Glenn Research Center, Environmental Programs Manual

Chapter 23 - HAZARD COMMUNICATION POLICY

NOTE: The current version of this Chapter is maintained and approved by the Environmental Management Office (EMO). The revision date for this chapter is December 2003. If you are referencing paper copies, please verify that it is the most current version before use. The current version is maintained on the Glenn Research Center (GRC) Intranet at http://osat-ext.grc.nasa.gov/emo/pub/epm/epm-contents.pdf. Approved by: EMO Chief, Michael Blotzer {mailto: Michael.J.Blotzer@nasa.gov}.

PURPOSE

The Glenn Research Center (GRC) Hazard Communication (HAZCOM) Policy was established to formalize the methods of communicating information on hazardous chemicals and to ensure that correct and complete information is available to employees. It is not only the intent of GRC to fully comply with the Occupational Safety and Health Administration (OSHA) rules, but also to improve the overall safety of the center. This chapter contains general information about and establishes minimum requirements for the safe handling and use of hazardous chemicals.

APPLICABILITY

The GRC HAZCOM Policy is applicable to all organizational elements of the GRC at Lewis Field and the Plum Brook Station, all tenant organizations and all resident support services contractors.

AUTHORITIES

- 29 Code of Federal Regulations 1910.1200, Hazard Communication Standard for General Industry, as revised
- 29 Code of Federal Regulations 1926.59, Hazard Communication Standard for Construction, as revised
- Executive Order 12196, Occupational Safety and Health Provisions for Federal Employees

BACKGROUND

On July 25, 1986, OSHA ruled that, pursuant to Executive Order 12196, all Federal agency heads were required to comply, by May 23, 1988, with the OSHA Hazard Communication Standard as set forth in 29 Code of Federal Regulations (CFR) 1910.1200. This chapter prescribes the Center's implementation of those directives.

SCOPE

The GRC HAZCOM Policy applies to GRC employees, tenant employees and resident support services contractor personnel who may be exposed or may expose others to hazardous chemicals under normal conditions of use or in a foreseeable emergency at Lewis Field, the Plum Brook Station, or any associated off-site facility. A HAZCOM Program has been established to assure Center compliance with regulations. The Environmental Management Office (EMO) administers the HAZCOM Program. Implementation of the program is the responsibility of each supervisor.

POLICY

It is GRC policy that employee health and safety are the highest priority. Therefore, all GRC, tenant and resident support services contractor employees involved in handling, storage, transportation, use, production, or disposal of chemicals will be informed that their lives or health may depend on their knowledge of the chemicals they work with and on their taking appropriate measures to protect themselves and minimize exposure to hazardous chemicals. As a multi-employer worksite, each employer at GRC must have its own Hazard Communication Program that describes how they will share information with other employers and employees regarding MSDSs and access to them, precautionary measures and any labeling systems used at the workplace.

DEFINITIONS

For the purpose of the hazard communication policy, the following significant terms are defined:

Carcinogen

A chemical is considered to be a carcinogen if it has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen; or if it is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or if it is regulated by OSHA as carcinogen.

Chemical Inventory

A list of hazardous chemicals known to be present in the workplace and work areas. This list is maintained as part of the Chemical Management Systems database.

Employee

A GRC, tenant, or resident support services contractor employee who may be exposed to hazardous chemicals in his or her assigned work area under normal operating conditions or in foreseeable emergencies.

Flammable:

- Aerosol

  An aerosol that yields a flame projection exceeding 18 inches at full valve opening, or a flashback at any degree of valve opening.

- Gas

  A gas that at ambient temperature and pressure forms a flammable mixture with air at a concentration of 13% by volume or less; or a gas that at ambient temperature and pressure forms a range of flammable mixtures with air greater than 12% by volume, regardless of the lower limit.

- Liquid

  Any liquid having a flash point below 100°F (37.8°C), except any mixture having components with flash points of 100°F (37.8°C) or higher, the total of which make up 99% or more of the total volume of the mixture

- Solid

  A solid that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard.

Hazardous chemical

Any material that because its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

Hazardous material

Any material defined as hazardous under 49 CFR 171.8 which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and which has been so designated. Such material has one or more toxic, flammable, corrosive, or reactive properties. All materials, listed under Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), are included.

Hazard Communication Program

Written document that describes how an employer or facility complies with the requirements of the Federal Hazard Communication Standard.

Hazard Communication Standard (29 CFR 1910.1200 for General Industry, 29 CFR 1926.59 for Construction))

Federal regulation developed by OSHA to reduce illness and injury caused by chemical hazards in the workplace; requires evaluation of chemical hazards and communication of hazard information to both employers and employees.

Health hazard

A chemical for which there is scientifically established evidence that acute or chronic health effects may occur in exposed employees.

Highly toxic

A chemical falling within any of the following categories:

- A chemical that has a median lethal dose (LD50) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.
- A chemical that has a median lethal dose (LD50) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs with 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
- A chemical that has a median lethal concentration (LC50) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams/liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Material Safety Data Sheet (MSDS)

A document, provided by the manufacturer or importer of a hazardous chemical or prepared by Glenn researchers, that identifies a hazardous material and provides information about the physical and health hazards associated with it. Although MSDSs vary in both format and content, all must contain the following information: product identification; manufacturer's name and address; hazardous ingredients information; physical and chemical characteristics; fire and explosion hazard data; reactivity data; health hazard data; precautions for safe handling and use; and control measures.

Occupational Safety and Health Administration (OSHA)

A federal agency responsible for establishing and enforcing standards for exposure of workers to harmful materials in industrial atmospheres, and other matters affecting the health and well-being of industrial personnel.

Physical hazard

A chemical or product for which there is scientifically established evidence that the chemical is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive), or is water reactive.

Toxic

A chemical falling within any of the following categories:

- A chemical that has a median lethal dose (LD50) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 g each.
- A chemical that has a median lethal dose (LD50) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs with 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.
- A chemical that has a median lethal concentration (LC50) in air of more than 200 parts per million but not more than 2,000 parts per million by volume or less of gas or vapor, or more than 2 milligrams/liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 g each.

Work Area

A room, laboratory, warehouse, or other defined area within the Lewis Field Center, the Plum Brook Station, or an associated off-site facility wherein hazardous chemicals are used, stored, or transported, and where employees are present.

RESPONSIBILITIES

The Center Director

Provides continuing support for Center-wide hazard communication.

Chief, Environmental Management Office

- Appoints a technically qualified individual as the Hazard Communication Officer to carry out the responsibilities set forth in the HAZCOM Program. Assures the availability of resources necessary for the establishment, execution, and maintenance of the HAZCOM Program.
- Assigns organization responsibility and allocates resources to ensure that all parts of 29 CFR 1910.1200 are implemented and maintained.

Hazard Communication (HAZCOM) Officer - Chemical Management Team (CMT)

- Establishes, administers and maintains the GRC HAZCOM Program in coordination with all appropriate Glenn Research Center personnel.
- Ensures that the GRC training, inventory, MSDS's, and labeling requirements as specified in 29 CFR 1910.1200 are in place and maintained.
- Ensures that record keeping requirements are established and maintained as required by 29 CFR 1910.1200.
- Reviews the HAZCOM Program for compliance with OSHA requirements.

Organization Development and Training Office

- Implements the training requirements of 29 CFR 1910.1200 in conjunction with the HAZCOM Officer.
- Provides suitable certificates to employees upon completion of scheduled training by such employees.
- Establishes and maintains the official training records for NASA employees as required in 29 CFR 1910.1200.

Employees (civil servants, SSCs, tenant organizations)

- Read and understand MSDS for chemicals in assigned work area.
- Contact CMT if MSDS is not available.
- Contact supervisor or CMT if employee does not understand MSDS.
- Ensure all chemicals containers are labeled to identify contents and hazards.
- Attend HAZCOM Training sessions.
- Follow all proper procedures for purchasing, storing, using, and disposing of hazardous chemicals. Employees are reminded not to buy more chemicals than they can possibly use in their project or to stockpile material.

Supervisors (civil servants, SSC's, tenant organizations)

Whose functional operations and work areas involve the use and/or storage of hazardous chemicals where employees are present.

- Ensure that their employees are appropriately trained to handle all hazardous chemicals in their work areas.
- Ensure that all of the information as specified in 29 CFR 1910.1200 is available to each employee.

Glenn Safety Office

Ensures that appropriate warning placards and/or signs and labels are provided or arranged for and in place at designated areas as necessary.

Resident Contractor Contracting Officer's Technical Representative (COTR)

Ensure that each resident support service contractor has a Hazard Communication Program and that all elements are in place and followed and all affected personnel are trained.

Construction Contractor COTR's

- Ensure construction contractor has an approved Health and Safety Plan (HASP) that includes Hazard Communication requirements as specified in 29 CFR 1926.59.
- Provide GRC chemical information as required.
- Ensure MSDS and inventory lists are available on site in the work area.

Plum Brook Management Office

- Ensures compliance with the applicable provisions of this chapter by the Plum Brook staff, all tenant organizations and other resident and nonresident contractors.
- Coordinates with the HAZCOM Officer on matters pertaining to 29 CFR 1910.1200 and 29 CFR 1926.59.

REQUIREMENTS

All aspects of GRC HAZCOM will assure compliance as specified in 29 CFR 1910.1200 and 29 CFR 1926.59. The scope shall include, but is not limited to:

- A written HAZCOM Program to be maintained and reviewed annually by the GRC HAZCOM Officer. The requirements of 29 CFR 1910.1200 and 29 CFR 1926.59 and the programs in place at GRC to meet the requirements are defined in the written HAZCOM Program.
- A MSDS Plan, which specifies that the master MSDS files are kept, maintained, and distributed by CMT and MSDSs are available in all work areas through the GRC MSDS on-line web page. MSDSs can be requested through CMT.
- A Hazardous Chemical Labeling Plan which includes the chemical name and appropriate hazard warning, including target organs to ensure that containers of hazardous chemicals are labeled properly. Labels can be requested through the CMT.
- A GRC training plan to ensure that employees with routine exposure to hazardous chemicals are aware of the OSHA Standards, the hazards of the chemicals that they work with and the ways to protect themselves from those hazards. CMT provides general training classes at least six times a year. Specific chemical training is available through the CMT.
- A Chemical Inventory Plan which includes the tracking of chemicals at GRC, bar coding, and the maintenance of the inventory. Employees who use chemicals must submit a Chemical Inventory Usage Form NASA C-3032 to CMT whenever the inventory is changed.
- The Construction Contractor COTR require contractors to submit their HAZCOM programs, MSDSs (typically included in the Health and Safety Plan) and certification statements from their subcontractors stating that they have a HAZCOM program before they are allowed to begin work. COTRs will supply the CMT with the MSDS's and provide the contractor with GRC specific chemical information.
- A hazard assessment plan which includes how the hazards of chemicals are determined, what measures are to be taken to protect GRC employees from those hazards, and how GRC will be working to reduce the hazards in each work area.

GENERAL GUIDELINES

General Information

It is prudent practice to consider all chemicals as hazardous until proven otherwise. Chemicals occur in all three physical states, solid, liquid, or gaseous and can be dangerous in any or all states. Information on the physical and chemical characteristics of any chemical can be obtained from the manufacturer's MSDS and also from the label found on the container.

All hazardous chemicals must be appropriately labeled. If, during use, the labels become damaged or defaced, the containers should be relabeled with information from the appropriate MSDS. MSDS's are located on the GRC web page at http://msds.grc.nasa.gov/. Employees are required to become familiar with the contents of the MSDS for each chemical that is used. Copies of MSDS's may be requested from the CMT if not available from the GRC web page.

In general, hazardous chemicals should be used only in well ventilated fume hoods (see Chapter 16) and using appropriate protective clothing, goggles or face shields, impervious gloves, and respirators (see Chapter 12) when required. Eating and smoking in the workplace is not permitted, and one should follow good personal hygiene practices by washing thoroughly as soon as practical after handling any chemicals.

Flammable Chemicals

Flammable chemicals shall be kept away from ignition sources, open flames, or heat. Containers shall be bonded to the building grounding system when transferring flammable materials to a secondary container or another system, such as a test facility.

Flammables may be stored only in properly labeled metal safety cans that are equipped with flame arresters, and placed into flammable storage cabinets. At no time should flammables be stored in a basement area or a below-grade location. This policy is in compliance with the National Fire Protection Association (NFPA) Codes. Explosion-proof electrical fixtures shall be used in areas where flammables are stored or handled. (See NFPA Code 70 National Electrical Code for specific requirements.)

Toxic and Carcinogenic Chemicals

- Only minimum quantities of toxic materials, an amount sufficient for one work shift, should be present in the work area. Consult the HAZCOM Officer for advice on determining quantities permitted in the work area.
- Storage container labels for toxic and carcinogenic chemicals should also list the appropriate warning, such as "high chronic toxicity or cancer-suspect agent." Highly chronic toxins or carcinogenic chemicals (see Definitions) should be stored in well-ventilated areas and in unbreakable, chemically resistant secondary containers.
- Storage areas for highly acute or chronic toxicity materials should be marked with a proper hazard warning sign, have limited access, and are adequately ventilated. An inventory of the toxic chemicals and those regulated as carcinogens should be maintained and posted at the site.
- The MSDS for material being used will describe the necessary precautions to protect you and others from unnecessary exposure. These precautions should be followed carefully. Documents referred to in the References section provide explanations of the information in the MSDSs.

Reporting Emergencies

Any person who becomes aware of any spill or the inadvertent or unauthorized release of hazardous materials to the environment must dial 911 from an internal lab phone (216-433-2088 from a cellular or pay phone) to report the incident. At no time should anyone try to cleanup a spill by himself or herself.

RELATED CHAPTERS

Chapter 12, Respiratory Protection Program
Chapter 16, Local Exhaust Ventilation
Chapter 22, Acquisition of Hazardous Chemicals and Materials
Chapter 24, Chemical Hygiene Policy
Chapter 33, Bloodborne Pathogens
Chapter 35, Occupational Safety and Health Administration Regulated Materials Program
HAZCOM Program

RECORDS

Maintained by the Chemical Management Team

- Material Safety Data Sheets (MSDS)
- Chemical Inventory

Maintained by Organization Development and Training Office

- Training Records for civil servants

Maintained by Support Service Contractors

- Training Records for affected employees

Maintained by Tenant Organizations

- Training Records for affected employees

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