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1.0 PURPOSE AND SCOPE
(7.1.1, 7.1.2, 7.1.3, 7.1.5, 7.1.6, 7.1.7)

This procedure describes the processes that are used to communicate hazardous material information to all personnel who work with hazardous materials during any activity in the tank farms. It meets all of the requirements and criteria of the Occupational Safety and Health Administration’s (OSHA) 29 CFR 1910.1200, “Hazard Communication,” safety and health regulation for general industry and 29 CFR 1926.59, “Hazard Communication,” safety and health regulation for construction. These standards are referenced requirements of 10 CFR 851, “Worker Safety and Health Program.”

The procedure discusses the documentation requirements for the Globally Harmonized System (GHS) of classification and labeling of chemicals, the move from Material Safety Data Sheets (MSDS) to Safety Data Sheets (SDS), the new elements of the manufacturer’s primary label, and both MSDS-compliant and GHS-compliant Hanford Hazard Labels (HHL). We should not expect to receive MSDSs as the transition period has ended. However, we still have legacy products onsite. Therefore, products backed by an MSDS, as well as an SDS, are available for use.

The Hazard Communication Procedure applies to all Tank Operations Contractor (TOC) personnel and subcontractors, except for personnel who work in laboratories that have a written safety program, which complies with 29 CFR 1910.1450, “Occupational Exposure to Hazardous Chemicals in Laboratories.”

1.1 Exempt from Labeling

The following chemical product groups that are used at the Hanford site are not subject to labeling requirements of the OSHA “Hazard Communication” (HAZCOM) standard (29 CFR 1910.1200), but are subject to other federal labeling requirements and/or may need labeling as a “best management practice” to ensure employee awareness and will be in compliance with this program:

- Any pesticide as such term is applied in the Federal Insecticide, Fungicide, and Rodenticide Act (7 USC 136), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency (EPA);

- Any chemical substance or mixture as such terms are defined in the Toxic Substances Control Act (15 USC 2601), such as asbestos or polychlorinated biphenyl (PCBs), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency (EPA);

- Any consumer product or hazardous substance as those terms are defined in the Consumer Products Safety Act (15 USC 2051) and the Federal Hazardous Substances Act (15 USC 1261) respectively, when subject to a consumer product standard or labeling requirement of those Acts, or regulations issued under those Acts by the Consumer Product Safety Commission.

- Agricultural or vegetable seed treated with pesticides and labeled in accordance with the Federal Seed Act (7 USC 1551) and the labeling regulations issued under the Act by the Department of Agriculture.
1.2 Exempt from the Standard

This procedure does not apply to the following:

- Hazardous wastes/substances regulated by the Environmental Protection Agency under the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation, and Liability Act, which includes the chemical and radiological wastes in tank farms

- Personal use items, such as foods/beverages, consumer products, cosmetics, drugs, and first aid supplies

- Manufactured articles that will not release a hazardous chemical under normal or anticipated conditions of use
  - Exception: For the purposes of compliance with OSHA HAZCOM, lead-acid batteries (or other “wet cell” batteries containing a liquid hazardous electrolyte, which could leak, spill or break during normal conditions of use and/or in an emergency, are not to be considered “manufactured articles”. Dry cell (e.g., zinc-carbon, alkaline) and nickel-cadmium batteries may be considered “articles.”

- Wood or wood products
  - Exception: Wood or wood products that have been treated with hazardous chemicals (as defined in Appendix A of the HAZCOM standard) and wood that may be sawed or cut, generating dust, are not exempt from coverage.

- Ionizing and non-ionizing radiation hazards
  - Exception: When the product also contains substances possessing toxic properties, it will be regulated as a chemical substance. (Examples: solutions of radioactive standards in acids.)

- Tobacco or tobacco products

- Biological hazards

- Potable and non-potable water supplies.

2.0 IMPLEMENTATION

This procedure is effective on the date shown in the header.

3.0 RESPONSIBILITIES

(7.1.6)

3.1 Line Management

- Promotes the selection and use of chemicals that minimize hazards.
• Ensures that current Material Safety Data Sheets (MSDSs) and Safety Data Sheets (SDSs) are readily accessible to employees in their work area(s) during each shift.

• Ensures that employees receive specific information and training on hazardous chemicals in their work areas at the time of their initial assignment and additional training whenever new products or increased hazards are introduced.

• Ensures that Employee Job Task Analyses (EJTA) are initially completed for employees and their EJTAs are updated when new products are introduced into the workplace.

• Ensures that employees are informed of chemical hazards for non-routine tasks.

• Ensures that the required product labels are in place and remain in legible condition.

• Provides chemical mixture profile information to the SDS/MSDS Database Administrator, describing the method of how the product was prepared and the composition of the mixture, including relevant SDS/MSDS numbers.

• Makes hard copies of SDS/MSDSs available to any subcontractor who may be lacking internet access.

NOTE: Onsite SDS/MSDSs are available to all Hanford employees through the Hanford SDS/MSDS website: http://www7.rl.gov/msds/msds_search.aspx. Offsite SDS/MSDSs are available through the website: http://msnet.ms.rl.gov/msds/.

• Ensures that access to the SDS/MSDS database is available through the Hanford Local Area Network (HLAN) to workers where exposure to hazardous chemicals is possible.

• Informs vendors and subcontractors of the hazards of the workplace, emergency exits, emergency procedures, and how to access SDS/MSDSs.

3.2 SDS/MSDS Database Administrator

Completes a form, giving the material a unique SDS/MSDS number.

3.3 Industrial Hygiene

NOTE: The Hazard Communication Program Subject Matter Expert (SME) serves as the interpretive authority for this procedure.

• Reviews hazardous material purchase requests.

• Identifies and assesses risks related to the use of hazardous products.

• Promotes the selection of safer products, as appropriate, and considers limiting the application of materials, where warranted.

• Evaluates intended use and storage for appropriate health and safety practices and recommends improvements and exposure monitoring as indicated.
• Reviews proposed products that contain carcinogens jointly with the Carcinogen Control Procedure SME.

3.4 Training
(7.1.4)

Hazard communication training at WRPS provides employees and contractors with effective information on hazardous chemicals in their work area at the time of initial assignment, and whenever a new chemical hazard is introduced into their work area. This information includes the chemical and physical properties of chemicals.

• All employees receive Hanford General Employee Training (HGET). Additionally, work area training is specific for chemicals in use.

• Facility managers ensure that employees assigned to the building receive special training that covers products in use in the building.

The WRPS Training Manager ensures employee training is provided to comply with OSHA Hazard Communication training requirements. This training may include, but is not limited to:

• Chemical Hazards Awareness Training (351524)
• Chemical Hazards Awareness Training – Refresher (351542)
• Tank Operations Contractor Hanford General Employee Training, TOCGET (358001)
• 24-Hour TSD Hazardous Waste (031110)
• 40-Hour Hazardous Waste Worker (031220)
• Tank Farm Orientation/Tank Farm Facility Emergency Hazard Identification Checklist (FEHIC) 350761
• Tank Farm Facility Emergency/Hazard Identification Checklist (FEHIC) (03E060)
• 242-A Evaporator Facility Orientation (350540)
• 242-A Evaporator FEHIC (03E096)
• 222-S Laboratory Complex Orientation and FEHIC (000071).

4.0 PROCEDURE
(7.1.1, 7.1.2, 7.1.3, 7.1.5, 7.1.6)

4.1 Purchasing Potentially Hazardous Materials

Requester
1. Ensure an appropriate storage location has been identified for the chemical in accordance with TFC-ESHQ-S_IH-C-47.

2. Contact the Chemical Management Point of Contact (POC) for assistance at (509) 373-0998.

Safety and Health
3. Review purchase requests, as indicated in Section 3.2. (See Attachment A)

4. Communicate appropriate safety and health recommendations and requirements to the requesting organization, and include them in the job hazard analysis.

Requesters
Industrial Hygiene 6. Communicate information identified in the hazard assessment and at the job hazard analysis, including any materials that may be exempt from this procedure.

NOTE: Since June 1, 2015, OSHA has required that only SDSs be shipped with products. WRPS requires the latest received SDS/MSDS to be on file with the SDS/MSDS Administrator. While SDSs must accompany received products, their labels were not required to be fully GHS compliant until December 1, 2015. WRPS still accepts products with MSDSs and/or non GHS-compliant labels.

4.2 Receiving Hazardous Materials

Material Coordinator 1. Receive hazardous material shipment in accordance with TFC-ESHQ-S_IH-C-47.

Requesting Organization Management 2. Verify the SDS/MSDS for a product is listed in the organization’s chemical inventory list.

3. Complete the following sub-steps, if an SDS/MSDS is unavailable:
   - Stage the material with a label stating: “No SDS/MSDS available, do not use.”
   - Contact material coordinator, Industrial Hygiene, or the Hazard Communication Program SME to clarify the status of the material or product, as necessary.

4. Review the original product label, verifying its legibility and that it includes the following required information:
   - Name and address of the manufacturer, importer, or other responsible party
   - Identity of the material (i.e., product name)
   - Associated health and safety hazards, including target organs.

5. Take the following actions when an incoming container label is illegible or lacks the required information:
   - Stage the product with a label stating “Illegible or missing label, do not use”
   - Request a label from the manufacturer/distributor.

4.3 Providing Right-to-Know Information

NOTE 1: Assistance with obtaining chemical inventories is available from the Chemical Management POC or the Hazard Communication Program SME.
The inventory of a chemical storage location must include:
4.4 Maintaining Original Material Container Label Information

Requesting Organization Management

1. Perform periodic reviews of hazardous material container labels used or stored in the facility or on a project.

2. Review labels for legibility and content.

4.5 Hanford Hazard Label (HHL)

NOTE: There are products presently onsite with labels that are a hybrid of the OSHA 1994 label and the OSHA 2012 label. This may occur when the manufacturer is still transitioning to full compliance with OSHA.

Hanford has established two container labels for use on secondary containers. The MSDS-based Hanford Hazard Label (see Attachment B) is used with products supported by a MSDS. The SDS-based Hanford Hazard Label (see Attachment C) is used for products supported by a SDS.

These labels can be used for mixtures or dilutions that were prepared onsite, or for primary containers to replace missing or illegible labels.

Original containers found with improper, inadequate, or illegible information must be quarantined until a replacement label can be obtained from the vendor.

4.6 Transferring Hazardous Material to a Secondary Container

NOTE 1: When a product is transferred from its original container to a secondary container for longer than immediate use, a Hanford Hazard Label (HHL) must be affixed to the secondary container in accordance with either Attachment B (MSDS) or Attachment C (SDS). All fields must be completed. To be fully compliant all information fields must be filled in.

NOTE 2: It is important to remember that the MSDS based label uses the rating system for NFPA 704. Therefore, a low health risk would be 0 and a high health risk would be a 4. For a SDS based label the rating is reversed with a high health risk being a 1 and a low health risk being a 4.

When transferring a product to a secondary container, you need to label the secondary container, unless for same shift use. Here are options for obtaining secondary container labels:

- For “Facilities” order labels by contacting: \(^{\text{WRPS Help Desk or call 376-1234.}}\)

- For “Tank Farms” order labels by contacting: \(^{\text{WRPS Sign Shop or call 373-6846.}}\)

- The WRPS Sign Shop is our primary source of HHL labels. If unsuccessful in finding a prepared label, the MSC Sign Shop may be used.
To order labels from the MSC Sign Shop use the following link:
http://msc.ms.rl.gov/ServiceCatalog/c.cfm/signshop/ (See Attachment D.)

To order a secondary label, it is important to specify whether the product comes with a SDS or MSDS. The SDS label information differs from the MSDS label. One difference with the SDS label is it requires pictogram(s). If assistance is required, contact the WRPS Hazard Communication Program SME at 373-5875.

4.7 Disposition of Unlabeled Containers

- Employee 1. Report to Manager/Supervisor.
- Manager/Supervisor 2. Report to Building Administrator.
- Safety and Health 5. Characterize the material through laboratory analysis prior to disposal. Contact the Hazard Communication SME for assistance, as needed.

5.0 DEFINITIONS

Chemical Asphyxiant. A substance that chemically interferes with the body’s ability to take up and transport oxygen.

Developmental Toxin. Anything that causes adverse effects on the developing organism and may occur anytime from conception to sexual maturity.

Hazardous Chemical. Any chemical that is a physical or health hazard.

Highly or Acutely Toxic Chemicals. Chemicals which are often referred to as poisons. They are considered to be acutely toxic through ingestion, inhalation, or absorption.

Irritant. A chemical that causes irritation to the skin and/or mucous membrane.

Mutagen. This is a physical or chemical agent that changes the genetic material, usually DNA, of an organism and increases the frequency of mutations above the natural background level. As mutagens can cause cancer, they are therefore likely to be carcinogens.

Pictogram. A composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical.

Poison. A substance that adversely affects one’s health by causing injury, illness, or death. These are often marked with a skull and crossbones.

Primary Containers. Chemical containers supplied by the vendor.

Simple Asphyxiant. A substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death.
Secondary Containers. Containers that are not supplied by the vendor. Often these are smaller in size than the original container.

Sensitizer. A chemical that is capable of causing an immune response in an individual.

Signal Word. A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are “danger” and “warning.” “Danger” is used for the more severe hazards, while “warning” is used for the less severe.

Regulated Work Area. Work areas that restrict entry, require more protective PPE, require contamination controls, and have disposal restrictions. These areas are required by OSHA for working with certain carcinogens.

Reproductive Toxin. A substance or agent that can cause adverse effects on the reproductive system. The toxic effects may include alterations to the reproductive organs and/or the endocrine system (which includes the thyroid and adrenal glands). These effects can occur in both men and women. OSHA defines reproductive toxins as “Chemicals which affect the reproductive capabilities, including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

Teratogen. Any agent that can disturb the development of an embryo or fetus.

Toxicology. The study of the nature, effects, detection, and mitigation of poisons and the treatment or prevention of poisoning.

6.0 RECORDS

No records are generated in the performance of this procedure.

7.0 SOURCES

7.1 Requirements

1. 10 CFR 851, “Worker Safety and Health Program.”


3. 29 CFR 1910.1200(h) (3).


5. 29 CFR 1910, Section 1450, “Occupational exposure to hazardous chemicals in laboratories,” paragraph (f), “Employee information and training,” paragraphs (1), (2), and (4) (I).


7.2 References

2. American Conference of Governmental Industrial Hygienists, “Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment.”

3. TFC-BSM-CP_CPR-C-06, “Procurement of Items (Materials).”


6. TFC-PLN-34, “Industrial Hygiene Exposure Assessment Strategy.”
ATTACHMENT A – TECHNICAL CRITERIA FOR HAZARD COMMUNICATION

Carcinogen: A chemical is considered to be a carcinogen if any one of the following conditions exist:

- OSHA has designated it as a carcinogen in 29 CFR 1910, Subpart Z.
- It has been identified by the American Conference of Governmental Industrial Hygienists (ACGIH) as an A1 (Carcinogen) or A2 (Suspected Human Carcinogen).
- It has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen (Group 1, Group 2A or Group 2B).
- It is listed as a carcinogen or potential carcinogen in the “Annual Report on Carcinogens” published by the National Toxicology Program (NTP) (latest edition).

NOTE: Assume mixtures present a carcinogenic hazard if they contain at least 0.1 percent in volume or weight of a carcinogen.

Hazard Assessment (Chemical):

The Industrial Hygiene Exposure Assessment Strategy (TFC-PLN-34) provides guidance for conducting the hazard assessment. The purpose of the hazard assessment is to fulfill OSHA and DOE O 440.1 requirements to determine if the chemical is a hazardous chemical; and per 29 CFR 1910.1200 definitions, to determine if it is a carcinogen.

The goal of a hazard assessment is to assure that the hazards are communicated to affected employees, to plan for necessary industrial hygiene assessments and/or exposure monitoring, to determine appropriate administrative and/or engineering controls and to determine appropriate personal protective equipment needs. This analysis must ensure that the planned hazardous chemical use falls within the established “safety envelope” of the facility/project. It can be accomplished through judicious use of professional judgment combined with knowledge of the facility/operations and hazard controls. Where appropriate, and when employee exposure is anticipated, the hazard assessment may be documented via such means as baseline hazard assessments, Job Hazard Analysis, etc.

Consider chemicals listed in these publications to be hazardous:

- American Conference of Governmental Industrial Hygienists, “Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment” (latest edition)
ATTACHMENT A - TECHNICAL CRITERIA FOR HAZARD COMMUNICATION (cont.)

Information (Employees): Per OSHA criteria, employee hazard communication information is the following:

(7.1.3)

- The requirements of 29 CFR 1910.1200
- Any operations in their work area where hazardous chemicals are present, and
- The location and availability of this procedure (the written Hazard Communication Program) including the required list(s) of hazardous chemicals, and SDS/MSDS (e.g. Right to Know Station).

Training: Employee training shall include at least:

(7.1.3)

- Methods and observations that may be used to detect the presence or release of hazardous chemicals in the work area (such as continuous monitoring devices, visual appearance, and odors)
- Safe work practices for the chemical and physical agents present in their work place and work area
- What controls are in place to ensure exposures are reduced below OSHA established limits or limits set by the American Conference of Governmental Industrial Hygienists (ACGIH) (whichever is most restrictive)
- How to safely perform non-routine (infrequent, unfamiliar, or out of the ordinary) tasks involving hazardous chemicals or physical agents
- Hazards associated with chemicals in overhead and other piping systems
- Information about the physical and health hazards of chemicals in the work area
- Measures that the employee can use to protect themselves from the hazards, including specific written procedures to follow and safety requirements
- Hazards they may be exposed to when working on or near another work site controlled by other employees or employers.
ATTACHMENT B – HANFORD HAZARD LABEL

The following information is required on the MSDS related label:

- Product name
- Manufacturer Name
- MSDS number
- Health, Flammability, and Instability (Reactivity) degrees of hazard per the National Fire Protection Association (NFPA) 704 standard
- “Specific hazards”
- “Target organ,” and
- Hazard rating date.

Both the product name and Hanford SDS/MSDS number must match those on the corresponding SDS/MSDS for that chemical/product. The label also has color-coded fields for numerical ratings which depict the severity of hazard imposed by the hazardous chemical as follows:

- Health Hazard – Blue.
- Flammability Hazard – Red.
- Reactivity Hazard – Yellow.

The hazard severity ratings are indicated in the white box within the color-coded field according to the following scheme:

- 0 - Minimal or no hazard.
- 1 - Slight hazard.
- 2 - Moderate hazard.
- 3 - Serious hazard.
- 4 - Severe hazard.
ATTACHMENT C – HANFORD HAZARD LABEL (Using GHS Elements)

The following information is required on the SDS related label:

- Product name
- Manufacturer Name
- SDS number
- Pictogram
- Signal word
- Hazard Statements.

The three Hanford Hazard Container labels are shown, as applicable, for the Signal word “Danger” in the red box, “Warning” in the orange box, and “See Statement below” in the yellow box.
ATTACHMENT D – MATERIAL SAFETY DATA SHEET AND SAFETY DATA SHEET
ACCESS

Accessibility:

SDS/MSDSs of all products used and stored at the work area/facility are found on the Hanford SDS/MSDS website on the intranet or internet. Workers will be provided instruction during their training on how to search for chemical products, from their work stations, using the SDS-MSDS Website.

It is expected that workers will become familiar with the products they are using from reading the SDS/MSDS or through briefing(s) from the industrial hygienist (IH) or field work supervisor (FWS) before using the product.

Workers can contact their FWS or the Safety and Health personnel for questions related to the use of a chemical product, or on how to access the website to obtain an SDS or MSDS.

Getting Access to SDS/MSDS Database Link:

From the computer desktop go to Software Distribution to download the SDS/MSDS Icon.

Once the SDS/MSDS Icon is selected, open the search found under Navigation section on the left.

SDS/MSDS can be accessed by its assigned Hanford SDS/MSDS number, product name, or by manufacture. NOTE: Always use a wildcard percent sign (%) before and after your search entry.

Once you locate the desired SDS/MSDS, select the highlighted number link to retrieve the hazard rating information, date, and other pertinent information. Select the *.pdf link on that page and the SDS/MSDS will appear on the screen.
ATTACHMENT D – MATERIAL SAFETY DATA SHEET AND SAFETY DATA SHEET ACCESS (cont.)

NOTE: Users should be aware that having a stamped Hanford SDS/MSDS number on the product SDS/MSDS is **not** an indication that the product is approved for use at a Hanford work area/facility.
ATTACHMENT E – ORDERING GHS-COMPLIANT SECONDARY LABELS

Directions: Go to Sign Shop- Sign Ordering by using this link:

http://msc.ms.rl.gov/ServiceCatalog/c.cfm/signshop/

- Click on “All” to the left under “Subject” and remove all checkmarks for “Subject”
- Then click “Hanford Hazard Label GHS Compliant.” This will display available labels
- Scroll to the label you want
- Then click on the expand button (the button with four opposing arrows to the lower right), to display a larger view of the label

- Alternately, if you know the SDS number you can enter it in the Search Signs box

- Click on the label you want to display the order page.