new or revised employee positions with occupational exposure.

The review and update of such plans must also:

· Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and

· Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

The Risk Manager and or Safety Committee documents all devices considered.

The following table lists the safer devices The Risk Manager and or Safety Committee has identified as candidates in our last annual review, which took place 2001:

**Safety Committee Involvement**

The Risk Manager
solicits input from non-managerial employees responsible for direct patient care in the identification, evaluation, and selection of effective engineering and work practice controls. Only those employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps need be contacted. Our solicitation method involves the following: Safety Committee, audits. The Risk Manager
documents all solicitation in the ECP.

The following table lists the engineering and work practice controls identified during solicitation in our last annual review, which took place 2001:

**No engineering or work practices were added.**

*Engineering and Work Practice Controls*

Engineering and work practice controls will be used to prevent or minimize exposure to bloodborne pathogens. The specific engineering controls and work practice controls used are listed below: Sharps container

Sharps disposal containers are inspected and maintained or replaced by housekeeping we will check the container every month or whenever necessary to prevent overfilling.

This facility identifies the need for changes in engineering control and work practices through: The Risk Manager and Safety Committee. We evaluate the need for new procedures or new products by: employee involvement and by any deficiencies found in procedures.

The following staff are involved in this process: Risk Manager and Safety Committee, housekeeping.

The Risk Manager will ensure effective implementation of these recommendations.

*Personal Protective Equipment (PPE)*

PPE is provided to our employees at no cost to them. Training is provided by The Risk Manager in the use of the appropriate PPE for the tasks or procedures employees will perform.
The types of PPE available to employees are as follows: gloves, mask, apron, face shield.
PPE is located in the bloodborne cabinets and may be obtained through The Risk Manager all employees using PPE must observe the following precautions:
Possible precautions include:

· Wash hands immediately or as soon as feasible after removal of gloves or other PPE.

· Remove PPE after it becomes contaminated, and before leaving the work area.

· Used PPE may be disposed of in bloodborne containers.

· Wear appropriate gloves when it can be reasonably anticipated that there may be hand contact with blood or OPIM, and when handling or touching contaminated items or surfaces; replace gloves if torn, punctured, contaminated, or if their ability to function as a barrier is compromised.

· Utility gloves may be decontaminated for reuse if their integrity is not compromised; discard utility gloves if they show signs of cracking, peeling, tearing, puncturing, or deterioration.

· Never wash or decontaminate disposable gloves for reuse.

· Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or OPIM pose a hazard to the eye, nose, or mouth.

· Remove immediately or as soon as feasible any garment contaminated by blood or OPIM, in such a way as to avoid contact with the outer surface.
The procedure for handling used PPE is as follows: all used PPE will be incinerated.
*Housekeeping*
Regulated waste is placed in containers that are closable, constructed to contain all contents and prevent leakage, appropriately labeled or color-coded (see Labels section), and closed prior to removal to prevent spillage or protrusion of contents during handling.
The procedure for handling sharps disposal containers is: will be handled through company's medical waste vendor.
The procedure for handling other regulated waste is: will be handled through the company medical waste vendor.
Contaminated sharps are discarded immediately or as soon as possible in containers that are closable, puncture-resistant, leak proof on sides and bottoms, and labeled or color-coded appropriately. Sharps disposal containers are available at The Safety Compliance office.
Bins and pails (e.g., wash or emesis basins) are cleaned and decontaminated as soon as feasible after visible contamination.
Broken glassware that may be contaminated is picked up using mechanical means, such as a brush and dust pan.
*Labels*
The following labeling method(s) is used in this facility:

Biohazard

The Risk Manager will ensure warning labels are affixed or red bags are used as required if regulated waste or contaminated equipment is brought into the facility. Employees are to notify The Risk Manager if they discover regulated waste containers, refrigerators containing blood or OPIM, contaminated equipment, etc., without proper labels.

**Hepatitis B Vaccination**

The Risk Manager will provide training to employees on hepatitis B vaccinations, addressing the safety, benefits, efficacy, methods of administration, and availability.

The hepatitis B vaccination series is available at no cost after training and within 10 days of initial assignment to employees identified in the exposure determination section of this plan.

Vaccination is encouraged unless:

1. Documentation exists that the employee has previously received the series,
2. Antibody testing reveals that the employee is immune, or
3. Medical evaluation shows that vaccination is contraindicated.

However, if an employee chooses to decline vaccination, the employee must sign a declination form. Employees who decline may request and obtain the vaccination at a later date at no cost.

Documentation of refusal of the vaccination is kept at Personnel Managers Office.

Vaccination will be provided by Brainerd Medical Center at Brainerd Medical Center.

Following hepatitis B vaccinations, the health care professional's written Opinion will be limited to whether the employee requires the hepatitis vaccine, and whether the vaccine was administered.

**Post-exposure Evaluation and Follow-Up**

Should an exposure incident occur, contact The Risk Manager, or Personal Manager at the following telephone number 218-765-3111.

An immediately available confidential medical evaluation and follow-up will be conducted by Brainerd Medical Center. Following the initial first aid (clean the wound, flush eyes or other mucous membranes, etc.), the following activities will be performed:

Possible activities include:· Document the routes of exposure and how the exposure occurred.

· Identify and document the source individual (unless we can establish that identification is infeasible or prohibited by state or local law).

· Obtain consent and make arrangements to have the source individual tested as soon as possible to determine HIV, HCV, and HBV infectivity; document that the source individual's test results were conveyed to the employee's health care provider.

· If the source individual is already known to be HIV, HCV and/or HBV positive, new testing need not be performed.

· Assure that the exposed employee is provided with the source individual's test results and with information about applicable disclosure laws and regulations concerning the identity and infectious status of the source individual (e.g., laws protecting confidentiality).

· After obtaining consent, collect exposed employee's blood as soon as feasible after exposure incident, and test blood for HBV and HIV serological status.

· If the employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed

employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible.

*Administration of Post-Exposure Evaluation and Follow-up*

The Risk Manager ensures that health care professional(s) responsible for employee's hepatitis B vaccination and post-exposure evaluation and follow-up are given a copy of OSHA's bloodborne pathogens standard.

The Risk Manager ensures that the health care professional evaluating an employee after an exposure incident receives the following:

Required information includes:

· A copy of 29 CFR 1910.1030,
· A description of the employee's job duties relevant to the exposure incident,
· Route(s) of exposure,
· Circumstances of exposure,
· If possible, results of the source individual's blood test, and
· Relevant employee medical records, including vaccination status.

The Risk Manager
provides the employee with a copy of the evaluating health care professional's written opinion within 15 days after completion of the evaluation.

*Procedures for Evaluating the Circumstances Surrounding an Exposure Incident*

The Risk Manager will review the circumstances of all exposure incidents to determine:

· Engineering controls in use at the time,
· Work practices followed,
· A description of the device being used,
· Protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.),
· Location of the incident (O.R., E.R., patient room, etc.),
· Procedure being performed when the incident occurred, and
· Employee's training.

If it is determined that revisions need to be made, The Risk Manager
will ensure that appropriate changes are made to this ECP. Changes include: Changes may include an evaluation of safer devices, adding employees to the exposure determination list, etc.

**Employee Training**

All employees who have occupational exposure to bloodborne pathogens receive training conducted by The Risk Manager

Our instructor(s) has the following qualifications: The Risk Manager will assist a Health Care Provider in the training.

All employees who have occupational exposure to bloodborne pathogens receive training on the epidemiology, symptoms, and transmission of bloodborne pathogen diseases. In addition, the training program covers, at a minimum, the following elements:

Other required elements include:

· A copy and explanation of the standard;
· An explanation of our ECP and how to obtain a copy;
· An explanation of methods to recognize tasks and other activities that may involve exposure to blood and OPIM, including what constitutes an exposure incident;
· 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;
· An explanation of the types, uses, location, removal, handling, decontamination, and disposal

of PPE;
· An explanation of the basis for PPE selection;
· Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine will be offered free of charge;
· Information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM;
· 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 that the employer is required to provide for the employee following an exposure incident;
· An explanation of the signs and labels and/or color coding required by the standard and used at this facility; and
· An opportunity for interactive questions and answers with the person conducting the training session.
Training materials for this facility are available at The Risk Manager.

**Recordkeeping**

*Training Records*

Training records are completed for each employee upon completion of training. These documents will be kept for at least three years at Personal Managers Office.
The training records include:
Required elements include:
· The dates of the training sessions.
· The contents or a summary of the training sessions.
· The names and qualifications of persons conducting the training, and
· The names and job titles of all persons attending the training sessions.

Employee training records are provided upon request to the employee or the employee's authorized representative within 15 working days. Such requests should be addressed to the Risk Manager.

*Medical Records*

Medical records are maintained for each employee with occupational exposure in accordance with 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records."
The Risk Manager is responsible for maintenance of the required medical records. These confidential records are kept at 218-765-3111 for at least the duration of employment plus 30 years.
Employee medical records are provided upon request of the employee or to anyone having written consent of the employee within 15 working days. Such requests should be sent to the Risk Manager.

*OSHA Recordkeeping*

An exposure incident is evaluated to determine if the case meets OSHA's Recordkeeping Requirements (29 CFR 1904). This determination and the recording activities are done by the Risk Manager

*Sharps Injury Log*

The Risk Manager
establishes and maintains a sharps injury log to record percutaneous injuries from contaminated sharps. The information in the sharps injury log is recorded and maintained: in a locked cabinet. This protects the confidentiality of the injured employee. Our sharps injury log contains:
Required elements include:

· The type and brand of device involved in the incident,
· The department or work area where the exposure incident occurred, and
· An explanation of how the incident occurred
We maintain the log 5 years minimum.

**Hepatitis B Vaccine Declination (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.
**Signed:**_____ *(employee signature)* **Date:**_____

# Bloodborne Pathogens

Accident/Injury

Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials.

No Exposure: You were not exposed to any potentially infectious materials.

Stop here do not proceed.

Exposure incident: A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employees duties.

Wash exposed areas with soap and water immediately.

Report incident immediately to Supervisor, Risk Manager, or Personnel Manager. Call if Needed.

Hepatitis B vaccination and post-exposure evaluation and follow-up. See (O.S.H.A) standard 1910.1030 (f)

*Definitions:*

*Bloodborne Pathogens* means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

*Potentially Infectious Materials* means semen, vaginal secretions, cerbrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.

# EMERGENCY PLANT EVACUATION BOMB THREAT

**RE:** Emergency Plant Evacuation

**Purpose**
To insure a safe and effective means of evacuation.

**Scope**
This policy applies to all employees in the Monticello and Merrifield plants.

## Effective Date
1/28/98

THE DECISION TO EVACUATE WILL BE MADE BY THE PLANT MANAGER, PERSONNEL MANAGER, RISK MANAGER, OR ACTING SHIFT SUPERVISOR.

CALL 911 TO REQUEST ASSISTANCE IF NECESSARY.

### ALARM

- The intercom system is the preferred means for evacuation notification. It can be accessed on any phone by pressing the page button.
- If the phone system does not work, the department supervisors will use word of mouth to notify and evacuate employees in their area.
- Instruct employees to evacuate the building immediately and report to the parking lot by the highway.
- All employees are to evacuate the building. No employee is required or permitted to remain inside.
- Employees may re-enter the building after notification by management.

### ESCAPE ROUTES AND PROCEDURES

- When evacuating the building, use the exit closest to you. Report to the front parking lot by the highway. All employees are to report to their supervisor where they will be accounted for.
- Rescue or medical duties will be performed by designated first/aid employees and outside services.
- Remain in the parking lot for any further instructions.
- The Personnel Manager is the Program Coordinator and has overall responsibility for the Employee Emergency Plan. The Risk Manager will review the program as necessary.

### TRAINING

- The Personnel Department is responsible for training all supervisors, lead people and safety people on how to follow the plan to ensure the safe evacuation of employees.

# BOMB THREAT

## QUESTIONS TO ASK

A. When is the bomb going to explode ?

B. Where is it right now ?

C. When did you put it there ?

D. What kind of bomb is it ?

E. What does it look like ?

F. What will cause it to explode ?

G. Did you place the bomb ?

H. Why ?

I. What is your name ?

J. Where are you ?

K. **EXACT WORDING OF THREAT**

_____

_____

_____

_____

## CALLERS VOICE

Calm Nasal

Angry Stutter

Irrational

Rapid Deep

Taped

Abusive

Other

## BACKGROUND NOISES

Street noises

House noises

Voices

Machinery

Music

Motor

Other

Was caller familiar with shop and area : Did you recognize voice : Caller : Male or female
Duration of call : Date and Time of call : Estimated age of caller :
Call taken by : Call reported to : Remarks :

ADDITIONAL NOTES :_____

_____

_____

## DRUG AND SUBSTANCE ABUSE POLICY

Drug Testing

Under the guidelines of the Company Drug and Substance Abuse policy, a drug screen will be given to any employee who:

· Has sustained a personal injury that involves lost work days.
· Who has caused another employee to sustain an injury.
· Causes a work-related accident.
· Was operating or helping to operate machinery or equipment involved in a work- related accident.
· Has caused property damage.

Please refer to the Employee Handbook for the complete policy.

An injury is to be reported by the employee on the date it occurs.

There have been instances (particularly with back injuries) when the employee has not immediately felt the symptoms of the injury and delayed reporting the injury to his Supervisor. In these cases, a drug screen will be required on the date the employee reports a lost time injury.

# Ergonomics Program

## General Company Policy

The purpose of this program is to inform interested persons, including employees, that Clow Stamping Company is committed to improve our employees' comfort and well-being by identifying and correcting ergonomic risk factors on the job. This program applies to all work operations, both in our plant and in the office areas. Our Risk Manager coordinates all safety and health programs for Clow Stamping Company. He/she reviews the Ergonomics Program and provides guidance, as needed.

Under this program, a team of our employees or outside services will evaluate jobs which they have identified as having "problem areas" and develop and implement solutions to reduce job-related worker injury and illness.

Our goal through this Ergonomics Program is to prevent the occurrence of work-related musculoskeletal disorders by controlling or eliminating the risk factors which cause them. This program ensures that all affected employees are aware of job-related risk factors and provides information and solutions to elevate them. Clow Stamping Company promotes continuous improvement for the efficiency, comfort, and well-being of all employees through a team effort of management and employee involvement.

If, after reading this program, you find that improvements can be made, please contact our Risk Manager. We encourage all suggestions because we are committed to the success of our Ergonomics Program. We strive for clear understanding, safe and efficient work practices, and involvement in the program from every level of the company.

## Ergonomics Team

Our Ergonomics Team is comprised of a cross section of employee representatives from various departments/areas and staff levels in our company. Clow Stamping Company Management Team is committed to the success of this program by providing resources and the staff time necessary to identify and correct problem jobs. The members of our Ergonomics Team are: Safety Committee, Outside services.

The Team members have been trained to recognize problem jobs, identify risk factors, and develop solutions to reduce those factors. Elements of this training include the identification of workplace risk factors; job analysis methods, implementation and evaluation of control measures, and teamwork skills. Additional training completed by Team members includes: In-house training, Risk Manager, St. Joseph's Physical Therapy.

## Injury/Medical Management

Brainerd Medical Center Hwy 371 South 2024 Sixth Street Brainerd, Mn. 56401 218-828-7100 is the health care provider we have chosen to provide medical treatment for our employees with injuries or illnesses relating to ergonomic factors. They have visited our facility and are familiar with our specific workplace job procedures and the job risk factors.

We encourage all employees to immediately report any symptoms of discomfort that may be associated with their job duties. In most cases, employees are to report to their immediate supervisor. Those supervisors are responsible to recommend alternative work or medical evaluation for injured or ill employees.

Supervisors record and file written reports from the first observation of illness or injury through all subsequent follow-up activities. They are also responsible to forward information about the worker injury or illness for recording on the OSHA 300 Injury and Illness Form. The supervisor may recommend that the job receive an evaluation from the Ergonomics Team. Supervisors or other personnel with these responsibilities are Risk Manager, Personnel Department.

Our procedures for entering an MSD-related injury/illness will follow OSHA 300 requirements record keeping guidelines for occupational injuries and illnesses.
After an injured employee has been treated by the health care provider, the following procedures are used to monitor the recovery process and their return to work. The Company will follow Physician injury treatment reports and monitor employee recovery in house by observations along with employee questions and answers.
The Ergonomics Team has developed a list of light and restricted duty jobs which have low musculoskeletal risks. This list is a valuable resource for assigning duties to recovering employees until they can resume their normal job functions. These jobs include: Shipping light freight, 100% parts, forklift driving, Grounds keeper, Miscellaneous shop/office work to include but not limited to sweeping, cleaning, paper work filing.

**Identifying Problem Jobs**

There are several methods used to identify problem jobs which are most likely to result in ergonomic disorders. The Ergonomics Team initially reviewed and periodically monitors Clow Stamping Company injury and illness records such as the OSHA 300 form and workers' compensation data to identify patterns of ergonomic-related injuries and illnesses.
In addition, Key Assessments are performed to evaluate risk factors:

- Rate and number of repetitions: performance of the same motion or motion patterns every few seconds for more than two hours at a time.
- Postures and limb positions: fixed or awkward work postures such as overhead work, twisted or bent back, bent wrist, stooping, or squatting, for more than a total of two hours.
- Vibration: use of vibrating or impact tools or equipment for more than a total of two hours.
- Loads/lifted: lifting, lowering, or carrying of anything weighing more than 25 pounds (11.34 kg) more than once during the work shift.
- Loads/static: holding a fixed or awkward position with arms or neck for more than ten seconds.
- Muscle forces: continually pulling or pushing objects.
- Work pace: piece rate or machine paced work for more than four hours at a time (legally required breaks cannot be included when totaling the four hour limit).

Our Ergonomics Team has identified the following jobs at our facility as having these ergonomic risk factors: Press operators

**Solutions**

For each problem job which has been changed, we maintain a file of the improvements and changes completed. The file contains documentation of the ergonomic-related illnesses or injuries, the actual changes made, and any similar incidents which occurred after the changes were implemented. To maintain these files, we: The Risk Manager will keep record of purchased equipment.
These files are kept in Risk Manager.

**Employee Training**

These are the ergonomic elements we teach to all employees:

- How to recognize workplace risk factors associated with work-related musculoskeletal disorders and the ways to reduce exposure to those risk factors.
- The signs and symptoms of work related musculoskeletal disorders, the importance of early reporting, and medical management procedures.
- Reporting procedures and the person to whom the employee is to report workplace risk factors and work-related musculoskeletal disorders.
- The process Clow Stamping Company is taking to address and control workplace risk factors, each employee's role in the process, and how to participate in the process.
- Opportunity to practice and demonstrate proper use of implemented control measures and safe work methods which apply to the job.

This company will not implement any policy or practice which discourages reporting or which results in discrimination or reprisal against any employee who makes a report.

**Enforcement**

Constant awareness of and respect for ergonomic hazards, and compliance with all safety rules are considered conditions of employment. Supervisors and individuals in the Safety and Personnel Department reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

**Appendix**

We have attached to this plan any lists, samples or procedures we thought would ensure better understanding of our written program.

**[Regulatory Text]**

**Non-Mandatory** Appendix A to §1910.900: What You Need To Know About Musculoskeletal Disorders (MSDs)

Ergonomics is the science of fitting jobs to the people who work in them. The goal of an ergonomics program is to reduce work-related musculoskeletal disorders (MSDs) developed by workers when a major part of their jobs involve reaching, bending over, lifting heavy objects, using continuous force, working with vibrating equipment and doing repetitive motions.

**What are signs and symptoms of MSDs that you should watch out for?**

Workers suffering from MSDs may experience less strength for gripping, less range of motion, loss of muscle function and inability to do everyday tasks. Common symptoms include:

| | |
|---|---|
| ***Painful joints*** | ***Pain in wrists, shoulders, forearms, knees*** |
| ***Pain, tingling or numbness in hands or feet*** | ***Fingers or toes turning white*** |
| ***Shooting or stabbing pains in arms or legs*** | ***Back or neck pain*** |
| ***Swelling or inflammation*** | ***Stiffness*** |
| ***Burning sensation*** | |

**What are MSDs?**

MSDs are injuries and illnesses that affect muscles, nerves, tendons, ligaments, joints or spinal discs. Your doctor might tell you that you have one of the following common MSDs.

| | | |
|---|---|---|
| ***Carpal tunnel syndrome*** | ***Rotator cuff syndrome*** | ***De Quervain's disease*** |
| ***Trigger finger*** | ***Sciatica*** | ***Epicondylitis*** |
| ***Tendinitis*** | ***Raynaud's phenomenon*** | ***Carpet layers' knee*** |
| ***Herniated spinal disc*** | ***Low back pain*** | ***Hand-arm Vibration Syndrome*** |
| ***Tension neck syndrome*** | | |

## If you have signs or symptoms of MSDs.....

**If MSD signs and symptoms are not reported early, permanent disability may result. It is important that you report MSD signs and symptoms right away to avoid long-lasting problems. Your employer is required to respond promptly to those reports. Contact the following person to report MSDs, MSD signs or symptoms or MSD hazards:**

_____

**What causes MSDs?**

Workplace MSDs are caused by exposure to the following risk factors:

**Repetition.** Doing the same motions over and over again places stress on the muscles and tendons. The severity of risk depends on how often the action is repeated, the speed of the movement, the number of muscles involved and the required force.

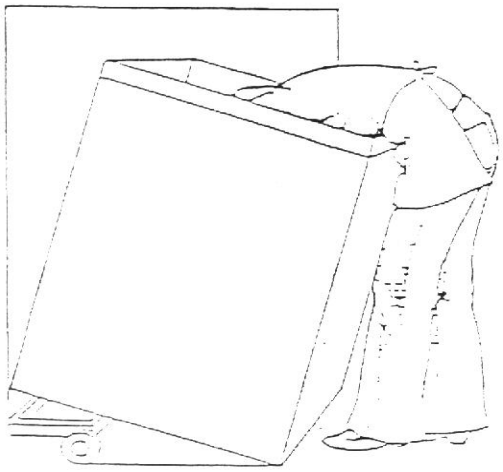
**Forceful Exertions.** Force is the amount of physical effort required to perform a task (such as heavy lifting) or to maintain control of equipment or tools. The amount of force depends on the type of grip, the weight of an object, body posture, the type of activity and the duration of the task.

**Awkward Postures.** Posture is the position your body is in and affects muscle groups that are involved in physical activity. Awkward postures include repeated or prolonged reaching, twisting, bending, kneeling, squatting, working overhead with your hands or arms, or holding fixed positions.

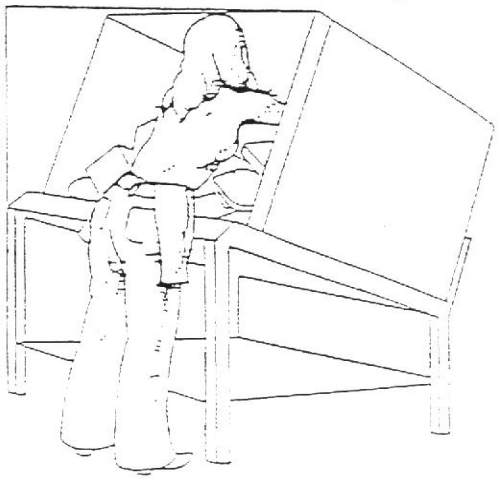
**Contact Stress.** Pressing the body against a hard or sharp edge can result in placing too much pressure on nerves, tendons and blood vessels. For example, using the palm of your hand as a hammer can increase your risk of suffering an MSD.

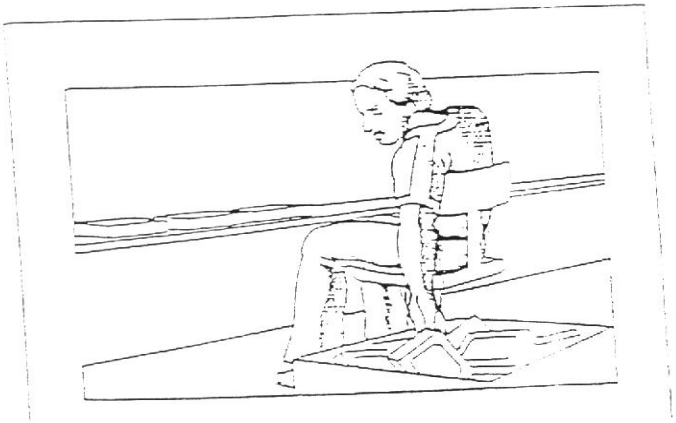
**Vibration.** Operating vibrating tools such as sanders, grinders, chippers, routers, drills and other saws can lead to nerve damage.

Bad Design

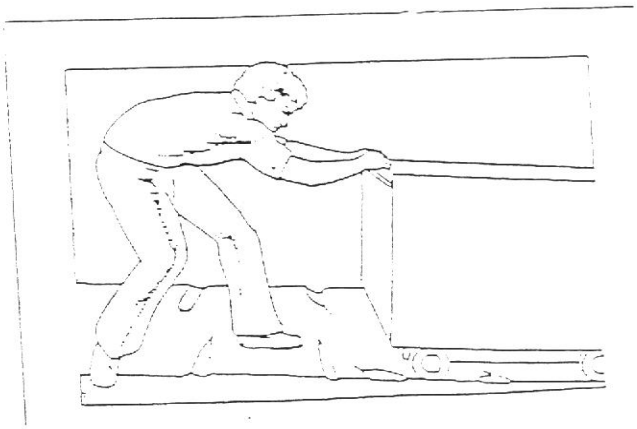


Good Design

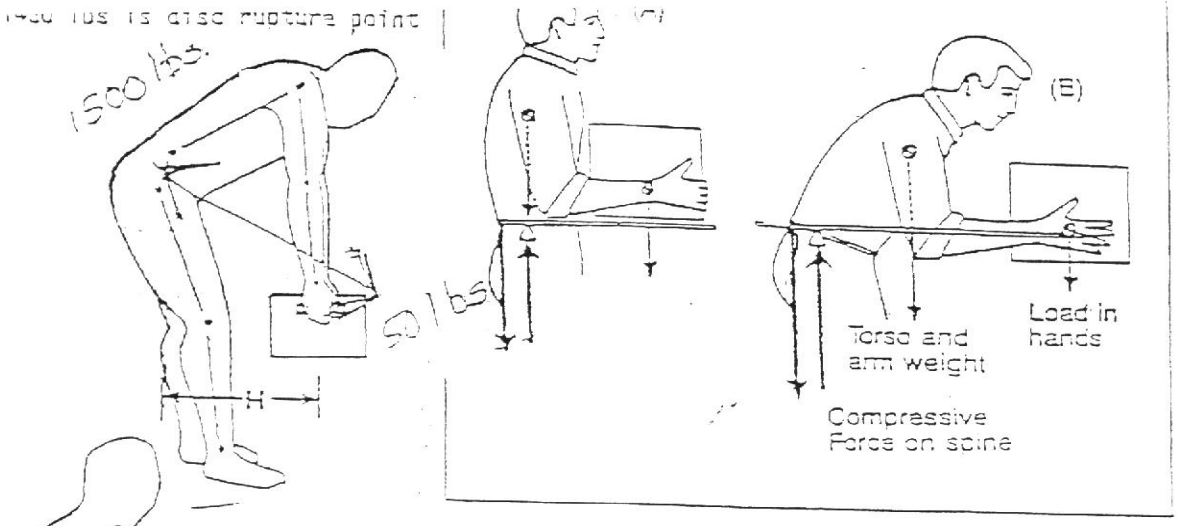




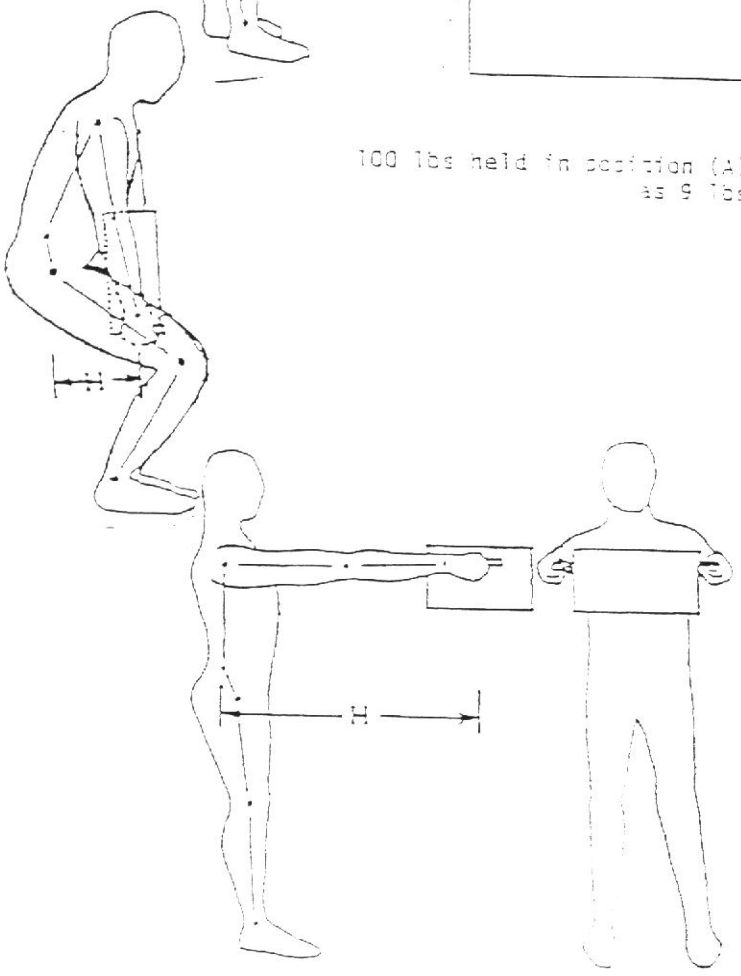
Twisting, stretching or leaning with a heavy load may cause back problems. Jobs should be changed to eliminate these reaching motions.



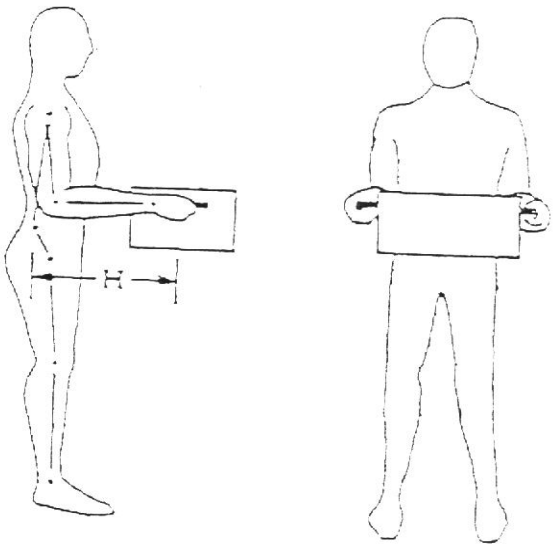
Pulling and pushing objects can also cause back injuries.




100 lbs held in position (A) produces the same force on your back as 9 lbs in position (B)



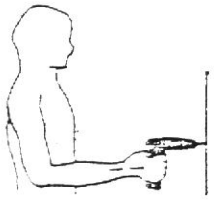

Straight-arm lift (bad)




Bent-arm lift (good)

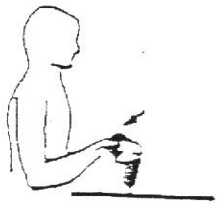
OK

Pistol handle
Vertical surface
Elbow Height



BAD

Pistol Handle
Horizontal surface
Elbow height

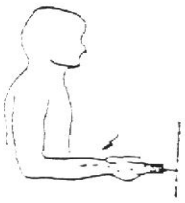


OK

Pistol handle
Horizontal surface
Below waist height

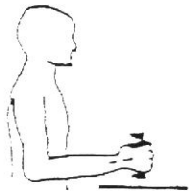
OK

Inline handle
Vertical surface
Elbow height



BAD

Inline handle
Horizontal surface
Elbow height

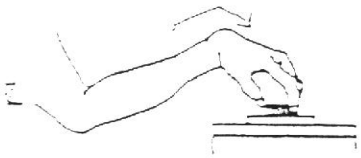


OK

Inline handle
Horizontal surface
Below elbow height

WRIST POSTURE IS DETERMINED BY THE ELEVATION AND ORIENTATION OF THE WORK SURFACE WITH RESPECT TO THE WORKER AND THE SHAPE OF THE TOOL

BAD



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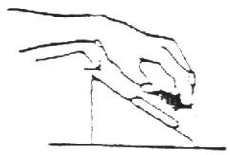

OK

## REDUCING C.T.D. RISKS

Cumulative Trauma Disorders (C.T.D.'s) are defined as a group of illnesses associated with ongoing damage to soft tissues. Problems such as these may also be called:

- Repetitive motion injuries (RMI's)
- Repetitive strain injuries (RSI's)
- Musculoskeletal disorders (MSD's)

In order to prevent (CTD's), CLOW STAMPING COMPANY will allow any and all press operators to switch machines after 4 hours of production.

EXAMPLE: Operator A has been operating press 404 for a period of 4 hours on the same job, doing the same operation.

This policy allows the operator to inform the Supervisor that he or she would like to be moved to another press, preferable doing a different type of operation. When you switch presses you need to remain in a comparable area. (Big press would switch with big press, small press would switch with small press, etc.)

Clow encourages any employee who feels physically challenged by a job they are performing to seek assistance or request a "change in motion" job.

NOTE: Two risks are greater than one. The more often you're exposed to a risk factor, the more likely you are to develop a C.T.D. In addition, your chance of injury greatly increases when risk factors are combined. For example, frequent repetition becomes even riskier when it's combined with excessive force.

## EMPLOYEE EMERGENCY PLAN FOR EVACUATION

In order to comply with the OSHA Standard 1910.38

The following Employee Emergency Plan has been established. The Risk Manager is the Program Coordinator and has overall responsibility for the employee emergency plan. The Program Coordinator will review and update the program as necessary.

1. **TRAINING -** The Personnel Manager and Risk Manager are responsible for training all Managers, Supervisors, Assistant Supervisors, lead people and safety people on how to follow the plan to ensure safe evacuation of employees.

2. **RECORD KEEPING -** The Risk Manager must maintain the following records:

1. Attendance
2. Training session record listing date, trainer, outline, handout, etc.
3. Alarm System: The fire alarm will sound automatically if the sprinkler system is activated. The Company will fire drill annually. The alarm will be set off manually.
3. The backup alarm is the intercom system. It can be accessed by any phone in the company by using the overhead & phone page option.
4. There is one location where the fire alarm can be activated manually by the main fire panel. The preferred means for reporting rescue, medical and fire emergencies is to dial 911.
5. There are no critical plant procedures before evacuation (at no time shall anyone unnecessarily risk personal safety).

6. **Rescue and medical duties -** Safety Personnel will assist in evacuation and perform necessary first aid.

7. **Accountability** – The person in charge of each department must account for all employees in his or her department after evacuation is complete. A report of that accounting will be given to the Risk Manager or Production Manager. If one of these individuals is unavailable, report to the acting Supervisor.

8. **Contact for additional training / data -** People who can be contacted for further information or explanations of duties under the plan are: Production Manager, Risk Manager, 2nd Shift Supervisor, 3rd Shift Supervisor.

9. **Program review -** This employee emergency plan will be reviewed annually by the Program Coordinator and updated as needed.

## EMPLOYEE FIRE PREVENTION PLAN

GENERAL INFORMATION:
In order to comply with the OSHA Standard 1910.38 Fire Prevention plan the following written plan has been established for Clow Stamping Company. The Personnel Manager is the Program Coordinator and has overall responsibility for the fire prevention plan. The Program Coordinator will review and update the program as necessary.

FIRE PREVENTION PLAN

1. A list of the major workplace fire hazards and their proper handling and storage procedures.

A. Sanding Department: Potential ignition comes from inside the time savers themselves - Control Procedures involve regular cleaning of the internal parts. Fire protection equipment which can control a fire is the ABC fire extinguisher.

B. Welding Department: Potential ignition comes from the welders cutting torches and gases used to operate them. Control Procedures consist of good housekeeping practices. Fire protection equipment which can control a fire is the A.B.C. Dry Chemical Fire Extinguisher.

2. Job Titles of Personnel Responsible for Maintenance of Equipment:

The Maintenance Department has sole responsibility in maintaining equipment to prevent and control ignitions or fires.

3. The Risk Manager will be responsible for control of fuel source hazards.

4. Housekeeping: The Risk Manager, Housekeeping, and Department Supervisors will control accumulations of flammable and combustible waste material.

5. Training: The Personnel Manager and Risk Manager are responsible for training of fire hazards to the employee. They will also review with each employee, upon initial assignment, those parts of the plan which the employee must know.

6. The Maintenance Department will maintain all equipment to prevent accidental ignition of combustible materials.

7. Record Keeping: The Personnel Manager must maintain the following training Records:
A. Attendance Record
B. Training Session Record listing the date, trainer, summary/outline, handouts, etc.
8. Program Review: This Fire Prevention Plan will be reviewed annually by the Program Coordinator and updated as needed.

**CLOW STAMPING COMPANY HAZARD COMMUNICATION RIGHT-TO-KNOW PROGRAM**

GENERAL INFORMATION

In order to comply with the OSHA Hazard Communication / Right- to- Know Standard, the following written Hazard Communication Program has been established for Clow Stamping Company.

The Risk Manager is the Program Coordinator and has overall responsibility for the Hazard Communication Program. The Program Coordinator will review and update the program as necessary.

The written program is available upon request to the Program Coordinator.

INVENTORIES:

LIST OF HAZARDOUS CHEMICALS

The Risk Manager is responsible for compiling and maintaining and updating list of all hazardous chemicals used by employees. A copy of the list is included with the program and with each set of Safety Data Sheets. Further information on each noted chemical can be obtained by reviewing the Safety Data Sheets. Computers located in shipping, weld, tool, and Supervisor offices can access the list. The shipping department is responsible for a (SDS) search on all incoming products by use of electronic search. If no (SDS) is found it is the responsibility of the shipping department to notify the Risk Manager.

LIST OF HARMFUL PHYSICAL AGENTS

The Risk Manager will make a list of harmful physical agents when present in the workplace and where workers may be exposed to the agent through equipment use, product handling or otherwise. Heat, noise, ionizing radiation and non-ionizing radiation sources will be listed for each work area and the corresponding physical agent fact sheet.

SAFETY DATA SHEETS (SDS)

The Risk Manager will be responsible for obtaining, maintaining and updating the Safety Data Sheet system.

He will review all incoming data sheets, noting new or significant health and safety information. He will see that any new information is passed on to the affected employees. SDS sheets will be scanned into a computer-based system Alchemy. They can be accessed through any computer terminal that has Alchemy installed on it.

Look - up instructions are as follows: (1) **From screen** – Double click on SDS icon. (2) **From search mode** – type in chemical name and click on search button. When the data sheet is listed that you are looking for (3) **click on the open button**. (4) **Double click on** – SDS sheet to view, then wait it will make the connection to paper port then you can read or print the data sheet from their.

**To print data sheet**: 1. Click on file. 2. Click on print. 3. Click on ok.

SDS and other related written information will be available to all employees for review during each work shift.

If an SDS is not available for a particular chemical or physical agent, immediately contact the Risk Manager or Personnel Manager.

All vendor samples must be accompanied by a Safety Data Sheet.

LABELING

The Risk Manager is responsible for the labeling program and will review the labeling system annually and update it as required.

HAZARDOUS CHEMICALS

Upon delivery, the Risk Manager will verify that all containers of hazardous chemicals are clearly labeled with the following:

1. Chemical identity (trade name, etc.)
2. Appropriate hazard warning (what happens if exposed)
3. Name and address of the manufacturer

The Supervisors / Leads on each shift and in each department will ensure all secondary containers into which chemicals are transferred are labeled with the identity and appropriate hazard warning.

Labels are not required on portable use containers if attended. Pipes will be marked.

HARMFUL PHYSICAL AGENTS

The Risk Manager will ensure that all equipment or work areas that generate harmful physical agents at a level that may be expected to approximate or exceed permissible exposure limits are labeled with the following:

1. The name of the physical agent
2. The appropriate hazard warning

* Please note the OSHA noise standard in the Physical Agents section of the SDS book under "Noise".

EMPLOYEE TRAINING

The Risk Manager will be responsible for the employee training program. He will ensure that all elements listed below are carried out.

All existing employees and each new employee prior to starting work with chemicals, physical agents, or infectious agents will receive initial Hazard Communication Right-To-Know training. The training will include:

1. An overview of the Hazard Communication / Right-To-Know standard and this program.
2. Location and availability of the Clow Stamping Company written Hazard Communication Program.
3. Chemicals and physical agents present in the workplace.
4. Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area.
5. How to lessen or prevent exposure to hazardous chemicals or physical agents by using good work practices and wearing personal protective equipment.
6. Steps which Clow Stamping Company has taken to prevent exposure to chemicals or physical agents.
7. Location of SDS books and other written information and how to read and interpret the information on both the labels and the SDS.

TRAINING ON INFECTIOUS AGENTS MUST ALSO INCLUDE:

1. The chain of infection
2. Proper techniques to avoid self-contamination
3. Hazard to special at-risk employee groups

***** NOTE: Bloodborne Pathogen Program may be found in the SDS books.
A brief overview of Bloodborne Pathogen hazards will be include in Workers-Right-To-Know training; however, there will be annual training each year to specifically cover Bloodborne Pathogens.

A copy of "Control of Communicable Diseases in Man" is available to all employees potentially exposed to infectious agents. Ask the Risk Manager for a copy.

Hazard Communication/Workers-Right-To-Know refresher training will be conducted annually.

Prior to new chemical or physical agents being introduced into a department, each employee of that department will be given information as outlined above.

HAZARDOUS NON-ROUTINE TASKS

Periodically, an employee is required to perform hazardous non-routine tasks. Prior to starting such task, the affected employee will be given information by their supervisor about hazardous chemicals to which they may be exposed during such activity. This information will include:

1. Specific chemical hazards
2. Protective/Safety measures
3. Precautions to take to reduce or avoid exposure

Example of non-routine task performed at Clow Stamping Company:

| Task | Hazardous Chemical |
|---|---|
| Moving from Press Room to Buffing Area | Acid |

INFORMING CONTRACTORS

It is the responsibility of the Maintenance Manager to provide contractors with the information regarding the hazardous chemicals they may be exposed to while at Clow Stamping Company, the labeling system in use, protective measures to be taken, the safe handling procedures to be used and the location and availability of SDS.

The Maintenance Manager will be responsible for contacting each contractor before work is started to obtain the appropriate hazard information concerning chemicals that the contractor is bringing to this facility.

RECORD KEEPING

The Risk Manager must maintain the following training records:

1. Attendance Record
2. Training session record listing date, trainer, summary/outline, handouts, etc.

PROGRAM REVIEW

This Hazard Communication Program / Right-To-Know will be reviewed annually by the Risk Manager and Personnel Manager and updated as needed.

# SAMPLE - SAFETY DATA SHEET

**SDS ID NO.:** 0162MAR019
**Revision Date** 05/22/2015

## 1. IDENTIFICATION

**Product Name:** Marathon Petroleum Multipower-3 15W-40 Motor Oil
**Synonym:** Multipower-3 15W-40 Motor Oil; Multipower-3 15W-40 Heavy Duty Motor Oil
**Product Code:** 0162MAR019
**Chemical Family:** Motor/Lube Oil
**Recommended Use:** Engine Oil.
**Restrictions on Use:** All others.
**SDS information:** 1-419-421-3070
**Emergency Telephone:** 1-877-627-5463

## 2. HAZARD IDENTIFICATION

**Classification**
**OSHA Regulatory Status**
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Serious eye damage/eye irritation Category 2A
**Hazards Not Otherwise Classified (HNOC)**
Not applicable.
**Label elements**
**EMERGENCY OVERVIEW**
**Manufacturer, Importer, or Responsible Party Name and Address:**

**MARATHON PETROLEUM COMPANY LP**
**539 South Main Street**
**Findlay, OH 45840**

**Warning**
Causes serious eye irritation





**Precautionary Statements - Prevention**
Wash hands and any possibly exposed skin thoroughly after handling
Wear eye/face protection
**Precautionary Statements - Response**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical attention
**Precautionary Statements - Storage**
Not applicable.
**Precautionary Statements - Disposal**
Not applicable.
**Additional Information**
Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Motor oil is a complex mixture of highly refined lubricating oil base stocks and additives.

**Composition Information:**

| Name | CAS Number | % Concentration |
|---|---|---|
| Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts | 113706-15-3 | 1-5 |
| Dinonyl diphenylamine | 36878-20-3 | 1-5 |
| Butene, homopolymer | 9003-29-6 | 1-5 |
| Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs. | 84605-20-9 | 1-5 |

All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

## 4. FIRST AID MEASURES

**First Aid Measures**

**General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).
**Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. If symptoms occur get medical attention.
**Skin Contact:** Wash skin with plenty of soap and water. If irritation or other symptoms occur get medical attention. Wash contaminated clothing and clean shoes before reuse.
**Eye Contact:** Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention.
**Ingestion:** Rinse mouth out with water. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. If symptoms develop, seek medical attention.
**Most important signs and symptoms, both short-term and delayed with overexposure**
**Adverse Effects:** Causes eye irritation. Symptoms may include redness, itching, and inflammation. May
**Appearance** Brown Liquid **Physical State** Liquid **Odor** Petroleum

cause skin irritation and/or dermatitis Preexisting skin conditions and/or respiratory disorders may be aggravated by exposure to this product.
**Indication of any immediate medical attention and special treatment needed**
**Notes To Physician:** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**
For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.
**Unsuitable extinguishing media**
Do not use a solid water stream as it may scatter and spread fire.
**Specific hazards arising from the chemical**
The product is not combustible per the OSHA Hazard Communication Standard, but will ignite and burn at temperatures exceeding the flash point.
**Hazardous combustion products**
Smoke, carbon monoxide, and other products of incomplete combustion.
**Explosion data**
**Sensitivity to Mechanical Impact** No.
**Sensitivity to Static Discharge** No.
**Special protective equipment and precautions for firefighters**
Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Use water spray to cool exposed surfaces from as far a distance as possible. Keep run-off water out of sewers and water sources.
**Additional firefighting tactics**
Not applicable.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Keep public away. Isolate and evacuate area. Shut off source if safe to do so.
**Protective equipment:** Use personal protection measures as recommended in Section 8.
**Emergency procedures:** Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.
**Environmental precautions:** Avoid release to the environment. Avoid subsoil penetration.
**Methods and materials for containment:**
Prevent further leakage or spillage if safe to do so.
**Methods and materials for cleaning up:**
Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers.

## 7. HANDLING AND STORAGE

**Safe Handling Precautions:** Avoid contact with skin, eyes and clothing. Do not swallow. Avoid breathing vapors or mists. Use good personal hygiene practices. Wash thoroughly after handling. Use personal protection measures as recommended in Section 8. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Refer to applicable EPA, OSHA, NFPA and consistent state and local requirements.
Lifetime, continuous skin contact with used motor oils has caused skin cancer in laboratory tests. In testing, thorough washing has been found to prevent the development of skin cancer from used motor oil exposure. Avoid excessive skin contact. Exercise good personal hygiene including the removal and washing of soiled clothing and destroy used motor oil contaminated leather shoes/boots.
**Storage Conditions:** Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store away from incompatible materials.
**Incompatible Materials** Strong oxidizing agents.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Name ACGIH TLV OSHA PELS: OSHA - Vacated PELs NIOSH IDLH**
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts
113706-15-3
- - - -
Dinonyl diphenylamine
36878-20-3
- - - -
Butene, homopolymer
9003-29-6
- - - -
Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs.
84605-20-9
- - - -
**Notes:** The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.
**Engineering measures:** Local or general exhaust required when using at elevated temperatures that generate vapors or mists.
**Personal protective equipment**
**Eye protection:** Use goggles or face-shield if the potential for splashing exists.
**Skin and body protection:** Wear neoprene, nitrile or PVA gloves to prevent skin contact. Glove suitability is based on workplace conditions and usage. Contact the glove manufacturer for specific advice on glove selection and breakthrough times. Wear appropriate protective clothing.
**Respiratory protection:** Use a NIOSH approved organic vapor chemical cartridge or supplied air respirators when there is the potential for airborne exposures to exceed permissible exposure limits or if excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134. Self-contained breathing apparatus should be used for fire fighting.
**Hygiene measures:** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.


# 9. PHYSICAL AND CHEMICAL PROPERTIES


**Information on basic physical and chemical properties**
**Physical State** Liquid
**Appearance** Brown Liquid
**Color** Brown

**Odor** Petroleum
**Odor Threshold** No data available.
**Property Values (Method)**
**Melting Point / Freezing Point** No data available.
**Initial Boiling Point / Boiling Range** No data available.
**Flash Point** > 220 °C / > 428 °F (Cleveland Open-Cup)
**Evaporation Rate** No data available.
**Flammability (solid, gas)** Not applicable.
**Flammability Limit in Air (%):**
**Upper Flammability Limit:** No data available.
**Lower Flammability Limit:** No data available.
**Explosion limits:** No data available.
**Vapor Pressure** No data available.
**Vapor Density** No data available.
**Specific Gravity / Relative Density** 0.86-0.875
**Water Solubility** No data available.
**Solubility in other solvents** No data available.
**Partition Coefficient** No data available.
**Decomposition temperature** No data available.
**pH:** No available data.
**Autoignition Temperature** No data available.
**Kinematic Viscosity** 82 mm2/s @ 40°C / 104°F
**Dynamic Viscosity** No data available.
**Explosive Properties** No data available.
**VOC Content (%)** 1.7 (w/w)
**Density** No data available.
**Bulk Density** Not applicable.

## 10. STABILITY AND REACTIVITY

**Chemical stability** Stable under recommended storage conditions.
**Possibility of hazardous reactions** None under normal processing.
**Hazardous polymerization** Will not occur.
**Conditions to avoid** Sources of heat or ignition.
**Incompatible Materials** Strong oxidizing agents.
**Hazardous decomposition products** None known under normal conditions of use.

## 11. TOXICOLOGICAL INFORMATION

**Potential short-term adverse effects from overexposures**
**Inhalation** Overheating may produce vapors which may cause respiratory irritation, dizziness and nausea.
**Eye contact** Irritating to eyes. May cause reddening and tearing.
**Skin contact** May cause skin irritation. Prolonged or repeated exposure may cause dermatitis, folliculitis
**Reactivity** The product is non-reactive under normal conditions.




**Ingestion** May cause irritation of the mouth, throat and gastrointestinal tract.
**Acute toxicological data**

| Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts<br>113706-15-3 | - | - | - |
| Dinonyl diphenylamine<br>36878-20-3 | - | - | - |
| Butene, homopolymer<br>9003-29-6 | - | - | - |
| Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs.<br>84605-20-9 | | | |

- - -
**Delayed and immediate effects as well as chronic effects from short and long-term exposure**
This product is considered to have a low order of acute and chronic oral and dermal toxicity.
USED MOTOR OIL: Lifetime, continuous skin contact with used motor oils has caused skin cancer in laboratory tests. The combustion process produces compounds (polycyclic aromatic hydrocarbons) in motor oils that increase with use and are responsible for the cancer induction. Thorough washing has been found to prevent the development of skin cancer on animals from used motor oil exposure.
ZDDP: Zinc dialkyldithiophosphate (ZDDP) additives are primarily eye and/or skin irritants or corrosives with low acute toxicity via oral, dermal, and inhalation routes of exposure and are not skin sensitizers. In laboratory repeat dose studies by the dermal and oral routes, ZDDPs cause effects only at high doses, primarily due to irritation, in a manner similar to other irritating materials. The weight-of- evidence of genotoxicity testing indicates that ZDDPs are not mutagenic and do not cause larger chromosomal effects.
**Adverse effects related to the physical, chemical and toxicological characteristics**
**Signs and Symptoms** Causes eye irritation. Symptoms may include redness, itching, and inflammation. Contact may cause skin dermatitis and/or irritation. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.
**Sensitization** Not expected to be a skin or respiratory sensitizer.
**Mutagenic effects** None known.
**Carcinogenicity** Cancer designations are listed in the table below
**Name ACGIH**
**(Class)**
**IARC**
**(Class)**
**NTP OSHA**
Phosphorodithioic acid,
mixed O,O-bis(sec-Bu and
isooctyl) esters, zinc salts
113706-15-3
Not Listed Not Listed Not Listed Not Listed
Dinonyl diphenylamine
36878-20-3
Not Listed Not Listed Not Listed Not Listed
Butene, homopolymer
9003-29-6
Not Listed Not Listed Not Listed Not Listed
Amines, polyethylenepoly-,
reaction products with
succinic anhydride
polyisobutenyl derivs.
84605-20-9
Not Listed Not Listed Not Listed Not Listed


**Reproductive toxicity** None known.
**Specific Target Organ Toxicity**
**(STOT) - single exposure**
Not classified.
**Specific Target Organ Toxicity**
**(STOT) - repeated exposure**
Not classified.
**Aspiration hazard** Not classified.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**
Used motor and/or lube oils can be toxic to birds and fish.
**Name Algae/aquatic plants Fish Toxicity to**
**Microorganisms**
**Crustacea**
Phosphorodithioic acid,
mixed O,O-bis(sec-Bu and
isooctyl) esters, zinc salts
113706-15-3
- - - -
Dinonyl diphenylamine
36878-20-3
- - - -

Butene, homopolymer
9003-29-6
- - - -
Amines, polyethylenepoly-,
reaction products with
succinic anhydride
polyisobutenyl derivs.
84605-20-9
- - - -

**Persistence and degradability** Not expected to be readily biodegradable.
**Bioaccumulation** Contains component(s) with the potential to bioaccumulate.
**Mobility in soil** No information available.
**Other adverse effects** No information available.

## 13. DISPOSAL CONSIDERATIONS

**Description of Waste Residues**
No information available.
**Safe Handling of Wastes**
Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required.
**Disposal of Wastes / Methods of Disposal**
The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance
with federal, state and local regulations.
**Methods of Contaminated Packaging Disposal**
Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty
containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

## 14. TRANSPORT INFORMATION

**DOT (49 CFR 172.101):**

**UN Proper Shipping Name:** Not Regulated
**UN/Identification No:** Not applicable
**Class:** Not applicable.
**Packing Group:** Not applicable.
**TDG (Canada):**
**UN Proper Shipping Name:** Not Regulated
**UN/Identification No:** Not applicable.
**Transport Hazard Class(es):** Not applicable.
**Packing Group:** Not applicable.

## 15. REGULATORY INFORMATION

**US Federal Regulatory Information:**
US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.
**EPA Superfund Amendment & Reauthorization Act (SARA):**
**SARA Section 302:** This product may contain component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:
**Name CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs**
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts
NA
Dinonyl diphenylamine NA
Butene, homopolymer NA
Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs.
NA
**SARA Section 304:** This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:
**Name Hazardous Substances RQs**
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts
NA

Dinonyl diphenylamine NA
Butene, homopolymer NA
Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs.
NA
**SARA Section 311/312:** The following EPA hazard categories apply to this product:
Acute Health Hazard
**SARA Section 313:** This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).
**Name CERCLA/SARA 313 Emission reporting:**
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts
None
Dinonyl diphenylamine None
Butene, homopolymer None
Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs.
None

**State and Community Right-To-Know Regulations:**
The following component(s) of this material are identified on the regulatory lists below:

**0162MAR019 Marathon Petroleum Multipower-3 15W-40 Motor Oil**
**Revision Date** 05/22/2015
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed
Pennsylvania Right-To-Know: Not Listed
Massachusetts Right-To Know: Not Listed
Florida Substance List: Not Listed
Rhode Island Right-To-Know: Not Listed
Michigan Critical Materials Register List: Not Listed
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances:
Not Listed
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List:
Not Listed
Illinois - Toxic Air Contaminants: Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:
Not Listed
Dinonyl diphenylamine
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed
Pennsylvania Right-To-Know: Not Listed
Massachusetts Right-To Know: Not Listed
Florida Substance List: Not Listed
Rhode Island Right-To-Know: Not Listed
Michigan Critical Materials Register List: Not Listed
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances:
Not Listed
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List:
Not Listed
Illinois - Toxic Air Contaminants: Not Listed

New York - Reporting of Releases Part 597 -
List of Hazardous Substances:
Not Listed
Butene, homopolymer
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed
Pennsylvania Right-To-Know: Not Listed
Massachusetts Right-To Know: Not Listed
Florida Substance List: Not Listed
Rhode Island Right-To-Know: Not Listed
Michigan Critical Materials Register List: Not Listed
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous
Substances:
Not Listed
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous
Substances List:
Not Listed
Illinois - Toxic Air Contaminants: Not Listed
New York - Reporting of Releases Part 597 -
List of Hazardous Substances:
Not Listed
Amines, polyethylenepoly-, reaction products with succinic anhydride polyisobutenyl derivs.
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed

New Jersey Right-To-Know: Not Listed
Pennsylvania Right-To-Know: Not Listed
Massachusetts Right-To Know: Not Listed
Florida Substance List: Not Listed
Rhode Island Right-To-Know: Not Listed
Michigan Critical Materials Register List: Not Listed
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous
Substances:
Not Listed
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous
Substances List:
Not Listed
Illinois - Toxic Air Contaminants: Not Listed
New York - Reporting of Releases Part 597 -
List of Hazardous Substances:
Not Listed
**Canada DSL/NDSL Inventory:** This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.
**Canadian Regulatory Information:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.
**Name Canada - WHMIS: Classifications of Substances:**
**Canada - WHMIS: Ingredient Disclosure:**
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and isooctyl) esters, zinc salts
D2B 1%
Butene, homopolymer Uncontrolled product according to WHMIS classification criteria
**Note:** Not applicable.

## 16. OTHER INFORMATION

**Prepared By** Toxicology and Product Safety
**Revision Notes**
**Revision Date** 05/22/2015
**Disclaimer**
**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the**
**date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.**



Sample of G.H.S label

## HEARING CONSERVATION SAFETY PROGRAM

Protection against the effects of noise exposure will be provided by Clow Stamping Company to its employees whenever and in whatever areas the noise exposure equals or exceeds an 8 hour time - weighted average (TWA) sound level of 85 decibels as required by OSHA.

Noise levels will be measured annually or sooner if a change in production process, equipment, controls, etc., increases noise exposure.

Hearing protection is required in all areas of the shop where there is a TWA of 85 decibels. Employees working in those areas will be issued hearing protection at no cost and annually instructed in the use of that equipment. Signs throughout the plant will distinguish hearing protection areas.

Clow Stamping Company will enforce the use of hearing protection. Warning slips may be given for violations.

Yearly audiometric hearing testing will be given to all employees whose exposure equals or exceeds a TWA of 85 decibels. Testing shall be preceded by 14 hours without workplace noise exposure. Hearing protection may be used as a substitute to the 14 hour requirement. Employees must avoid high levels of non-occupational noise during the 14 hours preceding testing.

Annual testing will be compared to your base line testing to determine if a standard threshold shift (STS) has occurred. A STS is a change in hearing threshold, relative to the baseline audiogram in either ear. If a STS has occurred, a retest may be given and the results of the retest used as the annual audiogram.

If a STS has occurred, you will be informed in writing within 21 days of testing.

Unless a physician determines the STS is not work related or aggravated by noise at work, the following steps are taken:

A. If you are not using hearing protection, you will be fitted and trained in their use.
B. If you already use protection, you will be refitted and retrained in their use.
C. You will be sent for a clinical audiological or otological evaluation if additional testing is necessary or if it is suspected that a medical condition is caused or aggravated by the use of earring protectors, or if a medical condition of the ear is unrelated to the use of hearing protection.

## HEARING PROTECTION DEVICES

Clow Stamping provides basic hearing protection devices for your use.

Hearing protectors act as barriers to reduce sound entering the ear. They may be inconvenient at times and take some getting used to. But wearing them now is your best insurance for hearing well in the future.

## Types of Hearing Protection

Here are a few examples from our large selection

### E-A-R Classic Uncorded Ear Plugs

The EAR Classic ear plugs are the most popular earplugs in the world! The AO Classic ear plugs timeless design has proven itself in the field for over 28 years, and its dermatological safe foam provides a comfortable, effective seal while exerting little pressure on the ear. Moisture resistant, they will not absorb moisture and swell like many other models. Foam will maintain its comfort, fit and critical recovery characteristics. Uncorded. Hearing protection NRR 29 dB.
concern of inserting earplugs with soiled hands.

## Earmuffs

Earmuffs offer comfort without any direct pressure inside the ear canal for greater comfort. Earmuffs are usually constructed of all plastic materials (these are called **dielectric** and are ideal for work around electrical hazards) or a combination of metal and plastic for added durability. The three common designs of earmuffs are the standard **over-the-head** (see Figure 4a.), **cap-mounted** (Figure 4b.) and **behind-the-neck** (Figure 4c.). The cap-mounted earmuffs are design to mount directly to most hard hats that have side-accessory slots and the behind-the-neck style can also be used while wearing a hard hat or face shields. Low profile behind the neck earmuffs are commonly used by welders since they will fit inside of a welding helmet.

# Around The Clock Hearing Protection

Noise exposure around the clock can damage hearing.  To prevent hearing loss, protect your hearing all day long, at home, work, and play.  Save your hearing from noise to enjoy all the good sounds of life for a long time.

**CLOW STAMPING COMPANY**
**LOCK-OUT-TAG-OUT PROGRAM**

**A. Purpose**.

The purpose of this program is to establish lockout / Tagout procedures to prevent the unintended release of stored energy which may energize a machine or equipment, causing injury to an employee.

**B. Examples of stored energy where lockout / Tagout applies.**

1. Electrical
2. Mechanical
3. Chemicals, Acids & Caustics
4. Gas
5. Hydraulic
6. Pneumatic
7. Springs
8. Falling
9. Steam

**C. Scope.**

A lockout / Tagout will be required whenever performing maintenance or service work on machines or equipment.

**D. Required L.O.T.O**

1. Constructing, installing, and setting up, adjusting, inspecting, maintaining or servicing machines or equipment. These may also include lubrication, cleaning or un-jamming of machines and making adjustments or tool changes, where employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

2. Before removal or bypassing any guard or other safety device.

3. When an employee is required to place any part of body into a point of operation or other danger zone that exists during a machines operation cycle.

**E. Exceptions to L.O.T.O**

1. Cord and plug type of equipment when operator has control of the plug.

2. Normal production activities in which lockout can't be feasibly conducted because of the nature of the operation. Alternative measures that provide effective protection will be used.

**F. Responsibilities**

1. Risk Manager
a) Procedure development

b) Employee training
c) Conduct periodic inspections to verify compliance

2. Maintenance Personnel and Supervisors
a) Knowledge of L.O.T.O procedures
b) Enforcement of L.O.T.O policy
c) Recognition when training is needed

3. Authorized employees that perform L.O.T.O
a) Understanding the purpose of L.O.T.O
b) Will apply L.O.T.O devices

4. Employees
a) Understanding the importance of L.O.T.O

**G. Energy control devices**

1. Locks
2. Chains
3. Tags
4. Locking devices

**H. L.O.T.O personnel**

1. Locks will be single key with no duplicates the lock owner must maintain the key
2. The company will supply locks to affected personnel
3. Locks will not be used for any other purpose than lockout
4. Tags will not be used unless locks cannot be physical installed to isolation devices these Instances will be brought to the attention of the Risk Manager
5. Lockout devices shall only be removed by their installer
6. Each shift will have assigned L.O.T.O personnel

**I. Training**

1. During facility or job orientation
2. Methods and means for isolation and control of energy lockout / Tagout
3. Purpose and function of program
4. Each affected employee shall be instructed in the purpose and use of the energy control procedure

**J. Retraining**

1. There is a change in job assignments
2. A change in machines or equipment
3. Equipment or processes present a new hazard
4. A change in energy control procedures
5. There are deviations or inadequacies detected in the procedures

**K. General lockout procedure**

1. Shut off main power supply
2. Test all incoming lines for power
3. Switch machine on to confirm that power has been shut off. Switch machine to off position
4. Apply your lock- tag- date
5. Notify other workers that machine is down. When the next shift reports for work, notify them of the down machine. Remove your lock and have the lockout / Tagout person from that shift place his lock on the machine. Or if the group lockout is used remove your lock when repair work is complete. The maintenance supervisor lock may be applied to the machine directly by another person as long as the maintenance supervisor controls the only key to the lock. And is responsible for the repair of the machine, and the release of the machine back into production
6. Make sure all maintenance personnel are notified. The last lock applied will be that of the maintenance supervisor how is responsible for repair of the machine or equipment
7. When the machine has been repaired, each maintenance person and L.O.T.O person will remove his lock. The final lock to be removed will always be by the maintenance supervisor
8. Each L.O.T.O person is issued there own locks. Keep your personal lock in your tool box. Do not lose your key, there are no duplicates. There will be trained personnel on each shift

**L. Specific lockout procedures**

1. Equipment having more than one energy source
2. Equipment requiring more than one lockout device
3. Equipment lockout requires a group lockout
4. A previous accident has occurred due to unexpected start up of equipment
5. Equipment requires tags rather than locks

**M. Lockout / Tagout of energy isolating devices**

1. Only trained and authorized employees shall affix energy isolating devices
2. Devices are to be affixed in such a manner that it will hold the energy isolating devices in a safe or off position

**N. Restoring locked equipment**

1. Notify personnel in start up area
2. Clear all tools and repair equipment
3. Remove locking devices
4. Restore all energy isolating devices to normal operating level
5. Notify operating personnel that equipment is now ready for operation

**O. Emergency removal of lock other than by installer**

1. Attempt to reach person who installed lock to find out equipment status
2. Notify Risk Manager

**P. Outside contractors**

1. Management and contractors will inform each other of their respective lockout or Tagout procedures
2. Management will train all affected employees on restrictions and prohibitions of contractor's energy control procedures

## CLOW STAMPING COMPANY RESPIRATOR PROGRAM

GENERAL INFORMATION:
In order to comply with the OSHA Standard 1910.132 Respirator Program, the following written program has been established for Clow Stamping Company.

The Personnel Manager is the Program Coordinator and has overall responsibility for the respirator program. The Program Coordinator will review and update the program as necessary.

### "RESPIRATOR PROGRAM"

**1. Requirements for use:**

It has been determined that in the normal course of work you will not be exposed to any elements which require the use of a respirator. However, if due to nuisance dust or some other element, you choose to wear a respirator, one will be provided for you.

**2. Medical Examinations:**

You will be provided, at no cost, a medical examination to determine if you are physically able to work while wearing a respirator.

**3.** The respirator is used by you, for your exclusive use. Do not lend it to others. Store your respirator in a clean plastic bag. Change respirator every 8 hours or whenever you have difficulty breathing.

**4. Record Keeping:**

The Personnel Manager must maintain the following training records:
A. Medical examination record.

**5. Program Review:**

This respirator program will be reviewed annually by the Risk Manager.

# OSHA Regulations (Standards - 29 CFR)

## (Mandatory) Information for Employees Using Respirators When not Required Under Standard. - 1910.134 App D

- **Standard Number:** 1910.134 App D
- Standard Title: (Mandatory) Information for Employees Using Respirators When not Required Under Standard.
- **Subpart Number:** I
- Subpart Title: Personal Protective Equipment

### Appendix D to Sec. 1910.1:34 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, of if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

## TORNADO SAFETY PLAN

In order to comply with the OSHA Standard 1910.38 Employee Emergency Plan the following plan has been established. The Risk Manager is the Program Coordinator and has overall responsibility for the Employee Emergency Plan. The Risk Manager will review and update the program as necessary.

**Training** – The Risk Manager and Personnel Manager are responsible for training all Managers, Supervisors, Lead People and employees on how to follow the plan to ensure safe evacuation of employees.

**Record Keeping** – The Risk Manager must maintain the following records:

**Attendance** - Training session record listing date, trainer, outline, handout, etc.

**First Alert Warning** - We are equipped with (N.O.A.A) first alert all hazards weather radios.

**Alarm System** - The alarm will be an announcement over the intercom (overhead & phone page) The second back-up alarm will be the shop buzzer. There is one location in the press brake area outside the Human Resources door by breaker panels where the buzzer can be activated manually. Another means of notification is our email system and should be used if time permits. These alarms should be activated by 2 people if time permits.
The preferred means for reporting rescue, medical and fire emergencies is to call 911.

**Supervisors** – The following Managers / Supervisors will remain to complete critical plant procedures before they take shelter. At no time shall they unnecessarily risk personal safety. As part of the training requirements, these procedures will be included in all tornado drills. The amount of time required to complete critical procedures will be documented at each drill.

- Accounting Manager / CFO
- Quality Manager
- Personnel Manager
- Production Manager
- Tool Room Manager
- Shipping Manager
- Risk Manager
- Sales & Marketing Manager
- Estimating Manager
- Purchasing Manager
- Customer Service Manager
- Maintenance Manager
- Supervisors – All Shifts

**Rescue and Medical Duties** – First Responders will assist with necessary first aid.

**Accountability** – Each Manager / Supervisor and Lead Person must account for all employees in his or her department after the drill is complete. A report of that accounting will be given to the Personnel Manager or Risk Manager. If one of these individuals is not available, report to the acting Supervisor.

**Contact for Additional Training / Data** – People who can be contacted for further information or explanations of duties under the plan containing the tornado evacuation / drill, alarm system, training, escape route or elements of the plan are:
Production Manager, Personnel Manager, Risk Manager, Second Shift Supervisors and Third Shift Supervisors.

| **JOB SAFETY ANALYSIS** | **JOB TITLE** | **Task** |
|---|---|---|
| | All Office Personnel | Walk through shop |

| **COMPANY** | **DATE** | **ANALYSIS BY** |
|---|---|---|
| CLOW STAMPING COMPANY | 3/4/96 | Doug Buehl |

**REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT**
Safety glasses

| Sequence of basic job steps | Hazards considered | Recommended action or procedure |
|---|---|---|
| 1. Walk through shop | Noise | Not needed below required level. |
| | Flying objects | Safety glasses with side shields are required. |
| | Falling Objects | Safety shoes and hard hats not needed do to the distance of the hazard. |

| JOB SAFETY ANALYSIS | JOB TITLE | TASK |
|---|---|---|
| | Buffing | Buffing / Grinding |

| COMPANY | DATE | ANALYSIS BY |
|---|---|---|
| Clow Stamping Company | 3/8/96 | Doug Buehl |

**REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT**
Mandatory safety shoes, safety glasses. Gloves as needed.

| Sequence of basic job steps | Potential hazards | Recommended action or procedure |
|---|---|---|
| 1. Bring parts to buffing | Falling objects<br>Flying particles<br>Forklift driving<br>Lifting parts | Safety shoes<br>Safety glasses<br>Training<br>Mechanical lifting device, and<br>Ergonomic training. |
| 2. Buff / Grind parts | Falling objects<br>Flying particles<br>Forklift driving<br>Sharp edges<br>Vibration<br>Noise | Safety shoes<br>Safety glasses<br>Training<br>Gloves<br>Hand Anti-Vibration material<br>Hearing protection |
| 3. Re-turn parts to rack | Falling objects<br>Flying particles<br>Forklift driving<br>Lifting parts | Safety shoes<br>Safety glasses<br>Training<br>Mechanical lifting device, and<br>Ergonomic training. |

| **JOB SAFETY ANALYSIS** | **JOB TITLE** | **Task** |
|---|---|---|
| | Machining | Set-up / production |
| **COMPANY** | **DATE** | **ANALYSIS BY** |
| CLOW STAMPING COMPANY | 2/29/96 | Doug Buehl |

**REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT**
Mandatory safety glasses, hearing protection, safety shoes. Gloves as needed.

| Sequence of basic job steps | Potential hazards | Recommended action or procedure |
|---|---|---|
| 1. Bring fixture to machine | Lifting tool | Use mechanical lifting device, and ergonomic training. |
| | Falling tool / parallels | Safety toe protection. |
| 2. Set up tool | Wrench slipping off bolt | Use box end wrenches. |
| 3. Bring parts to machine | Lifting parts | Use mechanical lifting device. |
| | Falling parts | Safety toe protection. |
| 4. Set up chip guard's | Empty pans around machine | Good house keeping practices. |
| 5. Operating machine | Flying particles | Safety glasses with side shields. |
| | Noise | Hearing Protection. |
| | Sharp edges | Gloves depending on job. |
| 6. Take tool out of machine | Falling tool / parallels | Safety toe protection. |
| | Wrench slipping off bolts | Use box end wrenches. |
| | Put parts away Lifting parts | Use mechanical lifting device and provide Ergonomic training. |
| | Falling parts | Safety toe protection. |

**JOB SAFETY ANALYSIS** **JOB TITLE** Press Operator **Task** Set-up / production all tools

**COMPANY:** Clow Stamping Company **DATE :** 2/26/96 **ANALYSIS BY** Doug Buehl

**REQUIRED AND / OR RECOMMENDED**
Mandatory safety glasses, hearing protection, safety shoes.

**PERSONAL PROTECTIVE EQUIPMENT** Gloves mandatory on blanking as needed on balance.

| Sequence of basic job steps | Potential hazards | Recommended action or procedure |
|---|---|---|
| 1. Bring tool to press | Lifting tool | Use mechanical lifting device, lifting and ergonomic training. |
| | Falling tool / parallels | Safety toe protection. |
| 2. Set up tool | Pinch points | Use die safety block / turn off machine. |
| | Wrench slipping off bolt | Use box end wrenches. |
| | Lifting parts | Use mechanical lifting device. |
| 3. Bring parts to press | Falling parts | Safety toe protection. |
| | Lifting parts | Ergonomic training. |
| | Driving forklift | Forklift training. |
| 4. Set up safety guard or device | Working above ground | Provide ladder or stool. |
| | Pinch points | Use die safety block / turn off machine. |
| 5. Operating press | Flying particles | Safety glasses with side shields. |
| | Noise | Hearing Protection. |
| | Sharp edges | Gloves/Kevlar sleeves depending on job. |
| | Tool pinch points | Point of operation guarding. |
| | Tool adjustment / repair | Die safety block. |
| | Stuck scrap / parts | Hand tools / Gloves/Kevlar sleeves. |
| | Miss blanked strip | Hand tools / Gloves/Kevlar sleeves. |
| | Lifting tool / Parts | Use mechanical lifting device and provide lifting / Ergonomic training. |
| 6. Take tool out of press | Falling tool / parallels | Safety toe protection. |
| | Wrench slipping off bolts | Use box end wrenches. |

| JOB SAFETY ANALYSIS | JOB TITLE | Task |
|---|---|---|
| | Shear Operator | Cut raw material |

| COMPANY | DATE | ANALYSIS BY |
|---|---|---|
| CLOW STAMPING COMPANY | 3/4/96 | Doug Buehl |

**REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT**
Mandatory safety glasses, hearing protection, safety shoes, and gloves.

| Sequence of basic job steps | Potential hazards | Recommended action or procedure |
|---|---|---|
| 1. Bring material to table | Falling material | Safety toe protection. |
| | Sharp edges | Wear gloves. |
| | Crane operation | Training. |
| | Forklift operation | Training. |
| 2. Cut material | Sharp edges | Wear gloves. |
| | Noise | Hearing protection. |
| | Flying particles | Safety glasses with side shields. |
| | Falling material | Safety toe protection. |
| | Sliding / Stacking material | Use mechanical lifting device, and ergonomic training. |
| 3. Put cut material away | Sharp edges | Wear gloves. |
| | Forklift driving | Training. |
| | Falling material | Safety toe protection. |
| | Lifting | Provide ergonomic training. |

| JOB SAFETY ANALYSIS | JOB TITLE | TASK |
|---|---|---|
| | Shipping | Shipping / Receiving |
| **COMPANY** | **DATE** | **ANALYSIS BY** |
| Clow Stamping Company | 3/6/96 | Doug Buehl |

**REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT**
Mandatory safety shoes. Gloves as needed, lifting devices and training provided.

| Sequence of basic job steps | Potential hazards | Recommended action or procedure |
|---|---|---|
| 1. Bring parts to scale | Falling objects | Safety toe shoes |
| | Flying particles | NA |
| | Forklift driving | Training |
| | Lifting parts | Mechanical lifting device, and Ergonomic training. |
| 2. Put parts on scale | Falling objects | Safety toe shoes |
| | Flying particles | NA |
| | Lifting parts | Ergonomic training |
| | Sharp edges | Gloves |
| 3. Divide parts into containers | Flying particles | NA |
| | Falling objects | Safety toe shoes |
| | Lifting parts | Ergonomic training |
| | Sharp edges | Gloves |
| 4. Load parts on truck | Flying particles | NA |
| | Falling objects | Safety toe shoes |
| | Forklift driving | Training |
| | Truck moving | Chock wheels |

| JOB SAFETY ANALYSIS | JOB TITLE | TASK |
|---|---|---|
| | Tool Maker | Tool & Die |

| COMPANY | DATE | ANALYSIS BY |
|---|---|---|
| Clow Stamping | 3/20/96 | Doug Buehl |

**REQUIRED AND / OR RECOMMENED PERSONAL PROTECTIVE EQUIPMENT**
Mandatory safety shoes, safety glasses.

| Sequence of basic job steps | Potential hazards | Recommended action or procedure |
|---|---|---|
| 1. Cut material | | |
| | Falling objects | Safety toe shoes. |
| | Flying particles | Safety glasses. |
| | Lifting material | Mechanical lifting device, and ergonomic training. |
| 2. Bring material to work Center. | Falling objects | Safety toe shoes. |
| | Lifting material | Mechanical lifting device, and ergonomic training**.** |

## PPE HAZARD ASSESSMENT EQUIPMENT SELECTION BUFFING / GRINDING

| Selected Equipment | | Appropriate Sizes |
|---|---|---|
| Hand Protection | Gloves as needed. | Small, Medium, Large |
| Head Protection | Not Required | Not Required |
| Eye / Face Protection | Safety glasses with side shields meeting ANZI standards | Adjustable or as required |
| Respiratory Protection | Not Required | Not Required |
| Torso / Arm Leg protection | Not Required | Not Required |
| Foot Protection | Safety shoe or boot meeting ANZI standards | As needed |
| Electrical Protection | Not Required | Not Required |
| Hearing Protection | Plugs / Muffs<br><br>A variety of 3 must be offered | (NRR) of 19 on all types |

## PPE HAZARD ASSESSMENT EQUIPMENT SELECTION MACHINING

| Selected Equipment | | Appropriate sizes |
|---|---|---|
| Hand Protection | Gloves as needed. | Small, Medium, Large |
| Head Protection | Not Required | Not Required |
| Eye / Face Protection | Safety glasses with side shields | Adjustable or as required |
| Respiratory Protection | Not Required | Not Required |
| Torso/Arm Leg Protection | Not Required | Not Required |
| Foot Protection | Safety shoe or boot meeting ANZI standards | As needed |
| Electrical Protection | Not required | Not required |
| Hearing Protection | Plugs / Muffs<br>A variety of 3 must be offered | (NRR) of 19 on all types |

## PPE HAZARD ASSESSMENT EQUIPMENT SELECTION OFFICE PERSONAL

| Selected Equipment | | Appropriate sizes |
|---|---|---|
| Hand Protection | Not Required | Not Required |
| Head Protection | Not Required | Not Required |
| Eye / Face Protection | Safety Glasses | As needed |
| Respiratory Protection | Not Required | Not Required |
| Torso / Arm Leg protection | Not Required | Not Required |
| Foot Protection | Not Required | Not Required |
| Electrical Protection | Not Required | Not Required |
| Hearing Protection | Not Required | Not Required |

## PPE HAZARD ASSESSMENT EQUIPMENT SELECTION PRESS OPERATOR

| | Selected Equipment | Appropriate sizes |
|---|---|---|
| Hand Protection | Gloves as needed. | Small, Medium, Large |
| Head Protection | Not Required | Not Required |
| Eye / Face Protection | Safety glasses with side shields | Adjustable or as required |
| Respiratory Protection | Not Required | Not Required |
| Torso/Arm Leg Protection | Kevlar sleeves when Blanking. | As needed. |
| Foot Protection | Safety shoe or boot meeting ANZI standards | As needed |
| Electrical Protection | Not required | Not required |
| Hearing Protection | Plugs or Muffs<br>A variety of 3 must be offered | (NRR) of 19 on all types |

## PPE HAZARD ASSESSMENT EQUIPMENT SELECTION SHEAR OPERATOR

| Selected Equipment | | Appropriate sizes |
|---|---|---|
| Hand Protection | Gloves as needed | Small, Medium, Large |
| Head Protection | Not Required | Not Required |
| Eye / Face Protection | Safety glasses with side shields | Adjustable or as required |
| Respiratory Protection | Not Required | Not Required |
| Torso/Arm Leg Protection | Not Required | Not Required |
| Foot Protection | Safety shoe or boot meeting ANZI standards | As needed |
| Electrical Protection | Not required | Not required |
| Hearing Protection | Plugs or Muffs | (NRR) of 19 on all types |

## PPE HAZARD ASSESSMENT EQUIPMENT SELECTION SHIPPING

| Selected Equipment | | Appropriate sizes |
|---|---|---|
| Hand Protection | Gloves as needed | Small, Medium, Large |
| Head Protection | Not Required | Not Required |
| Eye / Face Protection | NA | NA |
| Respiratory Protection | Not Required | Not Required |
| Torso / Arm Leg protection | Not Required | Not Required |
| Foot Protection | Safety shoe or boot meeting ANZI standards | As needed |
| Electrical Protection | Not Required | Not Required |
| Hearing Protection | Not Required | Not Required |

## PPE HAZARD ASSESSMENT EQUIPMENT SELECTION TOOL ROOM

| | Selected Equipment | Appropriate sizes |
|---|---|---|
| Hand Protection | Not Required | |
| Head Protection | Not Required | Not Required |
| Eye / Face Protection | Safety Glasses with side shields | Adjustable or as required |
| Respiratory Protection | Not Required | Not Required |
| Torso / Arm Leg protection | Not Required | Not Required |
| Foot Protection | Safety shoe or boot meeting ANZI standards | As needed |
| Electrical Protection | Not Required | Not Required |
| Hearing Protection | Plugs or Muffs | Required |

- Part Number: 1910
- Part Title: Occupational Safety and Health Standards
- Subpart: Z
- Subpart Title: Toxic and Hazardous Substances
- Standard Number: 1910.1030
- Title: Bloodborne pathogens.
- Appendix: A
- GPO Source: e-CFR

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1910.1030(a)
Scope and Application. This section applies to all occupational exposure to blood or other potentially infectious materials as defined by paragraph (b) of this section.
1910.1030(b)
Definitions. For purposes of this section, the following shall apply:

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.

Blood means human blood, human blood components, and products made from human blood.

Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Clinical Laboratory means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

Contaminated means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated Laundry means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

Contaminated Sharps means any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Decontamination means the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Director means the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designated representative.

Engineering Controls means controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Handwashing Facilities means a facility providing an adequate supply of running potable water, soap, and single-use towels or air-drying machines.

Licensed Healthcare Professional is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

HBV means hepatitis B virus.

HIV means human immunodeficiency virus.

Needleless systems means a device that does not use needles for:

(1) The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established;

(2) The administration of medication or fluids; or

(3) Any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

Occupational Exposure means 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.

Other Potentially Infectious Materials means

(1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

(3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

Personal Protective Equipment is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

Production Facility means a facility engaged in industrial-scale, large-volume or high concentration production of HIV or HBV.

Regulated Waste means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

Research Laboratory means a laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

Sharps with engineered sharps injury protections means a nonneedle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

Sterilize means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

1910.1030(c)
Exposure Control -
1910.1030(c)(1)
Exposure Control Plan.
1910.1030(c)(1)(i)
Each employer having an employee(s) with occupational exposure as defined by paragraph (b) of this section shall establish a written Exposure Control Plan designed to eliminate or minimize employee exposure.
1910.1030(c)(1)(ii)
The Exposure Control Plan shall contain at least the following elements:
1910.1030(c)(1)(ii)(A)
The exposure determination required by paragraph (c)(2),
1910.1030(c)(1)(ii)(B)
The schedule and method of implementation for paragraphs (d) Methods of Compliance, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, (g) Communication of Hazards to Employees, and (h) Recordkeeping, of this standard, and
1910.1030(c)(1)(ii)(C)
The procedure for the evaluation of circumstances surrounding exposure incidents as required by paragraph (f)(3)(i) of this standard.
1910.1030(c)(1)(iii)
Each employer shall ensure that a copy of the Exposure Control Plan is accessible to employees in accordance with 29 CFR 1910.20(e).
1910.1030(c)(1)(iv)
The Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure. The review and update of such plans shall also:
1910.1030(c)(1)(iv)(A)
Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and
1910.1030(c)(1)(iv)(B)
Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.
1910.1030(c)(1)(v)
An employer, who is required to establish an Exposure Control Plan shall solicit input from non-managerial employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls and shall document the solicitation in the Exposure Control Plan.
1910.1030(c)(1)(vi)
The Exposure Control Plan shall be made available to the Assistant Secretary and the Director upon request for examination and copying.
1910.1030(c)(2)
Exposure Determination.
1910.1030(c)(2)(i)
Each employer who has an employee(s) with occupational exposure as defined by paragraph (b) of this section shall prepare an exposure determination. This exposure determination shall contain the following:
1910.1030(c)(2)(i)(A)
A list of all job classifications in which all employees in those job classifications have occupational exposure;
1910.1030(c)(2)(i)(B)
A list of job classifications in which some employees have occupational exposure, and
1910.1030(c)(2)(i)(C)
A list of all tasks and procedures or groups of closely related task and procedures in which occupational exposure occurs and that are performed by employees in job classifications listed in accordance with the provisions of paragraph (c)(2)(i)(B) of this standard.
1910.1030(c)(2)(ii)
This exposure determination shall be made without regard to the use of personal protective equipment.
1910.1030(d)
Methods of Compliance -
1910.1030(d)(1)
General. Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.
1910.1030(d)(2)

Engineering and Work Practice Controls.
1910.1030(d)(2)(i)
Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.
1910.1030(d)(2)(ii)
Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.
1910.1030(d)(2)(iii)
Employers shall provide handwashing facilities which are readily accessible to employees.
1910.1030(d)(2)(iv)
When provision of handwashing facilities is not feasible, the employer shall provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.
1910.1030(d)(2)(v)
Employers shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.
1910.1030(d)(2)(vi)
Employers shall ensure that employees wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.
1910.1030(d)(2)(vii)
Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed except as noted in paragraphs (d)(2)(vii)(A) and (d)(2)(vii)(B) below. Shearing or breaking of contaminated needles is prohibited.
1910.1030(d)(2)(vii)(A)
Contaminated needles and other contaminated sharps shall not be bent, recapped or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical or dental procedure.
1910.1030(d)(2)(vii)(B)
Such bending, recapping or needle removal must be accomplished through the use of a mechanical device or a one-handed technique.
1910.1030(d)(2)(viii)
Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be:
1910.1030(d)(2)(viii)(A)
Puncture resistant;
1910.1030(d)(2)(viii)(B)
Labeled or color-coded in accordance with this standard;
1910.1030(d)(2)(viii)(C)
Leakproof on the sides and bottom; and
1910.1030(d)(2)(viii)(D)
In accordance with the requirements set forth in paragraph (d)(4)(ii)(E) for reusable sharps.
1910.1030(d)(2)(ix)
Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.
1910.1030(d)(2)(x)
Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or other potentially infectious materials are present.
1910.1030(d)(2)(xi)
All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.
1910.1030(d)(2)(xii)
Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.
1910.1030(d)(2)(xiii)
Specimens of blood or other potentially infectious materials shall be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping.
1910.1030(d)(2)(xiii)(A)
The container for storage, transport, or shipping shall be labeled or color-coded according to paragraph (g)(1)(i) and closed prior to being stored, transported, or shipped. When a facility utilizes Universal Precautions in the handling of all specimens, the labeling/color-coding of specimens is not necessary provided containers are recognizable as containing specimens. This exemption only applies while such specimens/containers remain within the facility. Labeling or color-coding in accordance with paragraph (g)(1)(i) is required when such specimens/containers leave the facility.
1910.1030(d)(2)(xiii)(B)

If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport, or shipping and is labeled or color-coded according to the requirements of this standard.
1910.1030(d)(2)(xiii)(C)
If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture-resistant in addition to the above characteristics.
1910.1030(d)(2)(xiv)
Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated as necessary, unless the employer can demonstrate that decontamination of such equipment or portions of such equipment is not feasible.
1910.1030(d)(2)(xiv)(A)
A readily observable label in accordance with paragraph (g)(1)(i)(H) shall be attached to the equipment stating which portions remain contaminated.
1910.1030(d)(2)(xiv)(B)
The employer shall ensure that this information is conveyed to all affected employees, the servicing representative, and/or the manufacturer, as appropriate, prior to handling, servicing, or shipping so that appropriate precautions will be taken.
1910.1030(d)(3)
Personal Protective Equipment -
1910.1030(d)(3)(i)
Provision. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered â¿¿appropriateâ¿ • only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.
1910.1030(d)(3)(ii)
Use. The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgement, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurances in the future.
1910.1030(d)(3)(iii)
Accessibility. The employer shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.
1910.1030(d)(3)(iv)
Cleaning, Laundering, and Disposal. The employer shall clean, launder, and dispose of personal protective equipment required by paragraphs (d) and (e) of this standard, at no cost to the employee.
1910.1030(d)(3)(v)
Repair and Replacement. The employer shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.
1910.1030(d)(3)(vi)
If a garment(s) is penetrated by blood or other potentially infectious materials, the garment(s) shall be removed immediately or as soon as feasible.
1910.1030(d)(3)(vii)
All personal protective equipment shall be removed prior to leaving the work area.
1910.1030(d)(3)(viii)
When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.
1910.1030(d)(3)(ix)
Gloves. Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures except as specified in paragraph (d)(3)(ix)(D); and when handling or touching contaminated items or surfaces.
1910.1030(d)(3)(ix)(A)
Disposable (single use) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.
1910.1030(d)(3)(ix)(B)
Disposable (single use) gloves shall not be washed or decontaminated for re-use.
1910.1030(d)(3)(ix)(C)

Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.
1910.1030(d)(3)(ix)(D)
If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary then the employer shall:
1910.1030(d)(3)(ix)(D)(1)
Periodically reevaluate this policy;
1910.1030(d)(3)(ix)(D)(2)
Make gloves available to all employees who wish to use them for phlebotomy;
1910.1030(d)(3)(ix)(D)(3)
Not discourage the use of gloves for phlebotomy; and
1910.1030(d)(3)(ix)(D)(4)
Require that gloves be used for phlebotomy in the following circumstances:
1910.1030(d)(3)(ix)(D)(4)(i)
When the employee has cuts, scratches, or other breaks in his or her skin;
1910.1030(d)(3)(ix)(D)(4)(ii)
When the employee judges that hand contamination with blood may occur, for example, when performing phlebotomy on an uncooperative source individual; and
1910.1030(d)(3)(ix)(D)(4)(iii)
When the employee is receiving training in phlebotomy.
1910.1030(d)(3)(x)
Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.
1910.1030(d)(3)(xi)
Gowns, Aprons, and Other Protective Body Clothing. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.
1910.1030(d)(3)(xii)
Surgical caps or hoods and/or shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated (e.g., autopsies, orthopaedic surgery).
1910.1030(d)(4)
Housekeeping -
1910.1030(d)(4)(i)
General. Employers shall ensure that the worksite is maintained in a clean and sanitary condition. The employer shall 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 cleaned, type of soil present, and tasks or procedures being performed in the area.
1910.1030(d)(4)(ii)
All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.
1910.1030(d)(4)(ii)(A)
Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures; immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and at the end of the work shift if the surface may have become contaminated since the last cleaning.
1910.1030(d)(4)(ii)(B)
Protective coverings, such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper used to cover equipment and environmental surfaces, shall be removed and replaced as soon as feasible when they become overtly contaminated or at the end of the workshift if they may have become contaminated during the shift.
1910.1030(d)(4)(ii)(C)
All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials shall be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.
1910.1030(d)(4)(ii)(D)
Broken glassware which may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means, such as a brush and dust pan, tongs, or forceps.
1910.1030(d)(4)(ii)(E)
Reusable sharps that are contaminated with blood or other potentially infectious materials shall not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed.
1910.1030(d)(4)(iii)

Regulated Waste -
1910.1030(d)(4)(iii)(A)
Contaminated Sharps Discarding and Containment.
1910.1030(d)(4)(iii)(A)(1)
Contaminated sharps shall be discarded immediately or as soon as feasible in containers that are:
1910.1030(d)(4)(iii)(A)(1)(i)
Closable;
1910.1030(d)(4)(iii)(A)(1)(ii)
Puncture resistant;
1910.1030(d)(4)(iii)(A)(1)(iii)
Leakproof on sides and bottom; and
1910.1030(d)(4)(iii)(A)(1)(iv)
Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard.
1910.1030(d)(4)(iii)(A)(2)
During use, containers for contaminated sharps shall be:
1910.1030(d)(4)(iii)(A)(2)(i)
Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found (e.g., laundries);
1910.1030(d)(4)(iii)(A)(2)(ii)
Maintained upright throughout use; and
1910.1030(d)(4)(iii)(A)(2)(iii)
Replaced routinely and not be allowed to overfill.
1910.1030(d)(4)(iii)(A)(3)
When moving containers of contaminated sharps from the area of use, the containers shall be:
1910.1030(d)(4)(iii)(A)(3)(i)
Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;
1910.1030(d)(4)(iii)(A)(3)(ii)
Placed in a secondary container if leakage is possible. The second container shall be:
1910.1030(d)(4)(iii)(A)(3)(ii)(A)
Closable;
1910.1030(d)(4)(iii)(A)(3)(ii)(B)
Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and
1910.1030(d)(4)(iii)(A)(3)(ii)(C)
Labeled or color-coded according to paragraph (g)(1)(i) of this standard.
1910.1030(d)(4)(iii)(A)(4)
Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.
1910.1030(d)(4)(iii)(B)
Other Regulated Waste Containment -
1910.1030(d)(4)(iii)(B)(1)
Regulated waste shall be placed in containers which are:
1910.1030(d)(4)(iii)(B)(1)(i)
Closable;
1910.1030(d)(4)(iii)(B)(1)(ii)
Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;
1910.1030(d)(4)(iii)(B)(1)(iii)
Labeled or color-coded in accordance with paragraph (g)(1)(i) this standard; and
1910.1030(d)(4)(iii)(B)(1)(iv)
Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.
1910.1030(d)(4)(iii)(B)(2)
If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:
1910.1030(d)(4)(iii)(B)(2)(i)
Closable;
1910.1030(d)(4)(iii)(B)(2)(ii)
Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;
1910.1030(d)(4)(iii)(B)(2)(iii)
Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard; and
1910.1030(d)(4)(iii)(B)(2)(iv)

Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.
1910.1030(d)(4)(iii)(C)
Disposal of all regulated waste shall be in accordance with applicable regulations of the United States, States and Territories, and political subdivisions of States and Territories.
1910.1030(d)(4)(iv)
Laundry.
1910.1030(d)(4)(iv)(A)
Contaminated laundry shall be handled as little as possible with a minimum of agitation.
1910.1030(d)(4)(iv)(A)(1)
Contaminated laundry shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use.
1910.1030(d)(4)(iv)(A)(2)
Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard. When a facility utilizes Universal Precautions in the handling of all soiled laundry, alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions.
1910.1030(d)(4)(iv)(A)(3)
Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through of or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.
1910.1030(d)(4)(iv)(B)
The employer shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.
1910.1030(d)(4)(iv)(C)
When a facility ships contaminated laundry off-site to a second facility which does not utilize Universal Precautions in the handling of all laundry, the facility generating the contaminated laundry must place such laundry in bags or containers which are labeled or color-coded in accordance with paragraph (g)(1)(i).
1910.1030(e)
HIV and HBV Research Laboratories and Production Facilities.
1910.1030(e)(1)
This paragraph applies to research laboratories and production facilities engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV. It does not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissues, or organs. These requirements apply in addition to the other requirements of the standard.
1910.1030(e)(2)
Research laboratories and production facilities shall meet the following criteria:
1910.1030(e)(2)(i)
Standard Microbiological Practices. All regulated waste shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.
1910.1030(e)(2)(ii)
Special Practices.
1910.1030(e)(2)(ii)(A)
Laboratory doors shall be kept closed when work involving HIV or HBV is in progress.
1910.1030(e)(2)(ii)(B)
Contaminated materials that are to be decontaminated at a site away from the work area shall be placed in a durable, leakproof, labeled or color-coded container that is closed before being removed from the work area.
1910.1030(e)(2)(ii)(C)
Access to the work area shall be limited to authorized persons. Written policies and procedures shall be established whereby only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work areas and animal rooms.
1910.1030(e)(2)(ii)(D)
When other potentially infectious materials or infected animals are present in the work area or containment module, a hazard warning sign incorporating the universal biohazard symbol shall be posted on all access doors. The hazard warning sign shall comply with paragraph (g)(1)(ii) of this standard.
1910.1030(e)(2)(ii)(E)
All activities involving other potentially infectious materials shall be conducted in biological safety cabinets or other physical-containment devices within the containment module. No work with these other potentially infectious materials shall be conducted on the open bench.
1910.1030(e)(2)(ii)(F)
Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be used in the work area and animal rooms. Protective clothing shall not be worn outside of the work area and shall be decontaminated before being laundered.

1910.1030(e)(2)(ii)(G)
Special care shall be taken to avoid skin contact with other potentially infectious materials. Gloves shall be worn when handling infected animals and when making hand contact with other potentially infectious materials is unavoidable.
1910.1030(e)(2)(ii)(H)
Before disposal all waste from work areas and from animal rooms shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.
1910.1030(e)(2)(ii)(I)
Vacuum lines shall be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters or filters of equivalent or superior efficiency and which are checked routinely and maintained or replaced as necessary.
1910.1030(e)(2)(ii)(J)
Hypodermic needles and syringes shall be used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable syringe-needle units (i.e., the needle is integral to the syringe) shall be used for the injection or aspiration of other potentially infectious materials. Extreme caution shall be used when handling needles and syringes. A needle shall not be bent, sheared, replaced in the sheath or guard, or removed from the syringe following use. The needle and syringe shall be promptly placed in a puncture-resistant container and autoclaved or decontaminated before reuse or disposal.
1910.1030(e)(2)(ii)(K)
All spills shall be immediately contained and cleaned up by appropriate professional staff or others properly trained and equipped to work with potentially concentrated infectious materials.
1910.1030(e)(2)(ii)(L)
A spill or accident that results in an exposure incident shall be immediately reported to the laboratory director or other responsible person.
1910.1030(e)(2)(ii)(M)
A biosafety manual shall be prepared or adopted and periodically reviewed and updated at least annually or more often if necessary. Personnel shall be advised of potential hazards, shall be required to read instructions on practices and procedures, and shall be required to follow them.
1910.1030(e)(2)(iii)
Containment Equipment.
1910.1030(e)(2)(iii)(A)
Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals, shall be used for all activities with other potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.
1910.1030(e)(2)(iii)(B)
Biological safety cabinets shall be certified when installed, whenever they are moved and at least annually.
1910.1030(e)(3)
HIV and HBV research laboratories shall meet the following criteria:
1910.1030(e)(3)(i)
Each laboratory shall contain a facility for hand washing and an eye wash facility which is readily available within the work area.
1910.1030(e)(3)(ii)
An autoclave for decontamination of regulated waste shall be available.
1910.1030(e)(4)
HIV and HBV production facilities shall meet the following criteria:
1910.1030(e)(4)(i)
The work areas shall be separated from areas that are open to unrestricted traffic flow within the building. Passage through two sets of doors shall be the basic requirement for entry into the work area from access corridors or other contiguous areas. Physical separation of the high-containment work area from access corridors or other areas or activities may also be provided by a double-doored clothes-change room (showers may be included), airlock, or other access facility that requires passing through two sets of doors before entering the work area.
1910.1030(e)(4)(ii)
The surfaces of doors, walls, floors and ceilings in the work area shall be water resistant so that they can be easily cleaned. Penetrations in these surfaces shall be sealed or capable of being sealed to facilitate decontamination.
1910.1030(e)(4)(iii)
Each work area shall contain a sink for washing hands and a readily available eye wash facility. The sink shall be foot, elbow, or automatically operated and shall be located near the exit door of the work area.
1910.1030(e)(4)(iv)
Access doors to the work area or containment module shall be self-closing.
1910.1030(e)(4)(v)
An autoclave for decontamination of regulated waste shall be available within or as near as possible to the work area.

1910.1030(e)(4)(vi)
A ducted exhaust-air ventilation system shall be provided. This system shall create directional airflow that draws air into the work area through the entry area. The exhaust air shall not be recirculated to any other area of the building, shall be discharged to the outside, and shall be dispersed away from occupied areas and air intakes. The proper direction of the airflow shall be verified (i.e., into the work area).
1910.1030(e)(5)
Training Requirements. Additional training requirements for employees in HIV and HBV research laboratories and HIV and HBV production facilities are specified in paragraph (g)(2)(ix).
1910.1030(f)
Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up -
1910.1030(f)(1)
General.
1910.1030(f)(1)(i)
The employer shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident.
1910.1030(f)(1)(ii)
The employer shall ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow-up, including prophylaxis, are:
1910.1030(f)(1)(ii)(A)
Made available at no cost to the employee;
1910.1030(f)(1)(ii)(B)
Made available to the employee at a reasonable time and place;
1910.1030(f)(1)(ii)(C)
Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and
1910.1030(f)(1)(ii)(D)
Provided according to recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place, except as specified by this paragraph (f).
1910.1030(f)(1)(iii)
The employer shall ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.
1910.1030(f)(2)
Hepatitis B Vaccination.
1910.1030(f)(2)(i)
Hepatitis B vaccination shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.
1910.1030(f)(2)(ii)
The employer shall not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination.
1910.1030(f)(2)(iii)
If the employee initially declines hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the employer shall make available hepatitis B vaccination at that time.
1910.1030(f)(2)(iv)
The employer shall assure that employees who decline to accept hepatitis B vaccination offered by the employer sign the statement in appendix A.
1910.1030(f)(2)(v)
If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) shall be made available in accordance with section (f)(1)(ii).
1910.1030(f)(3)
Post-exposure Evaluation and Follow-up. Following a report of an exposure incident, the employer shall make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:
1910.1030(f)(3)(i)
Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;
1910.1030(f)(3)(ii)
Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law;
1910.1030(f)(3)(ii)(A)
The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When

the source individual's consent is not required by law, the source individual's blood, if available, shall be tested and the results documented.
1910.1030(f)(3)(ii)(B)
When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.
1910.1030(f)(3)(ii)(C)
Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.
1910.1030(f)(3)(iii)
Collection and testing of blood for HBV and HIV serological status;
1910.1030(f)(3)(iii)(A)
The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.
1910.1030(f)(3)(iii)(B)
If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.
1910.1030(f)(3)(iv)
Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service;
1910.1030(f)(3)(v)
Counseling; and
1910.1030(f)(3)(vi)
Evaluation of reported illnesses.
1910.1030(f)(4)
Information Provided to the Healthcare Professional.
1910.1030(f)(4)(i)
The employer shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation.
1910.1030(f)(4)(ii)
The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:
1910.1030(f)(4)(ii)(A)
A copy of this regulation;
1910.1030(f)(4)(ii)(B)
A description of the exposed employee's duties as they relate to the exposure incident;
1910.1030(f)(4)(ii)(C)
Documentation of the route(s) of exposure and circumstances under which exposure occurred;
1910.1030(f)(4)(ii)(D)
Results of the source individual's blood testing, if available; and
1910.1030(f)(4)(ii)(E)
All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.
1910.1030(f)(5)
Healthcare Professional's Written Opinion. The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.
1910.1030(f)(5)(i)
The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.
1910.1030(f)(5)(ii)
The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:
1910.1030(f)(5)(ii)(A)
That the employee has been informed of the results of the evaluation; and
1910.1030(f)(5)(ii)(B)
That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.
1910.1030(f)(5)(iii)
All other findings or diagnoses shall remain confidential and shall not be included in the written report.
1910.1030(f)(6)
Medical Recordkeeping. Medical records required by this standard shall be maintained in accordance with paragraph (h)(1) of this section.

1910.1030(g)
Communication of Hazards to Employees -
1910.1030(g)(1)
Labels and Signs -
1910.1030(g)(1)(i)
Labels.
1910.1030(g)(1)(i)(A)
Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials, except as provided in paragraph (g)(1)(i)(E), (F) and (G).
1910.1030(g)(1)(i)(B)
Labels required by this section shall include the following legend:

**BIOHAZARD**

1910.1030(g)(1)(i)(C)
These labels shall be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color.
1910.1030(g)(1)(i)(D)
Labels shall be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.
1910.1030(g)(1)(i)(E)
Red bags or red containers may be substituted for labels.
1910.1030(g)(1)(i)(F)
Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use are exempted from the labeling requirements of paragraph (g).
1910.1030(g)(1)(i)(G)
Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement.
1910.1030(g)(1)(i)(H)
Labels required for contaminated equipment shall be in accordance with this paragraph and shall also state which portions of the equipment remain contaminated.
1910.1030(g)(1)(i)(I)
Regulated waste that has been decontaminated need not be labeled or color-coded.
1910.1030(g)(1)(ii)
Signs.
1910.1030(g)(1)(ii)(A)
The employer shall post signs at the entrance to work areas specified in paragraph (e), HIV and HBV Research Laboratory and Production Facilities, which shall bear the following legend:

**BIOHAZARD**

(Name of the Infectious Agent)
(Special requirements for entering the area)
(Name, telephone number of the laboratory director or other responsible person.)
1910.1030(g)(1)(ii)(B)
These signs shall be fluorescent orange-red or predominantly so, with lettering and symbols in a contrasting color.
1910.1030(g)(2)
Information and Training.
1910.1030(g)(2)(i)
The employer shall train each employee with occupational exposure in accordance with the requirements of this section. Such training must be provided at no cost to the employee and during working hours. The employer shall institute a training program and ensure employee participation in the program.
1910.1030(g)(2)(ii)
Training shall be provided as follows:
1910.1030(g)(2)(ii)(A)
At the time of initial assignment to tasks where occupational exposure may take place;
1910.1030(g)(2)(ii)(B)
At least annually thereafter.
1910.1030(g)(2)(iii)
[Reserved]
1910.1030(g)(2)(iv)
Annual training for all employees shall be provided within one year of their previous training.
1910.1030(g)(2)(v)
Employers shall provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.
1910.1030(g)(2)(vi)
Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.
1910.1030(g)(2)(vii)
The training program shall contain at a minimum the following elements:
1910.1030(g)(2)(vii)(A)
An accessible copy of the regulatory text of this standard and an explanation of its contents;
1910.1030(g)(2)(vii)(B)
A general explanation of the epidemiology and symptoms of bloodborne diseases;
1910.1030(g)(2)(vii)(C)
An explanation of the modes of transmission of bloodborne pathogens;
1910.1030(g)(2)(vii)(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;
1910.1030(g)(2)(vii)(E)
An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
1910.1030(g)(2)(vii)(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;
1910.1030(g)(2)(vii)(G)

Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment;
1910.1030(g)(2)(vii)(H)
An explanation of the basis for selection of personal protective equipment;
1910.1030(g)(2)(vii)(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;
1910.1030(g)(2)(vii)(J)
Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;
1910.1030(g)(2)(vii)(K)
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;
1910.1030(g)(2)(vii)(L)
Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;
1910.1030(g)(2)(vii)(M)
An explanation of the signs and labels and/or color coding required by paragraph (g)(1); and
1910.1030(g)(2)(vii)(N)
An opportunity for interactive questions and answers with the person conducting the training session.
1910.1030(g)(2)(viii)
The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address.
1910.1030(g)(2)(ix)
Additional Initial Training for Employees in HIV and HBV Laboratories and Production Facilities. Employees in HIV or HBV research laboratories and HIV or HBV production facilities shall receive the following initial training in addition to the above training requirements.
1910.1030(g)(2)(ix)(A)
The employer shall assure that employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV or HBV.
1910.1030(g)(2)(ix)(B)
The employer shall assure that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.
1910.1030(g)(2)(ix)(C)
The employer shall provide a training program to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. The employer shall assure that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.
1910.1030(h)
Recordkeeping -
1910.1030(h)(1)
Medical Records.
1910.1030(h)(1)(i)
The employer shall establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.1020.
1910.1030(h)(1)(ii)
This record shall include:
1910.1030(h)(1)(ii)(A)
The name and social security number of the employee;
1910.1030(h)(1)(ii)(B)
A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination as required by paragraph (f)(2);
1910.1030(h)(1)(ii)(C)
A copy of all results of examinations, medical testing, and follow-up procedures as required by paragraph (f)(3);
1910.1030(h)(1)(ii)(D)
The employer's copy of the healthcare professional's written opinion as required by paragraph (f)(5); and
1910.1030(h)(1)(ii)(E)
A copy of the information provided to the healthcare professional as required by paragraphs (f)(4)(ii)(B)(C) and (D).
1910.1030(h)(1)(iii)
Confidentiality. The employer shall ensure that employee medical records required by paragraph (h)(1) are:

1910.1030(h)(1)(iii)(A)
Kept confidential; and
1910.1030(h)(1)(iii)(B)
Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.
1910.1030(h)(1)(iv)
The employer shall maintain the records required by paragraph (h) for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.1020.
1910.1030(h)(2)
Training Records.
1910.1030(h)(2)(i)
Training records shall include the following information:
1910.1030(h)(2)(i)(A)
The dates of the training sessions;
1910.1030(h)(2)(i)(B)
The contents or a summary of the training sessions;
1910.1030(h)(2)(i)(C)
The names and qualifications of persons conducting the training; and
1910.1030(h)(2)(i)(D)
The names and job titles of all persons attending the training sessions.
1910.1030(h)(2)(ii)
Training records shall be maintained for 3 years from the date on which the training occurred.
1910.1030(h)(3)
Availability.
1910.1030(h)(3)(i)
The employer shall ensure that all records required to be maintained by this section shall be made available upon request to the Assistant Secretary and the Director for examination and copying.
1910.1030(h)(3)(ii)
Employee training records required by this paragraph shall be provided upon request for examination and copying to employees, to employee representatives, to the Director, and to the Assistant Secretary.
1910.1030(h)(3)(iii)
Employee medical records required by this paragraph shall be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, to the Director, and to the Assistant Secretary in accordance with 29 CFR 1910.1020.
1910.1030(h)(4)
Transfer of Records. The employer shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h).
1910.1030(h)(5)
Sharps injury log.
1910.1030(h)(5)(i)
he employer shall establish and maintain a sharps injury log for the recording of percutaneous injuries from contaminated sharps. The information in the sharps injury log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The sharps injury log shall contain, at a minimum:
1910.1030(h)(5)(i)(A)
The type and brand of device involved in the incident,
1910.1030(h)(5)(i)(B)
The department or work area where the exposure incident occurred, and
1910.1030(h)(5)(i)(C)
An explanation of how the incident occurred.
1910.1030(h)(5)(ii)
The requirement to establish and maintain a sharps injury log shall apply to any employer who is required to maintain a log of occupational injuries and illnesses under 29 CFR part 1904.
1910.1030(h)(5)(iii)
The sharps injury log shall be maintained for the period required by 29 CFR 1904.33.
1910.1030(i)
Dates -
1910.1030(i)(1)
Effective Date. The standard shall become effective on March 6, 1992.
1910.1030(i)(2)
The Exposure Control Plan required by paragraph (c) of this section shall be completed on or before May 5, 1992.

1910.1030(i)(3)
Paragraphs (g)(2) Information and Training and (h) Recordkeeping of this section shall take effect on or before June 4, 1992.
1910.1030(i)(4)
Paragraphs (d)(2) Engineering and Work Practice Controls, (d)(3) Personal Protective Equipment, (d)(4) Housekeeping, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, and (g)(1) Labels and Signs of this section, shall take effect July 6, 1992.
[56 FR 64004, Dec. 06, 1991, as amended at 57 FR 12717, April 13, 1992; 57 FR 29206, July 1, 1992; 61 FR 5507, Feb. 13, 1996; 66 FR 5325 Jan., 18, 2001; 71 FR 16672 and 16673, April 3, 2006; 73 FR 75586, Dec. 12, 2008; 76 FR 33608, June 8, 2011; 76 FR 80740, Dec. 27, 2011; 77 FR 19934, April 3, 2012]

- Part Number: 1910
- Part Title: Occupational Safety and Health Standards
- Subpart: Z
- Subpart Title: Toxic and Hazardous Substances
- Standard Number: 1910.1026
- Title: Chromium (VI)
- Appendix: A
- GPO Source: e-CFR

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1910.1026(a)
Scope.
1910.1026(a)(1)
This standard applies to occupational exposures to chromium (VI) in all forms and compounds in general industry, except:
1910.1026(a)(2)
Exposures that occur in the application of pesticides regulated by the Environmental Protection Agency or another Federal government agency (e.g., the treatment of wood with preservatives);
1910.1026(a)(3)
Exposures to portland cement; or
1910.1026(a)(4)
Where the employer has objective data demonstrating that a material containing chromium or a specific process, operation, or activity involving chromium cannot release dusts, fumes, or mists of chromium (VI) in concentrations at or above 0.5 µg/m3 as an 8-hour time-weighted average (TWA) under any expected conditions of use.
1910.1026(b)
Definitions. For the purposes of this section the following definitions apply:

Action level means a concentration of airborne chromium (VI) of 2.5 micrograms per cubic meter of air (2.5 µg/m3) calculated as an 8-hour time-weighted average (TWA).

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Chromium (VI) [hexavalent chromium or Cr(VI)] means chromium with a valence of positive six, in any form and in any compound.

Director means the Director of the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee.

Emergency means any occurrence that results, or is likely to result, in an uncontrolled release of chromium (VI). If an incidental release of chromium (VI) can be controlled at the time of release by employees in the immediate release area, or by maintenance personnel, it is not an emergency.

Employee exposure means the exposure to airborne chromium (VI) that would occur if the employee were not using a respirator.

High-efficiency particulate air [HEPA] filter means a filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter or larger.

Historical monitoring data means data from chromium (VI) monitoring conducted prior to May 30, 2006, obtained during work operations conducted under workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Objective data means information such as air monitoring data from industry-wide surveys or calculations based on the composition or chemical and physical properties of a substance demonstrating the employee exposure to chromium (VI) associated with a particular product or material or a specific process, operation, or activity. The data must reflect workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Physician or other licensed health care professional [PLHCP] is an individual whose legally permitted scope of practice (i.e.,

license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the particular health care services required by paragraph (k) of this section.

Regulated area means an area, demarcated by the employer, where an employee's exposure to airborne concentrations of chromium (VI) exceeds, or can reasonably be expected to exceed, the PEL.

This section means this § 1910.1026 chromium (VI) standard.
1910.1026(c)
Permissible exposure limit (PEL). The employer shall ensure that no employee is exposed to an airborne concentration of chromium (VI) in excess of 5 micrograms per cubic meter of air (5 μg/m3), calculated as an 8-hour time-weighted average (TWA).
1910.1026(d)
Exposure determination.
1910.1026(d)(1)
General. Each employer who has a workplace or work operation covered by this section shall determine the 8-hour TWA exposure for each employee exposed to chromium (VI). This determination shall be made in accordance with either paragraph (d)(2) or paragraph (d)(3) of this section.
1910.1026(d)(2)
Scheduled monitoring option.
1910.1026(d)(2)(i)
The employer shall perform initial monitoring to determine the 8-hour TWA exposure for each employee on the basis of a sufficient number of personal breathing zone air samples to accurately characterize full shift exposure on each shift, for each job classification, in each work area. Where an employer does representative sampling instead of sampling all employees in order to meet this requirement, the employer shall sample the employee(s) expected to have the highest chromium (VI) exposures.
1910.1026(d)(2)(ii)
If initial monitoring indicates that employee exposures are below the action level, the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring.
1910.1026(d)(2)(iii)
If monitoring reveals employee exposures to be at or above the action level, the employer shall perform periodic monitoring at least every six months.
1910.1026(d)(2)(iv)
If monitoring reveals employee exposures to be above the PEL, the employer shall perform periodic monitoring at least every three months.
1910.1026(d)(2)(v)
If periodic monitoring indicates that employee exposures are below the action level, and the result is confirmed by the result of another monitoring taken at least seven days later, the employer may discontinue the monitoring for those employees whose exposures are represented by such monitoring.
1910.1026(d)(2)(vi)
The employer shall perform additional monitoring when there has been any change in the production process, raw materials, equipment, personnel, work practices, or control methods that may result in new or additional exposures to chromium (VI), or when the employer has any reason to believe that new or additional exposures have occurred.
1910.1026(d)(3)
Performance-oriented option. The employer shall determine the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data, historical monitoring data, or objective data sufficient to accurately characterize employee exposure to chromium (VI).
1910.1026(d)(4)
Employee notification of determination results.
1910.1026(d)(4)(i)
Within 15 work days after making an exposure determination in accordance with paragraph (d)(2) or paragraph (d)(3) of this section, the employer shall individually notify each affected employee in writing of the results of that determination or post the results in an appropriate location accessible to all affected employees.
1910.1026(d)(4)(ii)
Whenever the exposure determination indicates that employee exposure is above the PEL, the employer shall describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL.
1910.1026(d)(5)
Accuracy of measurement. Where air monitoring is performed to comply with the requirements of this section, the employer shall use a method of monitoring and analysis that can measure chromium (VI) to within an accuracy of plus or minus 25 percent (+/- 25%) and can produce accurate measurements to within a statistical confidence level of 95 percent for airborne concentrations at or above the action level.

1910.1026(d)(6)
Observation of monitoring.
1910.1026(d)(6)(i)
Where air monitoring is performed to comply with the requirements of this section, the employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to chromium (VI).
1910.1026(d)(6)(ii)
When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer with clothing and equipment and shall assure that the observer uses such clothing and equipment and complies with all other applicable safety and health procedures.
1910.1026(e)
Regulated areas.
1910.1026(e)(1)
Establishment. The employer shall establish a regulated area wherever an employee's exposure to airborne concentrations of chromium (VI) is, or can reasonably be expected to be, in excess of the PEL.
1910.1026(e)(2)
Demarcation. The employer shall ensure that regulated areas are demarcated from the rest of the workplace in a manner that adequately establishes and alerts employees of the boundaries of the regulated area.
1910.1026(e)(3)
Access. The employer shall limit access to regulated areas to:
1910.1026(e)(3)(i)
Persons authorized by the employer and required by work duties to be present in the regulated area;
1910.1026(e)(3)(ii)
Any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring procedures under paragraph (d) of this section; or
1910.1026(e)(3)(iii)
Any person authorized by the Occupational Safety and Health Act or regulations issued under it to be in a regulated area.
1910.1026(f)
Methods of compliance.
1910.1026(f)(1)
Engineering and work practice controls.
1910.1026(f)(1)(i)
Except as permitted in paragraph (f)(1)(ii) and paragraph (f)(1)(iii) of this section, the employer shall use engineering and work practice controls to reduce and maintain employee exposure to chromium (VI) to or below the PEL unless the employer can demonstrate that such controls are not feasible. Wherever feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the employer shall use them to reduce employee exposure to the lowest levels achievable, and shall supplement them by the use of respiratory protection that complies with the requirements of paragraph (g) of this section.
1910.1026(f)(1)(ii)
Where painting of aircraft or large aircraft parts is performed in the aerospace industry, the employer shall use engineering and work practice controls to reduce and maintain employee exposure to chromium (VI) to or below 25 µg/m3 unless the employer can demonstrate that such controls are not feasible. The employer shall supplement such engineering and work practice controls with the use of respiratory protection that complies with the requirements of paragraph (g) of this section to achieve the PEL.
1910.1026(f)(1)(iii)
Where the employer can demonstrate that a process or task does not result in any employee exposure to chromium (VI) above the PEL for 30 or more days per year (12 consecutive months), the requirement to implement engineering and work practice controls to achieve the PEL does not apply to that process or task.
1910.1026(f)(2)
Prohibition of rotation. The employer shall not rotate employees to different jobs to achieve compliance with the PEL.
1910.1026(g)
Respiratory protection.
1910.1026(g)(1)
General. Where respiratory protection is required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this paragraph. Respiratory protection is required during:
1910.1026(g)(1)(i)
Periods necessary to install or implement feasible engineering and work practice controls;
1910.1026(g)(1)(ii)
Work operations, such as maintenance and repair activities, for which engineering and work practice controls are not feasible;
1910.1026(g)(1)(iii)

Work operations for which an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL;
1910.1026(g)(1)(iv)
Work operations where employees are exposed above the PEL for fewer than 30 days per year, and the employer has elected not to implement engineering and work practice controls to achieve the PEL; or
1910.1026(g)(1)(v)
Emergencies.
1910.1026(g)(2)
Respiratory protection program. Where respirator use is required by this section, the employer shall institute a respiratory protection program in accordance with § 1910.134, which covers each employee required to use a respirator.
1910.1026(h)
Protective work clothing and equipment.
1910.1026(h)(1)
Provision and use. Where a hazard is present or is likely to be present from skin or eye contact with chromium (VI), the employer shall provide appropriate personal protective clothing and equipment at no cost to employees, and shall ensure that employees use such clothing and equipment.
1910.1026(h)(2)
Removal and storage.
1910.1026(h)(2)(i)
The employer shall ensure that employees remove all protective clothing and equipment contaminated with chromium (VI) at the end of the work shift or at the completion of their tasks involving chromium (VI) exposure, whichever comes first.
1910.1026(h)(2)(ii)
The employer shall ensure that no employee removes chromium (VI)-contaminated protective clothing or equipment from the workplace, except for those employees whose job it is to launder, clean, maintain, or dispose of such clothing or equipment.
1910.1026(h)(2)(iii)
When contaminated protective clothing or equipment is removed for laundering, cleaning, maintenance, or disposal, the employer shall ensure that it is stored and transported in sealed, impermeable bags or other closed, impermeable containers.
1910.1026(h)(2)(iv)
The employer shall ensure that bags or containers of contaminated protective clothing or equipment that are removed from change rooms for laundering, cleaning, maintenance, or disposal are labeled in accordance with the requirements of the Hazard Communication Standard, § 1910.1200.
1910.1026(h)(3)
Cleaning and replacement.
1910.1026(h)(3)(i)
The employer shall clean, launder, repair and replace all protective clothing and equipment required by this section as needed to maintain its effectiveness.
1910.1026(h)(3)(ii)
The employer shall prohibit the removal of chromium (VI) from protective clothing and equipment by blowing, shaking, or any other means that disperses chromium (VI) into the air or onto an employee's body.
1910.1026(h)(3)(iii)
The employer shall inform any person who launders or cleans protective clothing or equipment contaminated with chromium (VI) of the potentially harmful effects of exposure to chromium (VI) and that the clothing and equipment should be laundered or cleaned in a manner that minimizes skin or eye contact with chromium (VI) and effectively prevents the release of airborne chromium (VI) in excess of the PEL.
1910.1026(i)
Hygiene areas and practices.
1910.1026(i)(1)
General. Where protective clothing and equipment is required, the employer shall provide change rooms in conformance with 29 CFR 1910.141. Where skin contact with chromium (VI) occurs, the employer shall provide washing facilities in conformance with 29 CFR 1910.141. Eating and drinking areas provided by the employer shall also be in conformance with § 1910.141.
1910.1026(i)(2)
Change rooms. The employer shall assure that change rooms are equipped with separate storage facilities for protective clothing and equipment and for street clothes, and that these facilities prevent cross-contamination.
1910.1026(i)(3)
Washing facilities.
1910.1026(i)(3)(i)
The employer shall provide readily accessible washing facilities capable of removing chromium (VI) from the skin, and shall ensure that affected employees use these facilities when necessary.
1910.1026(i)(3)(ii)

The employer shall ensure that employees who have skin contact with chromium (VI) wash their hands and faces at the end of the work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet.
1910.1026(i)(4)
Eating and drinking areas.
1910.1026(i)(4)(i)
Whenever the employer allows employees to consume food or beverages at a worksite where chromium (VI) is present, the employer shall ensure that eating and drinking areas and surfaces are maintained as free as practicable of chromium (VI).
1910.1026(i)(4)(ii)
The employer shall ensure that employees do not enter eating and drinking areas with protective work clothing or equipment unless surface chromium (VI) has been removed from the clothing and equipment by methods that do not disperse chromium (VI) into the air or onto an employee's body.
1910.1026(i)(5)
Prohibited activities. The employer shall ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas, or in areas where skin or eye contact with chromium (VI) occurs; or carry the products associated with these activities, or store such products in these areas.
1910.1026(j)
Housekeeping.
1910.1026(j)(1)
General. The employer shall ensure that:
1910.1026(j)(1)(i)
All surfaces are maintained as free as practicable of accumulations of chromium (VI).
1910.1026(j)(1)(ii)
All spills and releases of chromium (VI) containing material are cleaned up promptly.
1910.1026(j)(2)
Cleaning methods.
1910.1026(j)(2)(i)
The employer shall ensure that surfaces contaminated with chromium (VI) are cleaned by HEPA-filter vacuuming or other methods that minimize the likelihood of exposure to chromium (VI).
1910.1026(j)(2)(ii)
Dry shoveling, dry sweeping, and dry brushing may be used only where HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure to chromium (VI) have been tried and found not to be effective.
1910.1026(j)(2)(iii)
The employer shall not allow compressed air to be used to remove chromium (VI) from any surface unless:
1910.1026(j)(2)(iii)(A)
The compressed air is used in conjunction with a ventilation system designed to capture the dust cloud created by the compressed air; or
1910.1026(j)(2)(iii)(B)
No alternative method is feasible.
1910.1026(j)(2)(iv)
The employer shall ensure that cleaning equipment is handled in a manner that minimizes the reentry of chromium (VI) into the workplace.
1910.1026(j)(3)
Disposal. The employer shall ensure that:
1910.1026(j)(3)(i)
Waste, scrap, debris, and any other materials contaminated with chromium (VI) and consigned for disposal are collected and disposed of in sealed, impermeable bags or other closed, impermeable containers.
1910.1026(j)(3)(ii)
Bags or containers of waste, scrap, debris, and any other materials contaminated with chromium (VI) that are consigned for disposal are labeled in accordance with the requirements of the Hazard Communication Standard, 29 CFR 1910.1200.
1910.1026(k)
Medical surveillance.
1910.1026(k)(1)
General.
1910.1026(k)(1)(i)
The employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for all employees:
1910.1026(k)(1)(i)(A)
Who are or may be occupationally exposed to chromium (VI) at or above the action level for 30 or more days a year;
1910.1026(k)(1)(i)(B)
Experiencing signs or symptoms of the adverse health effects associated with chromium (VI) exposure; or

1910.1026(k)(1)(i)(C)
Exposed in an emergency.
1910.1026(k)(1)(ii)
The employer shall assure that all medical examinations and procedures required by this section are performed by or under the supervision of a PLHCP.
1910.1026(k)(2)
Frequency. The employer shall provide a medical examination:
1910.1026(k)(2)(i)
Within 30 days after initial assignment, unless the employee has received a chromium (VI) related medical examination that meets the requirements of this paragraph within the last twelve months;
1910.1026(k)(2)(ii)
Annually;
1910.1026(k)(2)(iii)
Within 30 days after a PLHCP's written medical opinion recommends an additional examination;
1910.1026(k)(2)(iv)
Whenever an employee shows signs or symptoms of the adverse health effects associated with chromium (VI) exposure;
1910.1026(k)(2)(v)
Within 30 days after exposure during an emergency which results in an uncontrolled release of chromium (VI); or
1910.1026(k)(2)(vi)
At the termination of employment, unless the last examination that satisfied the requirements of paragraph (k) of this section was less than six months prior to the date of termination.
1910.1026(k)(3)
Contents of examination. A medical examination consists of:
1910.1026(k)(3)(i)
A medical and work history, with emphasis on: Past, present, and anticipated future exposure to chromium (VI); any history of respiratory system dysfunction; any history of asthma, dermatitis, skin ulceration, or nasal septum perforation; and smoking status and history;
1910.1026(k)(3)(ii)
A physical examination of the skin and respiratory tract; and
1910.1026(k)(3)(iii)
Any additional tests deemed appropriate by the examining PLHCP.
1910.1026(k)(4)
Information provided to the PLHCP. The employer shall ensure that the examining PLHCP has a copy of this standard, and shall provide the following information:
1910.1026(k)(4)(i)
A description of the affected employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to chromium (VI);
1910.1026(k)(4)(ii)
The employee's former, current, and anticipated levels of occupational exposure to chromium (VI);
1910.1026(k)(4)(iii)
A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used that equipment; and
1910.1026(k)(4)(iv)
Information from records of employment-related medical examinations previously provided to the affected employee, currently within the control of the employer.
1910.1026(k)(5)
PLHCP's written medical opinion.
1910.1026(k)(5)(i)
The employer shall obtain a written medical opinion from the PLHCP, within 30 days for each medical examination performed on each employee, which contains:
1910.1026(k)(5)(i)(A)
The PLHCP's opinion as to whether the employee has any detected medical condition(s) that would place the employee at increased risk of material impairment to health from further exposure to chromium (VI);
1910.1026(k)(5)(i)(B)
Any recommended limitations upon the employee's exposure to chromium (VI) or upon the use of personal protective equipment such as respirators;
1910.1026(k)(5)(i)(C)
A statement that the PLHCP has explained to the employee the results of the medical examination, including any medical conditions related to chromium (VI) exposure that require further evaluation or treatment, and any special provisions for use of protective clothing or equipment.

1910.1026(k)(5)(ii)
The PLHCP shall not reveal to the employer specific findings or diagnoses unrelated to occupational exposure to chromium (VI).
1910.1026(k)(5)(iii)
The employer shall provide a copy of the PLHCP's written medical opinion to the examined employee within two weeks after receiving it.
1910.1026(l)
Communication of chromium (VI) hazards to employees.
1910.1026(l)(1)
Hazard communication§general
1910.1026(l)(1)(i)
Chemical manufacturers, importers, distributors and employers shall comply with all requirements of the Hazard Communication Standard (HCS) (§ 1910.1200) for chromium (VI).
1910.1026(l)(1)(ii)
In classifying the hazards of chromium (VI) at least the following hazards are to be addressed: Cancer, eye irritation, and skin sensitization.
1910.1026(l)(1)(iii)
Employers shall include chromium (VI) in the hazard communication program established to comply with the HCS (§ 1910.1200). Employers shall ensure that each employee has access to labels on containers of chromium (VI) and to safety data sheets, and is trained in accordance with the requirements of HCS and paragraph (l)(2) of this section.
1910.1026(l)(2)
Employee information and training.
1910.1026(l)(2)(i)
The employer shall ensure that each employee can demonstrate knowledge of at least the following:
1910.1026(l)(2)(i)(A)
The contents of this section; and
1910.1026(l)(2)(i)(B)
The purpose and a description of the medical surveillance program required by paragraph (k) of this section.
1910.1026(l)(2)(ii)
The employer shall make a copy of this section readily available without cost to all affected employees.
1910.1026(m)
Recordkeeping.
1910.1026(m)(1)
Air monitoring data.
1910.1026(m)(1)(i)
The employer shall maintain an accurate record of all air monitoring conducted to comply with the requirements of this section.
1910.1026(m)(1)(ii)
This record shall include at least the following information:
1910.1026(m)(1)(ii)(A)
The date of measurement for each sample taken;
1910.1026(m)(1)(ii)(B)
The operation involving exposure to chromium (VI) that is being monitored;
1910.1026(m)(1)(ii)(C)
Sampling and analytical methods used and evidence of their accuracy;
1910.1026(m)(1)(ii)(D)
Number, duration, and the results of samples taken;
1910.1026(m)(1)(ii)(E)
Type of personal protective equipment, such as respirators worn; and
1910.1026(m)(1)(ii)(F)
Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.
1910.1026(m)(1)(iii)
The employer shall ensure that exposure records are maintained and made available in accordance with 29 CFR 1910.1020.
1910.1026(m)(2)
Historical monitoring data.
1910.1026(m)(2)(i)
Where the employer has relied on historical monitoring data to determine exposure to chromium (VI), the employer shall establish and maintain an accurate record of the historical monitoring data relied upon.
1910.1026(m)(2)(ii)
The record shall include information that reflects the following conditions:

1910.1026(m)(2)(ii)(A)
The data were collected using methods that meet the accuracy requirements of paragraph (d)(5) of this section;
1910.1026(m)(2)(ii)(B)
The processes and work practices that were in use when the historical monitoring data were obtained are essentially the same as those to be used during the job for which exposure is being determined;
1910.1026(m)(2)(ii)(C)
The characteristics of the chromium (VI) containing material being handled when the historical monitoring data were obtained are the same as those on the job for which exposure is being determined;
1910.1026(m)(2)(ii)(D)
Environmental conditions prevailing when the historical monitoring data were obtained are the same as those on the job for which exposure is being determined; and
1910.1026(m)(2)(ii)(E)
Other data relevant to the operations, materials, processing, or employee exposures covered by the exception.
1910.1026(m)(2)(iii)
The employer shall ensure that historical exposure records are maintained and made available in accordance with 29 CFR 1910.1020.
1910.1026(m)(3)
Objective data.
1910.1026(m)(3)(i)
The employer shall maintain an accurate record of all objective data relied upon to comply with the requirements of this section.
1910.1026(m)(3)(ii)
This record shall include at least the following information:
1910.1026(m)(3)(ii)(A)
The chromium containing material in question;
1910.1026(m)(3)(ii)(B)
The source of the objective data;
1910.1026(m)(3)(ii)(C)
The testing protocol and results of testing, or analysis of the material for the release of chromium (VI);
1910.1026(m)(3)(ii)(D)
A description of the process, operation, or activity and how the data support the determination; and
1910.1026(m)(3)(ii)(E)
Other data relevant to the process, operation, activity, material, or employee exposures.
1910.1026(m)(3)(iii)
The employer shall ensure that objective data are maintained and made available in accordance with 29 CFR 1910.1020.
1910.1026(m)(4)
Medical surveillance.
1910.1026(m)(4)(i)
The employer shall establish and maintain an accurate record for each employee covered by medical surveillance under paragraph (k) of this section.
1910.1026(m)(4)(ii)
The record shall include the following information about the employee:
1910.1026(m)(4)(ii)(A)
Name and social security number;
1910.1026(m)(4)(ii)(B)
A copy of the PLHCP's written opinions;
1910.1026(m)(4)(ii)(C)
A copy of the information provided to the PLHCP as required by paragraph (k)(4) of this section.
1910.1026(m)(4)(iii)
The employer shall ensure that medical records are maintained and made available in accordance with 29 CFR 1910.1020.
1910.1026(n)
Dates.
1910.1026(n)(1)
For employers with 20 or more employees, all obligations of this section, except engineering controls required by paragraph (f) of this section, commence November 27, 2006.
1910.1026(n)(2)
For employers with 19 or fewer employees, all obligations of this section, except engineering controls required by paragraph (f) of this section, commence May 30, 2007.
1910.1026(n)(3)

Except as provided in (n)(4), for all employers, engineering controls required by paragraph (f) of this section shall be implemented no later than May 31, 2010.

1910.1026(n)(4)

In facilities that become parties to the settlement agreement included in Appendix A, engineering controls required by paragraph (f) of this section shall be implemented no later than December 31, 2008.

[71 FR 10374, Feb. 28, 2006; 71 FR 63242, Oct. 30, 2006; 73 FR 75585, Dec. 12, 2008; 75 FR 12686, March, 17, 2010; 77 FR 17781, March 26, 2012]

- Part Number: 1910
- Part Title: Occupational Safety and Health Standards
- Subpart: G
- Subpart Title: Occupational Health and Environmental Control
- Standard Number: 1910.95
- Title: Occupational noise exposure.
- Appendix: A, B, C, D, E, F, G, H, I
- GPO Source: e-CFR

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1910.95(a)

Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in Table G-16 when measured on the A scale of a standard sound level meter at slow response. When noise levels are determined by octave band analysis, the equivalent A-weighted sound level may be determined as follows:

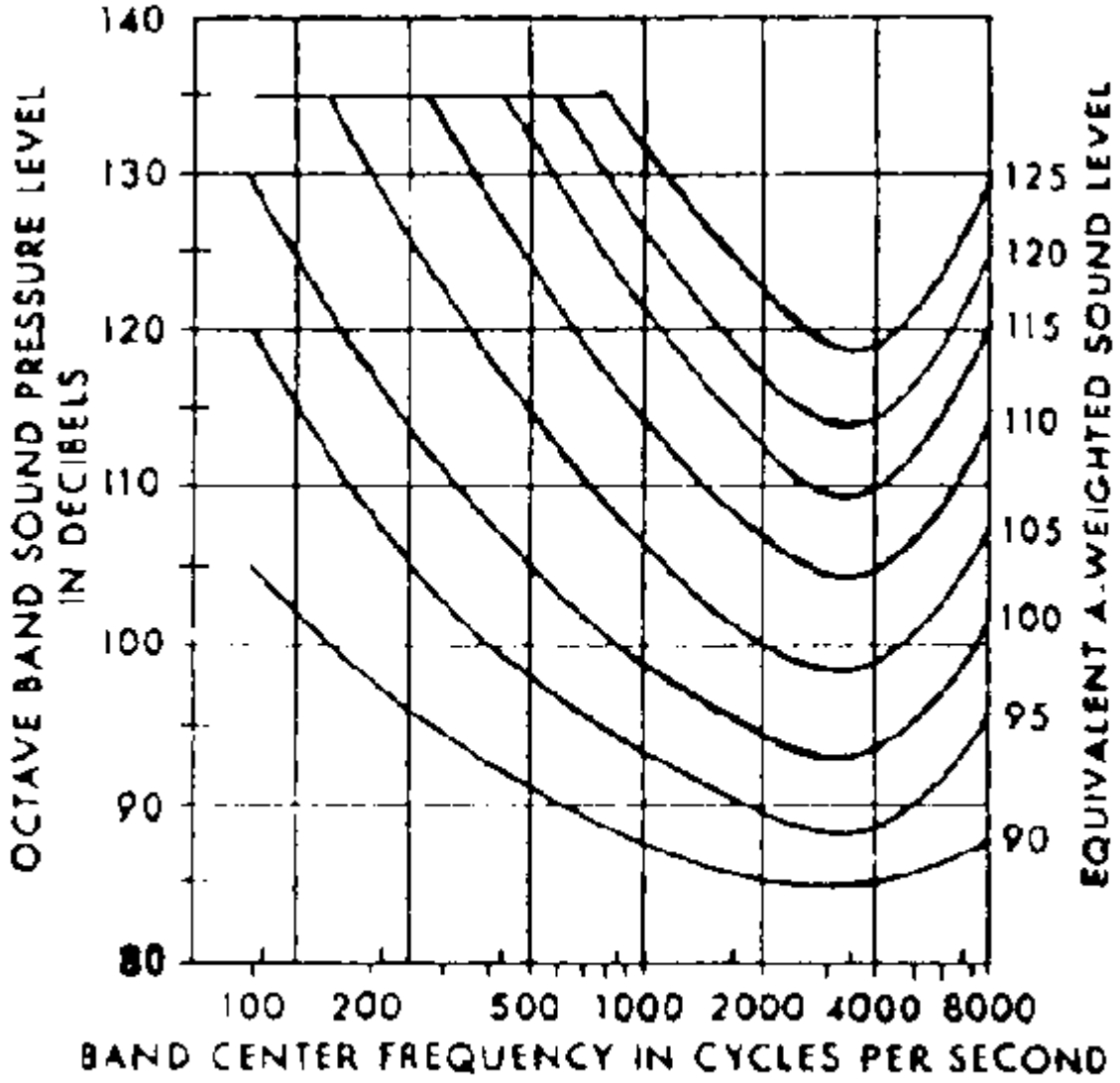


FIGURE G-9

Equivalent sound level contours. Octave band sound pressure levels may be converted to the equivalent A-weighted sound level by plotting them on this graph and noting the A-weighted sound level corresponding to the point of highest penetration into the sound level contours. This equivalent A-weighted sound level, which may differ from the actual A-weighted sound level of the noise, is used to determine exposure limits from Table 1.G-16.

1910.95(b)(1)
When employees are subjected to sound exceeding those listed in Table G-16, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of Table G-16, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.
1910.95(b)(2)
If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.

TABLE G-16 - PERMISSIBLE NOISE EXPOSURES (1)

| Duration per day, hours | Sound level dBA slow response |
|---|---|
| 8 | 90 |
| 6 | 92 |
| 4 | 95 |
| 3 | 97 |
| 2 | 100 |
| 1 1/2 | 102 |
| 1 | 105 |
| 1/2 | 110 |
| 1/4 or less | 115 |

Footnote(1) When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: C(1)/T(1) + C(2)/T(2) C(n)/T(n) exceeds unity, then, the mixed exposure should be considered to exceed the limit value. Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

1910.95(c)
"Hearing conservation program."
1910.95(c)(1)
The employer shall administer a continuing, effective hearing conservation program, as described in paragraphs (c) through (o) of this section, whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent. For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with appendix A and Table G-16a, and without regard to any attenuation provided by the use of personal protective equipment.
1910.95(c)(2)
For purposes of paragraphs (c) through (n) of this section, an 8-hour time-weighted average of 85 decibels or a dose of fifty percent shall also be referred to as the action level.
1910.95(d)
"Monitoring."
1910.95(d)(1)
When information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, the employer shall develop and implement a monitoring program.
1910.95(d)(1)(i)
The sampling strategy shall be designed to identify employees for inclusion in the hearing conservation program and to enable the proper selection of hearing protectors.
1910.95(d)(1)(ii)
Where circumstances such as high worker mobility, significant variations in sound level, or a significant component of impulse noise make area monitoring generally inappropriate, the employer shall use representative personal sampling to comply with the monitoring requirements of this paragraph unless the employer can show that area sampling produces equivalent results.
1910.95(d)(2)(i)
All continuous, intermittent and impulsive sound levels from 80 decibels to 130 decibels shall be integrated into the noise measurements.
1910.95(d)(2)(ii)

Instruments used to measure employee noise exposure shall be calibrated to ensure measurement accuracy.
1910.95(d)(3)
Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that:
1910.95(d)(3)(i)
Additional employees may be exposed at or above the action level; or
1910.95(d)(3)(ii)
The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet the requirements of paragraph (j) of this section.
1910.95(e)
"Employee notification." The employer shall notify each employee exposed at or above an 8-hour time-weighted average of 85 decibels of the results of the monitoring.
1910.95(f)
"Observation of monitoring." The employer shall provide affected employees or their representatives with an opportunity to observe any noise measurements conducted pursuant to this section.
1910.95(g)
"Audiometric testing program."
1910.95(g)(1)
The employer shall establish and maintain an audiometric testing program as provided in this paragraph by making audiometric testing available to all employees whose exposures equal or exceed an 8-hour time-weighted average of 85 decibels.
1910.95(g)(2)
The program shall be provided at no cost to employees.
1910.95(g)(3)
Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometers does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.
1910.95(g)(4)
All audiograms obtained pursuant to this section shall meet the requirements of Appendix C: "Audiometric Measuring Instruments."
1910.95(g)(5)
"Baseline audiogram."
1910.95(g)(5)(i)
Within 6 months of an employee's first exposure at or above the action level, the employer shall establish a valid baseline audiogram against which subsequent audiograms can be compared.
1910.95(g)(5)(ii)
"Mobile test van exception." Where mobile test vans are used to meet the audiometric testing obligation, the employer shall obtain a valid baseline audiogram within 1 year of an employee's first exposure at or above the action level. Where baseline audiograms are obtained more than 6 months after the employee's first exposure at or above the action level, employees shall wear hearing protectors for any period exceeding six months after first exposure until the baseline audiogram is obtained.
1910.95(g)(5)(iii)
Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise.
1910.95(g)(5)(iv)
The employer shall notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.
1910.95(g)(6)
"Annual audiogram." At least annually after obtaining the baseline audiogram, the employer shall obtain a new audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels.
1910.95(g)(7)
"Evaluation of audiogram."
1910.95(g)(7)(i)
Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift as defined in paragraph (g)(10) of this section has occurred. This comparison may be done by a technician.
1910.95(g)(7)(ii)

If the annual audiogram shows that an employee has suffered a standard threshold shift, the employer may obtain a retest within 30 days and consider the results of the retest as the annual audiogram.
1910.95(g)(7)(iii)
The audiologist, otolaryngologist, or physician shall review problem audiograms and shall determine whether there is a need for further evaluation. The employer shall provide to the person performing this evaluation the following information:
1910.95(g)(7)(iii)(A)
A copy of the requirements for hearing conservation as set forth in paragraphs (c) through (n) of this section;
1910.95(g)(7)(iii)(B)
The baseline audiogram and most recent audiogram of the employee to be evaluated;
1910.95(g)(7)(iii)(C)
Measurements of background sound pressure levels in the audiometric test room as required in Appendix D: Audiometric Test Rooms.
1910.95(g)(7)(iii)(D)
Records of audiometer calibrations required by paragraph (h)(5) of this section.
1910.95(g)(8)
"Follow-up procedures."
1910.95(g)(8)(i)
If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift as defined in paragraph (g)(10) of this section has occurred, the employee shall be informed of this fact in writing, within 21 days of the determination.
1910.95(g)(8)(ii)
Unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure, the employer shall ensure that the following steps are taken when a standard threshold shift occurs:
1910.95(g)(8)(ii)(A)
Employees not using hearing protectors shall be fitted with hearing protectors, trained in their use and care, and required to use them.
1910.95(g)(8)(ii)(B)
Employees already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.
1910.95(g)(8)(ii)(C)
The employee shall be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the employer suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
1910.95(g)(8)(ii)(D)
The employee is informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.
1910.95(g)(8)(iii)
If subsequent audiometric testing of an employee whose exposure to noise is less than an 8-hour TWA of 90 decibels indicates that a standard threshold shift is not persistent, the employer:
1910.95(g)(8)(iii)(A)
Shall inform the employee of the new audiometric interpretation; and
1910.95(g)(8)(iii)(B)
May discontinue the required use of hearing protectors for that employee.
1910.95(g)(9)
"Revised baseline." An annual audiogram may be substituted for the baseline audiogram when, in the judgment of the audiologist, otolaryngologist or physician who is evaluating the audiogram:
1910.95(g)(9)(i)
The standard threshold shift revealed by the audiogram is persistent; or
1910.95(g)(9)(ii)
The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.
1910.95(g)(10)
"Standard threshold shift."
1910.95(g)(10)(i)
As used in this section, a standard threshold shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.
1910.95(g)(10)(ii)
In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in Appendix F: "Calculation and Application of Age Correction to Audiograms."
1910.95(h)
"Audiometric test requirements."

1910.95(h)(1)
Audiometric tests shall be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency shall be taken separately for each ear.
1910.95(h)(2)
Audiometric tests shall be conducted with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used in accordance with, American National Standard Specification for Audiometers, S3.6-1969, which is incorporated by reference as specified in Sec. 1910.6.
1910.95(h)(3)
Pulsed-tone and self-recording audiometers, if used, shall meet the requirements specified in Appendix C: "Audiometric Measuring Instruments."
1910.95(h)(4)
Audiometric examinations shall be administered in a room meeting the requirements listed in Appendix D: "Audiometric Test Rooms."
1910.95(h)(5)
"Audiometer calibration."
1910.95(h)(5)(i)
The functional operation of the audiometer shall be checked before each day's use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10 decibels or greater require an acoustic calibration.
1910.95(h)(5)(ii)
Audiometer calibration shall be checked acoustically at least annually in accordance with Appendix E: "Acoustic Calibration of Audiometers." Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.
1910.95(h)(5)(iii)
An exhaustive calibration shall be performed at least every two years in accordance with sections 4.1.2; 4.1.3.; 4.1.4.3; 4.2; 4.4.1; 4.4.2; 4.4.3; and 4.5 of the American National Standard Specification for Audiometers, S3.6-1969. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this calibration.
1910.95(i)
"Hearing protectors."
1910.95(i)(1)
Employers shall make hearing protectors available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to the employees. Hearing protectors shall be replaced as necessary.
1910.95(i)(2)
Employers shall ensure that hearing protectors are worn:
1910.95(i)(2)(i)
By an employee who is required by paragraph (b)(1) of this section to wear personal protective equipment; and
1910.95(i)(2)(ii)
By any employee who is exposed to an 8-hour time-weighted average of 85 decibels or greater, and who:
1910.95(i)(2)(ii)(A)
Has not yet had a baseline audiogram established pursuant to paragraph (g)(5)(ii); or
1910.95(i)(2)(ii)(B)
Has experienced a standard threshold shift.
1910.95(i)(3)
Employees shall be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by the employer.
1910.95(i)(4)
The employer shall provide training in the use and care of all hearing protectors provided to employees.
1910.95(i)(5)
The employer shall ensure proper initial fitting and supervise the correct use of all hearing protectors.
1910.95(j)
"Hearing protector attenuation."
1910.95(j)(1)
The employer shall evaluate hearing protector attenuation for the specific noise environments in which the protector will be used. The employer shall use one of the evaluation methods described in Appendix B: "Methods for Estimating the Adequacy of Hearing Protection Attenuation."
1910.95(j)(2)
Hearing protectors must attenuate employee exposure at least to an 8-hour time-weighted average of 90 decibels as required by paragraph (b) of this section.
1910.95(j)(3)

For employees who have experienced a standard threshold shift, hearing protectors must attenuate employee exposure to an 8-hour time-weighted average of 85 decibels or below.
1910.95(j)(4)
The adequacy of hearing protector attenuation shall be re-evaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. The employer shall provide more effective hearing protectors where necessary.
1910.95(k)
"Training program."
1910.95(k)(1)
The employer shall train each employee who is exposed to noise at or above an 8-hour time weighted average of 85 decibels in accordance with the requirements of this section. The employer shall institute a training program and ensure employee participation in the program.
1910.95(k)(2)
The training program shall be repeated annually for each employee included in the hearing conservation program. Information provided in the training program shall be updated to be consistent with changes in protective equipment and work processes.
1910.95(k)(3)
The employer shall ensure that each employee is informed of the following:
1910.95(k)(3)(i)
The effects of noise on hearing;
1910.95(k)(3)(ii)
The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care; and
1910.95(k)(3)(iii)
The purpose of audiometric testing, and an explanation of the test procedures.
1910.95(l)
"Access to information and training materials."
1910.95(l)(1)
The employer shall make available to affected employees or their representatives copies of this standard and shall also post a copy in the workplace.
1910.95(l)(2)
The employer shall provide to affected employees any informational materials pertaining to the standard that are supplied to the employer by the Assistant Secretary.
1910.95(l)(3)
The employer shall provide, upon request, all materials related to the employer's training and education program pertaining to this standard to the Assistant Secretary and the Director.
1910.95(m)
"Recordkeeping" -
1910.95(m)(1)
"Exposure measurements." The employer shall maintain an accurate record of all employee exposure measurements required by paragraph (d) of this section.
1910.95(m)(2)
"Audiometric tests."
1910.95(m)(2)(i)
The employer shall retain all employee audiometric test records obtained pursuant to paragraph (g) of this section:
1910.95(m)(2)(ii)
This record shall include:
1910.95(m)(2)(ii)(A)
Name and job classification of the employee;
1910.95(m)(2)(ii)(B)
Date of the audiogram;
1910.95(m)(2)(ii)(C)
The examiner's name;
1910.95(m)(2)(ii)(D)
Date of the last acoustic or exhaustive calibration of the audiometer; and
1910.95(m)(2)(ii)(E)
Employee's most recent noise exposure assessment.
1910.95(m)(2)(ii)(F)
The employer shall maintain accurate records of the measurements of the background sound pressure levels in audiometric test rooms.
1910.95(m)(3)

"Record retention." The employer shall retain records required in this paragraph (m) for at least the following periods.
1910.95(m)(3)(i)
Noise exposure measurement records shall be retained for two years.
1910.95(m)(3)(ii)
Audiometric test records shall be retained for the duration of the affected employee's employment.
1910.95(m)(4)
"Access to records." All records required by this section shall be provided upon request to employees, former employees, representatives designated by the individual employee, and the Assistant Secretary. The provisions of 29 CFR 1910.1020 (a)-(e) and (g)-(i) apply to access to records under this section.
1910.95(m)(5)
"Transfer of records." If the employer ceases to do business, the employer shall transfer to the successor employer all records required to be maintained by this section, and the successor employer shall retain them for the remainder of the period prescribed in paragraph (m)(3) of this section.
1910.95(n)
"Appendices."
1910.95(n)(1)
Appendices A, B, C, D, and E to this section are incorporated as part of this section and the contents of these appendices are mandatory.
1910.95(n)(2)
Appendices F and G to this section are informational and are not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations.
1910.95(o)
"Exemptions." Paragraphs (c) through (n) of this section shall not apply to employers engaged in oil and gas well drilling and servicing operations.

[39 FR 23502, June 27, 1974, as amended at 46 FR 4161, Jan. 16, 1981; 46 FR 62845, Dec. 29, 1981; 48 FR 9776, Mar. 8, 1983; 48 FR 29687, June 28, 1983; 54 FR 24333, June 7, 1989; 61 FR 5507, Feb. 13, 1996; 61 FR 9227, March 7, 1996; 71 FR 16672, April, 3, 2006; 73 FR 75584, Dec. 12, 2008]