OSHA TRAINING PROGRAM

MATERIALS CHECK SHEET

___ Cassette Training Tape *
Part 1 – Occupational Exposure to Bloodborne Pathogens
Part 2 – Hazard Communication (Hazardous Chemicals)

___ Policy & Procedure for Reviewing Client's Exposure Control Plan & Knowledge of Client's Hazard Communication Plan

___ Protect Yourself When Handling Sharps

___ Holding the line on Contamination

___ Personal Protective Equipment Cuts Risk

___ Hepatitis–B Vaccination – Protection for you

___ Reporting Exposure Incidents

___ Vaccination Instructions for the Employee

___ Vaccination Instructions for the Health Care Provider

___ Proof of Hepatitis-B Vaccination ***

___ Hepatitis-B Declination **

___ Material Safety Data Sheet (MSDS) Information

___ Glossary of Common MSDS Terms

___ Container Labels Information

___ Post Training Test ***

___ Acknowledgement of Training & Acknowledgement of Policy & Procedure Review ***

___ Pre-Addressed Return Envelope

* Return within ten (10) working days

** Complete and return if you wish to decline the Hepatitis-B vaccination series at this time

*** Complete and return

POLICY

The requirements of OSHA's Occupational Exposure to Bloodborne Pathogens Standard and Hazardous Communication Standard was developed to reduce the risk of employee injury and occupational illness in the work place. Federal and, in some instances, state law, requires that employers provide safeguards necessary to protect employee health and safety. These safeguards include employee education, the use of personal protective equipment and the implementation of policies and procedures that address safe work practices. MedSource is committed to protecting the health and safety of their employees. All employees who have occupational exposure to bloodborne pathogens and / or hazardous chemicals will follow the procedure(s) listed below.

PROCEDURE:
OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS

Whenever reporting to any job site for the first time after receiving this policy and procedure, you must request to see the client's Exposure Control Plan. In order to understand the policies of that client as they relate to occupational exposure, you must review the Exposure Control Plan before beginning your duties. Pay special attention to the following areas:

- The procedures requiring the use of personal protective equipment and the location of personal protective equipment.

- Decontamination procedures for work surfaces including equipment as well as personal protective equipment. If you get blood on your lab coat or uniform, it is considered contaminated and must be decontaminated by the client. You must not leave the facility with contaminated clothing.

- The labeling and color-coding system for biohazards, including methods used for identifying contaminated laundry.

- Who to report to in the event of an exposure incident (e.g. needle stick, any specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or potentially infectious materials).

If you have any questions after you have read the Exposure Control Plan, contact the appropriate supervisor. If the client does not have an Exposure Control Plan in place, notify MedSource before beginning your duties.

PROCEDURE FOR POST-EXPOSURE FOLLOW-UP

In the event of an exposure incident, you must:

- Cleanse the affected area immediately

- Notify the facility supervisor or person designated in the Exposure Control Plan. They shall make immediately available to any exposed employee a confidential medical evaluation. They are required to supply the medical professional proving medical care with documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred. If the exposed employee consents to baseline blood collection, but not to HIV serologic testing, the sample shall be preserved for at least 90 days. If within 90 days of the exposure incident consent is given for baseline testing, such testing shall be done as soon as feasible. Consult the client's Exposure Control Plan for details concerning source individual's blood testing following an exposure incident.

- Notify MedSource at (800) 440-1909 within two hours of the incident. Communication with the MedSource Safety Officer will be essential for proper post-exposure follow-up. The Safety Officer will discuss the exposure incident with you and will then follow up with the client. A copy of the Hepatitis-B vaccination status will be forwarded to the client for post-exposure follow-up. The guidelines for post-exposure follow-up recommended by the Centers for Disease Control will be followed.

PROCEDURES – HAZARD COMMUNICATION

Whenever reporting to a job site, you are required to familiarize yourself as to the location and content of the client's Hazard Communication Policy and the location of the material safety data sheets (MSDS). If you are asked to work with chemicals (disinfectants, processor chemistry, to name just two of many chemicals you may use), read the label on the container for precautions on their safe handling and use. If you require additional information, consult the MSDS for that chemical. If an MSDS is unavailable for the chemical that you need information on, contact either the facility supervisor or the MedSource Safety Officer at (800) 440-1909.

Clients may require the use of protective equipment when using certain hazardous chemicals. Be sure to follow their policies. Familiarize yourself as to the location of eyewash stations and protective equipment before working with hazardous chemicals.

PROTECT YOURSELF WHEN HANDLING SHARPS

A needlestick or a cut from a contaminated scalpel can lead to infection from Hepatitis-B virus (HBV) or human immunodeficiency virus (HIV), which causes AIDS. Although few cases of AIDS have been documented from occupational exposure, approximately 8,700 health care workers each year contract Hepatitis-B. About 200 will die as a result. The new OSHA standard covering bloodborne pathogens specifies measures to reduce these risks of infection.

PROMPT DISPOSAL

The best way to prevent cuts and sticks is to minimize contact with sharps. That means disposing of them immediately after use. Puncture-resistant containers must be available nearby to hold contaminated sharps – either for disposal or, for reusable sharps, later decontamination for reuse. When reprocessing contaminated reusable sharps, employees must not reach by hand into the holding container. Contaminated sharps must never be sheared or broken.

Recapping, bending, or removing needles is permissible only if there is no feasible alternative or if required for a specific medical procedure such as blood gas analysis. If recapping, bending, or removal is necessary, workers must use either a mechanical device or a one-handed technique. If recapping is essential – for example, between multiple injections for the same patient – employees must avoid using both hands to recap. Employees might recap with a one-handed “scoop” technique, using the needle itself to pick up the cap, pushing cap and sharp together against a hard surface to ensure a tight fit. Or they might hold the cap with tongs or forceps to place it on the needle.

SHARPS CONTAINERS

Containers for used sharps must be puncture resistant. The sides and the bottom must be leak proof. They must be labeled or color coded red to ensure that everyone knows the contents are hazardous. Containers for disposable sharps must have a lid, and they must be maintained upright to keep liquids and the sharps inside.

Employees must never reach by hand into containers of contaminated sharps. Containers for reusable sharps could be equipped with wire basket liners for easy removal during reprocessing, or employees could use tongs or forceps to withdraw the contents. Reusable sharps disposal containers may not be opened, emptied, or cleaned manually.

Containers need to be located as near as feasible the area of use. In some cases, they may be placed on carts to prevent access by mentally disturbed or pediatric patients. Containers also should be available wherever sharps may be found, such as in laundries. The containers must be replaced routinely and not be overfilled, which can increase the risk of needlesticks or cuts.

HANDLING CONTAINERS

When employees are ready to discard containers, they should first close the lids. If there is a chance of leakage from the primary container, the employees should use a secondary container that is closeable, labeled, or color coded and leak resistant.

Careful handling of sharps can prevent injury and reduce the risk of infection. By following these work practices, employees can decrease their chances of contracting bloodborne illness.

HOLDING THE LINE ON CONTAMINATION

Keeping work areas in a clean and sanitary condition reduces employees' risk of exposure to bloodborne pathogens. Each year about 8,700 health care workers are infected with Hepatitis-B virus, and 200 die from contracting Hepatitis-B through their work. The chance of contracting human immunodeficiency virus (HIV), the bloodborne pathogen, which causes AIDS, from occupational exposure, is small, yet a good housekeeping program can minimize this risk as well.

DECONTAMINATION

Every employer whose employees are exposed to blood or other potentially infectious materials must develop a written schedule for cleaning each area where exposures occur. The methods of decontaminating different surfaces must be specified, determined by the type of surface to be cleaned, the soil present and the tasks or procedures that occur in that area.

For example, different cleaning and decontamination measure would be used for surgical operatory and a patient room. Similarly, hard surfaced flooring and carpeting require separate cleaning methods. More extensive efforts will be necessary for gross contamination that for minor spattering. Likewise, such varied tasks as laboratory analyses and normal patient care would require different techniques for clean up.

Employees must decontaminate working surfaces and equipment with an appropriate disinfectant after completing procedures involving exposure to blood. Many laboratory procedures are performed on a continual basis throughout a shift. Except as discussed below, it is not necessary to clean and decontaminate between procedures. However, if the employee leaves the area for a period of time, for a break or lunch, then contaminated work surfaces must be cleaned.

Employees also must clean (1) when surfaces become obviously contaminated; (2) after any spill of blood or other potentially infectious materials; and (3) at the end of the work shift if contamination might have occurred. Thus, employees need not decontaminate the work area after each patient care procedure, but only after those that actually result in contamination.

If surfaces or equipment are draped with protective coverings such as plastic wrap or aluminum foil, these coverings should be removed or replaced if they become obviously contaminated. Reusable receptacles such as bins, pails and cans that are likely to become contaminated must be inspected and decontaminated on a regular basis.

If contamination is visible, workers must clean and decontaminate the item immediately, or as soon as feasible.

Should glassware that may be potentially contaminated break, workers need to use mechanical means such as a brush and dustpan or tongs or forceps to pick up the broken glass – never by hand, even when wearing gloves.

Before any equipment is services or shipped for repairing or cleaning, it must be decontaminated to the fullest extent possible. The equipment must be labeled, indicating which portions are still contaminated. This enables employees and those who service the equipment to take appropriate precautions to prevent exposure.

REGULATED WASTE

In addition to effective decontamination of work areas, proper handling of regulated waste is essential to prevent unnecessary exposure to blood and other potentially infectious materials. Examples of regulated

waste are liquid or semi-liquid blood and other potentially infectious materials, items caked with these materials, items that would release blood or other potentially infected materials if compressed, pathological or microbiological wastes and contaminated sharps.

Containers used to store regulated waste must be closeable and suitable to contain the contacts and prevent leakage of fluids. Containers designed for sharps also must be puncture resistant. They must be labeled or color-coded to ensure that employees are aware of the potential hazards. Such containers must be closed before removal to prevent the contents from spilling. If the outside of a container becomes contaminated, it must be placed within a second suitable container. Regulated waste must be disposed of in accordance with applicable state and local laws.

LAUNDRY

Laundry workers must wear gloves and handle contaminated laundry as little as possible, with a minimum of agitation. Contaminated laundry should be bagged or placed in containers at the location where it is used, but not sorted or rinsed there.

Laundry must be transported within the establishment or to outside laundries in labeled or red color-coded bags. If the facility uses Universal Precautions for handling all soiled laundry, then alternate labeling or color-coding that can be recognized by the employees may be used. If laundry is wet and it might soak through laundry bags, then workers must use bags that prevent leakage to transport it.

PERSONAL PROTECTIVE EQUIPMENT CUTS RISK

Wearing gloves, gowns, masks, and eye protection can significantly reduce health risks for workers exposed to blood and other potentially infectious materials. The new OSHA standard covering bloodborne disease requires employers to provide appropriate personal protective equipment (PPE) and clothing free of charge to employees.

Workers who have direct exposure to blood and other potentially infectious materials on their jobs run the risk of contracting bloodborne infections from Hepatitis-B virus (HBV), human immunodeficiency virus (HIV) that causes AIDS, and other pathogens. About 8,700 health care workers each year are infected with HBV, and 200 die from the infection. Although the risk of contracting AIDS through occupational exposure is much lower, wearing proper personal protective equipment can greatly reduce potential exposure to all bloodborne infections.

SELECTING PPE

Personal protective clothing and equipment must be suitable. This means the level of protection must fit the expected exposure. For example, gloves would be sufficient for a laboratory technician who is drawing blood, whereas, a pathologist conducting an autopsy would need considerably more protective clothing.

PPE may include gloves, gowns, laboratory coats, face shields or masks, eye protection, pocket masks, and other protective gear. The gear must be readily accessible to employees and available in appropriate sizes.

If an employee is expected to have hand contact with blood or other potentially infectious materials or contaminated surfaces, he or she must wear gloves. Single use gloves cannot be washed or decontaminated for re-use. Utility gloves may be decontaminated if they are not compromised. They should be replaced when they show signs of cracking, peeling, tearing, puncturing, or deteriorating. If employees are allergic to standard gloves, the employer must provide hypoallergenic gloves or similar alternatives.

Routine gloving is not required for phlebotomy in voluntary blood donation centers, though it is necessary for all other phlebotomies. In any case, gloves must be available in voluntary blood donation centers for employees who want to use them. Workers in voluntary blood donation centers must use gloves (1) when they have cuts, scratches or other breaks in their skin; (2) while they are in training; and (3) when they believe contamination might occur.

Employees should wear eye and mouth protection such as goggles and masks, glasses with solid side shields, and masks or chin-length face shields when splashes, sprays, splatters, or droplets of potentially infectious materials pose a hazard through the eyes, nose or mouth. More extensive coverings such as gowns, aprons, surgical caps and hoods, and shoe covers or boots are needed when gross contamination is expected. This often occurs, for example during orthopedic surgery or autopsies.

AVOIDING CONTAMINATION

The key is that blood or other infectious materials must not reach an employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions for the duration of exposure.

Employers must provide the PPE and ensure that their workers wear it. This means that if a lab coat is considered PPE, the employer rather than the employee must supply it. The employer also must clean or launder clothing and equipment and repair or replace it as necessary.

Additional protective measures such as using PPE in animal rooms and decontaminating PPE before laundering are essential in facilities that conduct research on HIV or HBV.

EXCEPTION

There is one exception to the requirement for protective gear. An employee may choose, temporarily and briefly, under rare and extraordinary circumstances, to forego the equipment. It must be the employee's professional judgment that using the protective equipment would prevent the delivery of health care or public safety services or would pose an increased hazard to the safety of the worker or co-worker. When one of these excepted situations occurs, employers are to investigate and document the circumstances to determine if there are ways to avoid it in the future. For example, if a firefighter's resuscitation device is damaged, perhaps another type of device should be used or the device should be carried in a different manner. Exceptions must be limited – this is not a blanket exemption.

DECONTAMINATING AND DISPOSING OF PPE

Employees must remove personal protective clothing and equipment before leaving the work area or when the PPE becomes contaminated. If a garment is penetrated, workers must remove it immediately or as soon as feasible. Used protective clothing and equipment must be placed in designated containers for storage, decontamination, or disposal.

OTHER PROTECTIVE PRACTICES

If an employee's skin or mucous membranes come into contact with blood, he or she is to wash with soap and water and flush eyes with water as soon as feasible. In addition, workers must wash their hands immediately or as soon as feasible after removing protective equipment. If soap and water are not immediately available, employers may provide other hand washing measures such as moist towelettes. Employees still must wash with soap and water as soon as possible.

Employees must refrain from eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses in areas where they may be exposed to blood or other potentially infectious materials.

HEPATITIS-B VACCINATION – PROTECTION FOR YOU

WHAT IS HBV?

Hepatitis-B virus (HBV) is a potentially life-threatening bloodborne pathogen. Centers for Disease Control estimates there are approximately 280,000 HBV infections each year in the U.S.

Approximately 8,700 health care workers each year contract Hepatitis-B, and about 200 will die as a result. In addition, some who contract HBV will become carriers, passing the disease on to others. Carriers also face a significantly higher risk for other liver ailments, which can be fatal, including cirrhosis of the liver and primary liver cancer.

HBV infection is transmitted through exposure to blood and other infectious body fluids and tissues. Anyone with occupational exposure to blood is at risk of contracting infection.

Employers must provide engineering controls; workers must use work practices and protective clothing and equipment to prevent exposure to potentially infectious materials. However, the best defense against Hepatitis-B is vaccination.

WHO NEEDS VACCINATION?

The new OSHA standard covering bloodborne pathogens requires employers to offer the three-injection vaccination series free to all employees who are exposed to blood or other potentially infectious materials as part of their job duties. This includes health care workers, emergency responders, morticians, first-aid personnel, law enforcement officers, correctional facilities staff, launderers, as well as others.

The vaccination must be offered within ten (10) days of initial assignment to a job where exposure to blood or other potentially infectious materials can be "reasonably anticipated". The requirements for vaccinations of those already on the job take effect July 6, 1992.

WHAT DOES VACCINATION INVOLVE?

The Hepatitis-B vaccination is a noninfectious, yeast-based vaccine given in three infections in the arm. It is prepared from recombinant yeast cultures, rather than human blood or plasma. Thus, there is no risk of contamination from other bloodborne pathogens nor is there any chance of developing HBV from the vaccine.

The second injection should be given one month after the first, and the third injection six months after the initial dose. More than 90 percent of those vaccinated will develop immunity to the Hepatitis-B virus. To ensure immunity, it is important for individuals to receive all three injections. At this point it is unclear how long the immunity lasts, so booster shots may be required at some point in the future.

The vaccine causes no harm to those who are already immune or to those who may be HBV carriers. Although employees may opt to have their blood tested for antibodies to determine need for the vaccine, employers may not make such screening a condition of receiving vaccination nor are employers required to provide prescreening.

Each employee should receive counseling from a health care professional when vaccination is offered. This discussion will help an employee determine whether inoculation is necessary.

WHAT IF I DECLINE VACCINATION?
Workers who decide to decline vaccination must complete a declination form. Employers must keep these forms on file so that they know the vaccination status of everyone who is exposed to blood. At any time after a worker initially declines to receive the vaccine, he or she may opt to take it.

WHAT IF I AM EXPOSED, BUT HAVE NOT YET BEEN VACCINATED?
If a worker experiences and exposure incident, such as a needlestick or a blood splash in the eye, he or she must receive confidential medical evaluation from a licensed health care professional with appropriate follow-up. To the extent possible by law, the employer is to determine the source individual for HBV as well as human immunodeficiency virus (HIV) infectivity. The worker's blood will also be screened if he or she agrees.

The health care professional is to follow the guidelines of the U.S. Public Health Service in providing treatment. This would include Hepatitis-B vaccination. The health care professional must give a written opinion on whether or not vaccination is recommended and whether the employee received it. Only this information is reported to the employer. Employee medical records must remain confidential. HIV or HBV status must NOT be reported to the employer.

REPORTING EXPOSURE INCIDENTS

OSHA's new bloodborne pathogens standard includes provisions for medical follow-up for workers who have an exposure incident. The most obvious exposure incident is a needlestick. But any specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials is considered an exposure incident and should be reported to the employer.

Exposure incidents can lead to infection from Hepatitis-B virus (HBV) or human immunodeficiency virus (HIV), which causes AIDS. Although few cases of AIDS are directly traceable to workplace exposure, every year about 8,700 health care workers contract Hepatitis-B from occupational exposures. Approximately 200 will die from this bloodborne infection. Some will become carriers, passing the infection on to others.

WHY REPORT?
Reporting an exposure incident right away permits immediate medical follow-up. Early action is crucial. Immediate intervention can forestall the development of Hepatitis-B or enable the affected worker to track potential HIV infection. Prompt reporting also can help the worker avoid spreading bloodborne infection to others. Further, it enables the employer to evaluate the circumstances surrounding the exposure incident to try and find ways to prevent such a situation from occurring again. Reporting is also important because part of the follow-up includes testing the blood of the source individual to determine HBV and HIV infectivity if this is unknown and if permission for testing can be obtained. The exposed employee must be informed of the results of these tests. Employers must tell the employee what to do if an exposure occurs.

MEDICAL EVALUATION AND FOLLOW-UP

Employers must provide free medical evaluation and treatment to employees who experience and exposure incident. They are to refer exposed employees to a licensed health care provider who will counsel the individual about what happened and how to prevent further spread of any potential infection. He or she will prescribe appropriate treatment in line with current U.S. Public Health Service recommendations. The licensed health care provider also will evaluate any reported illness to determine if the symptoms may be related to HIV or HBV development. The first step is to test the blood of the exposed employee. Any employee who wants to participate in the medical evaluation program must agree to have blood drawn. However, the employee has the option to give the blood sample but refuse permission for HIV testing at that time. The employer must maintain the employee's blood for 90 days in case the employee changes his or her mind about testing – should symptoms develop that might relate to HIV or HBV infection.

The health care provider will counsel the employee based on the test results. If the source individual was HBV positive or in a high-risk category, the exposed employee may be given Hepatitis-B immune globulin and vaccination, as necessary. If there is no information on the source individual or the test is negative, and the employee has not been vaccinated or does not have immunity based on his or her test, he or she may receive the vaccine. Further, the health care provider will discuss any other findings from the tests.

The standard requires that the employer make the Hepatitis-B vaccine available, at no cost to the employee, to all employees who have occupational exposure to blood and other potentially infectious materials. This requirement is in addition to post exposure testing and treatment responsibilities.

WRITTEN OPINION

In addition to counseling the employee, the health care provider will provide a written report to the employer. This report simply identifies whether or not the employee received vaccination. The health care provider also must note that the employee has been informed of the results of the evaluation and told of any medical conditions resulting from exposure to blood, which require further evaluation or treatment. Any added finding must be kept confidential.

CONFIDENTIALITY

Medical records must remain confidential. They are not available to the employer. The employee must give specific written consent for anyone to see the records. Records must be maintained for the duration of employment plus 30 years in accordance with OSHA's standard on access to employee exposure and medical records.

VACCINATION INSTRUCTIONS FOR THE EMPLOYEE

The OSHA standard covering bloodborne pathogens requires employers to offer the three injection vaccination series free to all employees who are exposed to blood or other potentially infectious materials as part of their job duties. If you have not already done do, please review the training sheet titled Hepatitis-B Vaccination-Protection For You.

If you elect not to have the vaccination series at this time, you must sign the enclosed declination form and return it to MedSource. If at some future date you decide that you want the vaccination series, notify the MedSource Safety Officer at (800) 440-1909 and the necessary arrangements will be made.

If you wish to have the vaccination series, call the MedSource Safety Officer at (800) 440-1909 before having **each** injection of the vaccination series. The Safety Officer may designate a specific facility for you to receive your vaccination(s). Payment for the vaccination is the responsibility of MedSource. When reporting for the injection series, please give the page titled Vaccination Instruction to the administering health care professional.

Below is an injection schedule to help remind you of the dates in which you should receive injections two and three. Take a moment to fill it out and make a not on your calendar.

	Date
Initial Injection	______________________________
Injection #2 (one month from initial injection)	______________________________
Injection #3 (six months from initial injection)	______________________________

VACCINATION INSTRUCTIONS

The health care employee before you is an employee of MedSource, a provider of temporary staffing to hospitals, clinics, and physicians' practices in all 50 states. Our employee has elected to receive the Hepatitis-B vaccination series. In order to fulfill the requirements of the OSHA Occupational Exposure to Bloodborne Pathogens standard 29 CFR1910.1030 (h) (i) (B), the employer is required to maintain a copy of the employee's Hepatitis-B vaccination status including the dates of all Hepatitis-B vaccinations. We ask that you forward to MedSource a copy of all documentation after each injection.

MedSource employees will typically fall into one of these two categories:

- The employee lives in the area and it is reasonably anticipated that the complete three part vaccination series will be performed at your facility.
- The employee does not reside in the general area and may not have the complete three part vaccination series performed at your facility. Please bill MedSource for the cost of the injection received.

Please send your invoice for services rendered and documentation of injection to:

MedSource
Attn: Safety Officer
33 North Garden Avenue, Suite 800
Clearwater, FL 33755
(800) 440-1909

PROOF OF HEPTATIS-B VACCINATION

	DATE	FACILITY
Initial injection	______________________	________________________
Injection #2	______________________	________________________
Injection #3	______________________	________________________

I received the Hepatitis-B injections on the dates and at the facilities listed above.

Employee Name: ____
Print

Employee Signature: ____
Signature

MANDATORY DISCLOSURE FOR ALL POTENTIALLY EXPOSED EMPLOYEES

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.

__________________________________ __________________________
Employee Signature Date

__________________________________ __________________________
Witness Signature Date

medSource

SPECIALIZED MEDICAL RESOURCING

MATERIAL SAFETY DATA SHEET (MSDS)

The Material Safety Data Sheet, or MSDS, is designed to provide employers and employees with information necessary to use a chemical substance or mixture safely. The MSDS identifies the substance(s) of concern and potential hazards. It describes precautions for use, handling and storage. It also gives procedures for emergency situations.

The MSDS from different companies may use different formats, but all should provide information that is required by OSHA Hazard Communication Standard, 29 CFR 1910.1200. Typically, an MSDS will contain the following:

- **HEADING** – gives the name and address of the company. It also gives the date the MSDS was issued.
- **MATERIAL IDENTIFICATION** – gives the identity, the product name or number you see on the container label, and describes the type of product.
- **HAZARDOUS INGREDIENTS** – identifies the hazardous chemicals contained in the product. A chemical component is considered hazardous if exposure to the substance would produce a significant adverse effect during normal use or predictable misuse. For further details, se 29 CFR 1910.1200.

If available, a time-weighted average (TWA) is given for each component. A TWA is an airborne concentration limit set for the substance in the work place. The worker should use protective measures if work place air concentrations exceed the TWA. Most TWA values are set by OSHA or by the American Conference of Governmental Industrial Hygienists.

- **PHYSICAL DATA (boiling point, vapor pressure, etc…)** – Certain physical properties of the product are reported here. Knowing these properties helps the user choose proper handling and emergency procedures.
- **FIRE AND EXPLOSION DATA –** Gives fire fighting guidance and warns of any unusual fire, decomposition or explosion hazard. In a fire, some products will break down to give off a toxic gas. For those that can give off flammable vapors, a flash point is given. Numbers may be utilized to indicate the severity of a hazard. Numerical hazard ratings for fire hazard are (Flash points) (4) – Below 73 degrees F; (3) – Below 100 degrees F; (2) – Below 200 degrees F; (1) – Above 200 degrees F; and (0) – Will not burn.
- **REACTIVITY DATA (stability, incompatibility)** – Describes the stability of the material under reasonable foreseeable conditions of storage, use and misuse. Conditions that may cause a dangerous reaction or degrade the product are noted. In addition, this section may identify other chemicals that are incompatible. Mixing two incompatible chemicals can produce a violent reaction or give off noxious fumes. Numerical hazard ratings for reactivity are (4) – May detonate; (3) – Shock and heat may detonate; (2) – Violent chemical change; (1) Unstable if heated; and (0) – Stable.
- **HEALTH HAZARD DATA** – Gives the signal word for the product – **CAUTION**, **WARNING** or **DANGER**. A product marked **DANGER** is the most hazardous. Some products are also marked **POISON** because of consumer packaging rules. Numerical hazard ratings for health hazard are (4) – Deadly; (3) – Extreme danger; (2) – Hazardous; (1) – Slightly hazardous; and (0) – Normal material.

- **FIRST AID** – Because substances may enter the body by swallowing, breathing or from skin or eye contact, first aid instructions are given for each likely route of exposure. It is important to follow the directions carefully.
- **SPILL OR LEAK PROCEDURES** – Gives instructions to handle spills and disposal of unusable material. The user should check all sections of the MSDS, including Protective Equipment, before working on a spill. Directions for containment and cleanup are given, including recommended procedures for disposal. Because waste handling rules are complex, the MSDS may not name a specific disposal procedure.
- **PROTECTIVE EQUIPMENT** – Names equipment needed to handle the product without sustaining injury. It describes protective clothing that must be worn and any respiratory protection needed, whether it may be personal equipment, exhaust ventilation or both. It may also specify precautions such as eliminating ignition sources when using a flammable product.
- **HANDLING AND STORAGE PRECAUTIONS** – Special handling of storage precautions may be required: Such as a flammable locker to store flammable materials.

GLOSSARY OF COMMON MSDS TERMS

ACGIH	American Conference of Governmental Industrial Hygienists. ACGIH develops and publishes exposure limits or TLV's for many industrial materials.
ACID	Material with a pH less than 7. Water solutions capable of turning litmus indicators red.
ACUTE EFFECTS	Signs and symptoms of overexposure to a material, which develop rapidly. Severe symptoms with a short course, symptoms do not linger.
ACUTE EXPOSURE	A single exposure or single dose of a material.
ALKALI	Material with a pH greater than 7. Basic. Hydroxide or carbonate of an alkali metal, the aqueous solution of which is caustic and basic.
ALLERGEN	A substance which causes an immunologic response after repeated exposure. Responses include: Sneezing, tearing, wheezing and an itchy, red skin rash. Developing an allergy is also called sensitization. A material which can create and allergy, sensitivity or hypersensitivity is an allergen.
ANSI	American National Standards Institute. A privately funded organization that develops or coordinates the development of standards for work practices, processes or procedures and measurements.
ASPHIXIANT	Causes weakness, dizziness, headache, collapse and other symptoms due to a lack of oxygen. Inadequate oxygen, less than 18% causes asphyxia.
CARCINOGEN	Is carcinogenic, can cause cancer.
C.A.S. NO.	Chemical Abstracts Service Number. Chemical information published in "Chemical Abstracts," American Chemical Society, is indexed by this 9-digit number. Many sources of chemical information, at the Department of Defense Material Safety Data Sheet file, are also indexed by this number.
CAUSTIC	Corrosive, causes tissue destruction and irritation.
CC	Closed Cup, a method to test the flash point of a material.
CEILING LIMIT	C. TLF-C Threshold limit value ceiling limit. The concentration of a material in air that should not be exceeded, even instantaneously.
CHEMTREC	Chemical Transportation Emergency Center established by the Chemical Manufacturers Association. CHEMTREC has a 24-hour, toll-free number for information of responding to chemical transportation emergencies. (800) 424-9300
CHRONIC EFFECTS	Signs and symptoms which develop slowly over a long period of time. Symptoms that last a long time or reoccur frequently.
CHRONIC EXPOSURE	Long Term Exposure. Repeated doses or exposures over a long time period.
COC	Cleveland Open Cup, a method to test the flashpoint of a material.
COMBUSTIBLE	Will burn. Combustible liquids are defined as liquids having a flashpoint of greater than 100 degrees F or 37.8 degrees C.
CORROSIVE	Causes tissue destruction or damage, often irreversible, at site of contact or corrodes steel at a rapid rate.

DECOMPOSITION	The breakdown of a material into simpler compounds or elemental products. Heat, light, radiation, chemical reaction and biological decay are some of the processes which can decompose a material.
DOT	Department of Transportation. Responsible for the regulation of chemical transportation.
DUST	Small particles of a material, capable of being suspended in air, and presenting an inhalation and explosion hazard.
EXPLOSIVE	Chemical compound which detonates as a result of shock or heat.
EXTINGUISHER	Fire fighting media. Its purpose is to smother the fire, excluding air or the oxygen source, or to cool the material below its flashpoint. Use an extinguisher suitable for the fire and material that is burning.
FLAMMABLE	Readily ignites or can cause fire under ordinary conditions. A flammable liquid is defined as a liquid having a flashpoint less than 100 degrees F or 37.8 degrees C. Flammable gas can explode.
FLAMMABLE LIMITS	Explosive limits. The range of vapor or gas concentration by volume in air that will burn or explode if an ignition source is present. The range of concentration is between the lower explosive limit (LEL) and the upper explosive limit (UEL).
FLASHPOINT	Temperature in degrees F or C at which a liquid will give off enough flammable vapor to ignite. The flashpoint will vary with the test methods used to determine it. The most common test methods are the Closed Cup (CC) and Open Cup (OC).
FROSTBITE	Local tissue destruction resulting from freezing, freezing burns.
GENERAL VENTILATION	Bringing fresh air into an area to dilute contaminated air. Drawing contaminated air out of an area.
HAZARD	The danger presented by a particular use of a material. Materials with low flashpoints, high toxicity, polymerizing, strongly oxidizing for reducing and very corrosive materials are hazardous.
HAZARD CATEGORY OR CODE	A description of the hazard of a material as determined by the National Fire Protection Association (NFPA). Ratings of 0 to 4, least hazardous to most hazardous, of the health (H), fire or flammability (F) and reactivity (R) hazards have been determined.
INCOMPATIBLE	Materials that cause dangerous, explosive or violent reactions when in contact with one another.
INGESTION	Taking a material in orally, by mouth, eating, drinking or swallowing.
INHALATION	Breathing in a material.
INHIBITOR	A chemical additive that prevents or inhibits a chemical reaction.
LD_{50}	Lethal Dose 50. The dose of a material that will kill 50 percent of a group of test animals.
LEL	Lower explosive limit. The gas or vapor concentration by volume in air that will burn or explode if an ignition source is present. Lowest concentration that will create fire or explosive conditions. At concentrations lower than the LEL, the air mixture is too diffuse or lean to burn.
LOCAL EXHAUST	A ventilation system for capturing contaminated air at its source, at the point where the contaminants are produced.
m^3	Cubic meter = 35.3 cubic feet or 1.3 cubic yards, a metric unit of volume, usually refers to a volume of air.
Mg	Milligram, metric unit of mass or weight, 1000 mg = 1 gram (g).

Mg / m^3	Milligrams per cubic meter, a metric unit of concentration, mg of material per m^3 of air.
NEUTRALIZE	To make ineffective. To apply neutralizer. The reaction of an acid and a base to make a salt.
NFPA	National Fire Protection Association. Promotes and provides fire protection, prevention and safety information. Recommends practice and hazard codes for materials.
NIOSH	National Institute for Occupational Safety and Health, of the U.S. Department of Health and Human Services. Establishes exposure limits, tests and certifies protective and monitoring equipment. Assists OSHA in research and recommendations.
ODOR THRESHOLD	Concentration at which an average person should be able to smell a material, varies from person to person. The odor of a material should not be relied upon as a warning of overexposure.
ORGANIC MATERIALS	Carbon compounds, flammable or combustible, readily catch fire.
OSHA	Occupational Safety & Health Administration, of the U.S. Department of Labor. Responsible for establishing occupational health and safety regulations and their enforcement.
OXIDIZER	Oxidizing agent. A substance that causes another substance to undergo an increase in oxidation number, by removing electrons. Materials that yield oxygen readily to stimulate the combustion of organic matter. Chromate, permanganate, chlorate, peroxide and nitrate are all powerful oxidizers.
PEL	Permissible Exposure Limit, established by OSHA.
Ppb	Parts per billion, a unit for measuring concentration.
Ppm	Parts per million, unit of vapor or gas concentration, parts by volume of a material in a million parts of air, or in a liquid or a solid (water or soil).
POLYMERIZATION	A chemical reaction in which smaller molecules (monomers) combine to form larger molecules (polymers). Hazardous polymerization releases large amounts of energy, usually in the form of heat. Polymerization can rupture containers. Polymerization inhibitors are usually added to polymerizing materials.
REACTION	Chemical reaction, a chemical change or transformation of a substance. Allergic reaction, an allergic response to a material.
REACTIVITY	Tendency of a substance to undergo chemical reaction, releasing energy or heat, forming hazardous by-products.
RECOGNIZED CARCINOGEN	Or ACGIH's "human carcinogen" a substance recognized to have the potential to cause cancer in humans. Some of these materials have TLV's established for them but it is best to minimize all exposure.
REDUCER	Reducing agent. A substance which causes another substance to undergo a decrease in oxidation number, by adding electrons. Hydrogen sulfide and sodium bisulfate are reducing agents.
RESPIRATORY	Refers to the respiratory system, nose, throat, larynx, trachea, bronchioles and alveoli of the lungs and vascular and nervous system components associated with respiratory function and breathing.
RESPIRATORY PROTECTION	Equipment worn to protect the wearer from inhalation of particles, dust, mists, vapors or any contaminants in the atmosphere. Examples are dust respirators, chemical cartridge respirators, SCBA.
SCBA	Self Contained Breathing Apparatus.

STABILITY	How stable a material is. Tendency of a material to remain unchanged. A reactive compound is unstable or exhibits instability.
SUSPECT CARCINOGEN	Substance which is suspected of having the potential to cause cancer, based on human or animal data.
SYNONYM	Another name for a material.
TLV	Threshold Limit Value. An exposure limit established by the American Conference of Governmental Industrial Hygienists (ACGIH) expressed in milligrams per cubic meter of air (mg / m^3) or parts per million parts of air (ppm). Fibrous materials, like asbestos, are in terms of fibers per cubic centimeters of air (f / cc) or (f / ml). 1 cc = 1 ml.
TLV - C	Threshold Limit Value-Ceiling. The ceiling exposure limit. Concentration not to be exceeded, even instantaneously.
TLV – TWA	Threshold Limit Value – Time Weighted Average. The allowable time weighted average concentration for an 8 – hour day, 40 hour week of working.
TLV – STEL	Threshold Limit Value – Short Term Exposure Limit. The maximum concentration for a continuous 15 minute time period of exposure.
TLV WITH 'SKIN' NOTATION	'Skin' may be written with the TLV or PEL. This indicates that the skin or eyes and the skin exposure must be considered as part of the skin exposure must be considered as part of the total exposure to be kept below the TLV or PEL.
TCC	Tag Closed Cup. A method to test the flashpoint of material.
TOC	Tag Open Cup. A method to test the flashpoint of material.
TRADENAME	A commercial or industrial name for a material, trademark name.
UEL	Upper Explosive Limit or Upper Flammability Limit. The vapor or gas concentration by volume that will burn or explode if an ignition source is present. Highest concentration to produce a fire or explosion. At concentrations greater than the UEL the air mixture is too rich to burn.
VENTILATION	Introducing fresh air to an area, diluting contaminated air or conducting contaminated air away from an area.

CONTAINER LABELS

All containers of hazardous chemical in the work place must be labeled, tagged or marked with the identity of the chemical or product. The label also tells you the name and address of the chemical's manufacturer (or other responsible party).

Container labels must warn you of the particular hazards of the chemical. This warning may be words, pictures or symbols that tell you about the hazards you face.

Chemical warning labels may include this information:

- **IDENTITY OF THE CHEMICAL** – A code number, chemical or trade name.
- **SIGNAL WORD** - Tells you the degree of hazard (CAUTION!, WARNING!, or DANGER!)
- **HAZARD STATEMENT** – Tells you the major hazards you face – "extremely flammable" or "harmful if inhaled".
- **PRECAUTIONS** – what to do to avoid injury or illness; "avoid breathing" or "wash thoroughly after handling".
- **INSTRUCTIONS IN CASE OF EXPOSURE** – First aid information telling you what to do if you're exposed to a chemical.
- **ANTIDOTES** – Measures that can be used by a medical layperson to counteract the effects of chemical exposure.
- **FIRE, SPILL, LEAK INSTRUCTIONS** – How to put out or control fire, clean up leaks or spills.
- **HANDLING AND STORAGE INSTRUCTIONS** – Special handling and storage procedures for chemical containers.

POST TEST

1. Universal Precautions require careful handling of:
   a. All blood and blood products
   b. Unfixed human tissue samples
   c. Biohazardous waste
   d. All of the above

2. HIV infection can be spread by:
   a. Casual contact
   b. Contact with tears
   c. Contact with saliva
   d. Contact with cervical secretions

3. Which is not specifically prohibited by OSHA?
   a. Pipetting my mouth
   b. Breaking sharps
   c. Bending used sharps
   d. Recapping needles using a mechanical device when no alternative is feasible.

4. When might you choose not to use protective equipment?
   a. When obtaining the equipment would take extra time
   b. When the equipment is uncomfortable to use
   c. When using it would prevent delivery of health care services
   d. When you know that a patient does not have Hepatitis or AIDS

5. The OSHA Hazard Communication Standard covers:
   a. The proper use of communication equipment in the work place
   b. The information required for bloodborne pathogens
   c. The communication of information relating to the safe use of hazardous chemicals
   d. The employer's responsibility to communicate to their employees

6. When working in a facility in which you have not previously worked, what is the best method to use in locating the client's MSDS file?
   a. The proper use of communication equipment in the work place
   b. Review the client's Hazard Communication program
   c. There is no best method
   d. Search the department until you locate it

7. You need to know the location of any eye wash station before you need it.
   a. True
   b. False

Return to MedSource

TRAINING ACKNOWLEDGEMENT

I have reviewed the required training programs on Occupational Exposure to Bloodborne Pathogens and Hazard Communications. I have read the handouts, listened to the audiotape and completed the test. I understand that if I have any questions about the material covered or require further information; I should contact the MedSource Safety Officer at (800) 440-1909 or (727) 469-8940.

POLICY AND PROCEDURE ACKNOWLEDGEMENT

I have read the policy and procedure on reviewing the specific Exposure Control Plan for each client's facility in which I work and understand that I must follow the guidelines outlined in their specific plan. I understand my responsibility for obtaining the information I need to safely work with hazardous chemicals in the work place as outlined in the procedure on hazardous chemicals.

Employee Name: ___________________________________

Employee Signature: ___________________________________

Date: ___________________________________