36. Hazard Communication

36.01. Hazard communication addresses the health and physical hazards associated with essentially all the chemical and chemical products found on the job site. This hazard communication program is designed to make all employees aware that most, if not all, job site chemicals have a downside if improperly used, spilled, transferred or stored. The hazard may be a physical hazard such as an explosion or a health hazard such as cancer.

36.02. Definitions:

36.02.01. Article: A manufactured item which is formed to a specific shape or design during manufacture; has end use function(s) dependent in whole or in part upon its shape or design during end use; and does not release, or otherwise result in exposure to a hazardous chemical under normal conditions of use.

Note: Articles are exempt from the Hazard Communication regulation.

36.02.02. Hazardous Chemical: any chemical that is a physical or a health hazard.

36.02.03. Physical Hazard: a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric (will ignite spontaneously in air at a temperature of 130°F or below), unstable (reactive) or water-reactive.

36.02.04. Health Hazard: a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. To clarify the difference between acute and chronic, acute effects occur rapidly as a result of short term exposure and are of short duration. Chronic effects occur as a result of long term exposure and are of a long duration. These terms can overlap. For example, a mild heart attack, with no pain severity, would be termed acute within the first two hours, yet if there were long term effects, it would be termed chronic.

36.02.05. Almost all chemicals are considered hazardous -- a steel beam or metal casting does not immediately come to mind as a hazardous chemical. Without a material safety data sheet (SDS) and or a label, one cannot assume a chemical is safe.

36.02.06. Even filters for your equipment will have an SDS. This is because, until it is placed in your equipment, it still has a downstream use and therefore until it is used it is not an article by definition.

36.02.07. Also exempt from the hazard communication regulation are chemicals which are regulated by other government agencies such as hazardous waste, food, tobacco products, and normal consumer products that are used in the workplace in the same manner, frequency and duration as normal consumer use and produce the same or less exposure as normal consumer use.

36.03. Chemical Types as Related to Health. Below is a list of categories of hazardous chemical types as they relate to health:

36.03.01. Carcinogen or potential carcinogen as determined by the International Agency for Research on Cancer (IARC) or a carcinogen or potential carcinogen as listed in the

Annual Report on Carcinogens published by the National Toxicology Program (NTP), latest edition, or as regulated by OSHA as a carcinogen.

36.03.02. Corrosive: A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. This is not to be confused with, and does not refer to, action on inanimate surfaces.

36.03.03. Highly Toxic: A chemical which is lethal to test animals under specific doses and time limits. Some tests require ingestion, some inhalation, some skin exposure, and some implantation.

36.03.04. Irritant: A chemical which is not a corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.

36.03.05. Sensitizer: A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure.

36.03.06. Toxic: A chemical which is lethal to test animals under specific doses and time limits. A toxic chemical has a greater dose per weight than a Highly Toxic chemical.

36.04. Target Organ Effects:

36.04.01. Hepatotoxins: Chemicals which produce liver damage

36.04.02. Signs & Symptoms: Jaundice; liver enlargement

36.04.03. Chemicals: Carbon tetrachloride; nitrosamines

36.04.04. Nephrotoxins: Chemicals which produce kidney damage

36.04.05. Signs & Symptoms: Edema; proteinuria

36.04.06. Chemicals: Halogenated hydrocarbons; uranium

36.04.07. Neurotoxins: Chemicals which produce their primary toxic effects on the nervous system

36.04.08. Signs & Symptoms: Narcosis; behavioral changes; decreased motor function

36.04.09. Chemicals: Mercury; carbon disulfide

36.04.10. Agents which act on the blood or hemotopoietic system: decrease hemoglobin function; deprive the body tissue of oxygen

36.04.11. Signs & Symptoms: Cyanosis; loss of consciousness

36.04.12. Chemicals: Carbon monoxide; cyanides

36.04.13. Agents which damage the lungs: chemicals which irritate or damage the pulmonary tissue

36.04.14. Signs & Symptoms: Cough; tightness in the chest; shortness of breath

36.04.15. Chemicals: Silica; asbestos

36.04.16. Reproductive toxins: Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis)

36.04.17. Signs & Symptoms: Birth defects; sterility

36.04.18. Chemicals: Lead; DBCP

36.04.19. Cutaneous hazards: Chemicals which affect the dermal (skin) layer of the body

36.04.20. Signs & symptoms: Defatting of the skin; rashes; irritation

36.04.21. Chemicals: Ketones; chlorinated compounds

36.04.22. Eye hazards: Chemicals which affect the eye or visual capacity

36.04.23. Signs & Symptoms: Conjunctivitis; corneal damage

36.04.24. Chemicals: Organic solvents; acids

36.05. Hazard Determination

36.05.01. The determination of chemical hazards is primarily the responsibility of the manufacturer and or importer. Should hazard information be received from a source other than the manufacturer, it shall be placed in this Hazard Communication Plan.

36.05.02. Labels: A label is any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

36.05.03. All chemicals used in or on the job site shall be properly labeled using the manufacturer's labeling system. Labels shall not be removed or defaced. If a chemical is not labeled, it shall not be used with the following exception:

Note: Portable containers into which hazardous chemicals are transferred from labeled containers need not be labeled if they are for immediate use of the employee who makes the transfer. To simplify, one may take a hazardous chemical (example: paint) out of a labeled container and put it into a smaller, unlabeled container (example: paint tray), for immediate use. "Immediate use" is defined as being under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

36.05.04. The label shall clearly state:

36.05.04.01. The identity of the hazardous chemical(s).

36.05.04.02. The appropriate hazard warning.

36.05.04.03. The name and address of the manufacturer.

36.05.04.04. Appropriate hazard warnings would contain:

36.05.04.05. Instruction for proper and safe use. This would include obvious information such as, "do not ingest" or "do not spray in eyes" as well as less obvious information such as, "caustic, wear rubber gloves"

36.05.04.06. First aid instructions

36.05.04.07. Fire containment instructions

36.05.04.08. Storage

36.05.04.09. Disposal instructions

36.05.04.10. Treat empty containers of hazardous materials as if they were full. Proper disposal is a must.

36.06. Safety Data Sheets (SDS)

36.06.01. It is required that safety data sheets (SDS) be maintained for all hazardous chemicals in inventory. The information contained on SDS shall be readily accessible to the individual(s) using the products and we will share that information with whom we may work.

36.06.02. Chemicals come in all forms of matter: liquid, solid, and gas; they can be found as sludge, vapor, mist, dust, etc..

36.06.03. How would one know what a chemical smelled or looked like? How would one be able to administer first aid quickly? Where would you find the proper procedure for cleaning up a spill? Where would you find a listing of symptoms caused by inadvertent exposure to a chemical or chemical mixture? Where would you find firefighting procedures? These questions and many others are answered on Safety Data Sheets (SDS).

36.06.04. The Designated Safety Authority will be notified immediately if a chemical is in inventory without an SDS. Should that event occur, the Designated Safety Authority will submit a letter to the manufacturer or distributor requesting an SDS.

36.06.05. Personnel utilizing a new chemical product will review the SDS before initial use. New chemical products will be added to our List of Hazardous Chemicals.

36.06.06. While there is no specific format, the following information will be found on an SDS:

36.06.06.01. Identity (chemical or common name) which will be the same as on the label and on the required list of hazardous chemicals.

36.06.06.02. Hazardous chemical ingredients -- both the chemical and common name(s).

36.06.06.03. Physical and chemical characteristics such as boiling point, flash point, solubility in water, etc. Two of the most important items to be found in this category are appearance and odor. It is important to be able to identify chemicals rapidly and appearance and odor are of great value in initial determination.

36.06.06.04. Physical hazards which would include the potential for explosion, fire, and reactivity. Also included in this section are the flash point and auto ignition temperature. Special firefighting procedures are also noted and should be carefully studied by potential users.

36.06.06.05. Health hazards which include first aid procedures, signs and symptoms of exposure, medical dangers, exposure limits, routes of entry, precautions for safe handling, potential carcinogen information, and whether professional medical response is required after a mishap.

36.06.06.06. Chemical reactivity which includes stability, incompatibility with

other chemicals, hazardous decomposition products and hazardous polymerization. Special conditions to avoid may also be included.

36.06.06.07. Spill and/or leak procedures which include approved waste disposal methods.

36.06.06.08. Special handling information which includes appropriate hygienic practices, protective equipment requirements, and needed ventilation.

36.06.06.09. Special precautions which would include applicable control measures known to the manufacturer and/or importer. Should it be determined there are special advisories that pertain to our company, the advisories will be placed in this section of the SDS.

36.06.06.10. The name, address and telephone number as well as the date of preparation or revision shall be included.

36.06.06.11. Employees are not required to memorize nor expected to know all the information contained on an SDS; employees are expected to know where to find information when it is needed and to ask questions to clear up any uncertainties of the chemicals used in the workplace.

36.06.06.12. Particular attention should be paid to:

36.06.06.12.01. Identification and detection of a hazardous chemical. This would include odor and color as well as container labeling.

36.06.06.12.02. Physical hazards of the hazardous chemical. This information would include the potential for fire, explosion, and reactivity. Reactivity, in chemistry, is defined as “the reciprocal action of chemical agents upon each other; chemical change.” The SDS will indicate proper procedures for fire extinguishing, including special precautions, if needed.

36.06.06.12.03. The health hazards of the chemical. Routes of entry are noted. A chemical may enter the body through ingestion, inhalation, absorption, or injection. Signs and symptoms are indicated such as irritation of the skin, redness of the eyes, nausea, etc. Health hazards are defined as acute, chronic or both. Carcinogenicity is indicated. First Aid procedures are explained as well as notes to a treating physician, if appropriate.

36.06.06.12.04. Methods to lessen or prevent exposure are explained. The need for protective equipment such as rubber gloves, disposable suits, respirators, goggles, etc. is explained. Hygienic work practices are re-enforced such as keeping the product away from food and washing hands after use.

36.06.06.12.05. The SDS has a wealth of information which is to be made available to all employees and to anyone who wants to review them. There is nothing secret about an SDS; its whole purpose is the dissemination of information. It provides awareness.

36.06.06.12.06. Should an employee not be able to read English, the information contained on SDS and labels (and any other warning sign) will be given orally or written in that employee's language. The actual labels, SDS, and all warning signs shall be written in English.

36.07. List of Hazardous Chemical Products

36.07.01. A list will be maintained of all hazardous chemical products in our inventory. This list will be arranged alphabetically by trade or common name and be readily available to our employees. This will also be the order in which the SDS is filed.

36.08. Training and Documentation

36.08.01. The designated safety authority is responsible for employee training and will ensure that all new employees attend training on our Hazard Communication Plan prior to initial work assignment. Training shall include:

36.08.01.01. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area. The primary method to detect the presence of a release is sight and smell. As mentioned above, the appearance and odor of a hazardous chemical can be found on the SDS for that chemical.

36.08.01.02. Physical and health hazards of the chemicals in the workplace. This information is found on the appropriate SDS.

36.08.01.03. Measures to take to protect the employee from chemical hazards. This Hazard Communication Program, the specific SDS, as well as oral and hands on training and instruction provide the basis for measures to protect one's self. Where required protective equipment will be provided. Never minimize the value of protective safety equipment. For example, the use of relatively inexpensive eye protection could easily save your eyesight.

36.08.01.04. Each employee will sign a form indicating that they have attended training and understand the above.

36.08.01.05. Annually, all employees will receive refresher training to ensure that awareness is maintained. Furthermore, with the introduction of each new hazard, not necessarily each new chemical, training will be given with specific emphasis on emergency procedures as noted on the SDS. This training will include procedures for handling leaks and spills, personal protection equipment if required, decontamination procedures, etc.

36.09. 12.248. Non-Routine Tasks

36.09.01. Prior to performing a non-routine task, an employee will be given information by a competent person or supervisor concerning the hazardous chemicals to which he may be exposed. This information will include:

36.09.02. Specific chemical hazards

36.09.03. Protective/safety measures the employee may take.

36.09.04. Measures taken to lessen the hazards including ventilation, respirators, presence of another employee and emergency procedures.

36.10. Chemicals in Unlabeled Pipes

36.10.01. Should work activities be performed in areas where chemicals are transferred through unlabeled pipes, the employee shall be informed by the competent person or supervisor of:

36.10.01.01. The chemical in the pipes.

36.10.01.02. Potential Hazards.

36.10.01.03. Safety precautions to be taken.