

434ARWI91-302

BY ORDER OF THE COMMANDER 434th AIR REFUELING WING

434th AIR REFUELING WING INSTRUCTION 91-302

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Safety

WORKPLACE SPECIFIC HAZARD COMMUNICATION PROGRAM

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This program provides information specific to the implementation of AFPD 91-3, *Occupational Safety and Health* based on Air Force Occupational Safety and Health (AFOSH) Standard 161-21, *Hazard Communication*. It is intended to reduce the incidence of chemically induced occupational illnesses and injuries by informing workers of the hazards associated with and proper preventive measures to be taken when using or handling hazardous materials in the workplace. A workplace specific program includes AFOSH 161-21, 434 ARW Instruction 91-302, *Workplace Specific Hazard Communication Program*, the work area hazardous chemical inventory, a list of non-routine tasks performed in the work area, and applicable material safety data sheets.

SUMMARY OF REVISIONS

This revision aligns this instruction with current instructions in AFI 37-160V1, *The Air Force Publications and Forms Management Programs--Developing and Processing Publications*.

1. Responsibilities:

1.1. 434 Bioenvironmental Engineering Services (BES) (434 SPTG/SGPB):

1.1.1. Provides Material Safety Data Sheets (MSDS) upon request to workplace supervisors, if available.

1.1.2. Assists supervisors, when requested, to prepare a Workplace Specific Hazard Communication Training Program (WSHCTP). BES will also assist, when requested, in preparing workplace specific Hazard Communication training materials.

1.1.3. Evaluates workplace Air Force Hazard Communications Program (AFHCP) during annual shop visits and evaluations.

1.2. 434 Military Public Health (MPH) (434 SPTG/SGPM):

1.2.1. Provides supervisors training in a formal Federal Hazard Communications Training Program (FHCTP) using AFOSHSTD 161.21.1g, *Federal Hazard Communication Training Program*, Trainer's Guide and video program.

1.2.2. Includes AFHCP as part of occupational health training during routine shop visits.

1.2.3. Assists supervisors, if requested, in preparing WSHCTP training. MPH has developed the

following products to assist the supervisor in conducting the WSHCTP training; a sample WSHCTP guide and a sample MSDS training guide at attachment 1.

1.3. Base Supply:

1.3.1. Prepares and issues an MSDS with all hazardous materials.

1.3.2. Provides BES with copies of MSDSs for all hazardous materials received from supply sources.

1.4. The workplace supervisor:

1.4.1. Is formally trained by MPH in the Federal Hazard Com Program (FHCP).

1.4.2. Prepares and maintains a Written Workplace Specific Hazard Communication Program. See paragraph 3.1 for requirements.

1.4.3. Ensures MSDSs are correct for each hazardous chemical used in the shop. The supervisor will not permit the use of a hazardous material in the workplace until an MSDS has been obtained.

1.4.4. Ensures the hazardous chemical inventory is current at all times.

1.4.5. Make sure employees do not work with hazardous materials until training in the FHCTP and WSHCTP have been provided.

1.4.6. Ensures all containers of hazardous materials are properly labeled.

1.4.7. Ensures training is provided to employees for all non-routine tasks performed in the workplace.

1.4.8. Conducts an annual AFHCP audit using AF Form 2519, **All Purpose Checklist**, (434 SPTG/SGPB overprint) on the Hazardous Communication Program at attachment 4.

1.4.9. Ensures that if a new hazard (new material, process, operation, or condition) is introduced into the work, training is conducted in this area.

2. Terms:

2.1. Acute Health Effects. May occur after a short exposure to a substance and cause immediate signs and/or symptoms.

2.2. Carcinogens. Chemicals that can cause cancer.

2.3. Chronic Health Effects. May occur after a low exposure to a substance over an extended period of time.

2.4. Occupational Health Examination Program. A system set up to periodically assess the health of workers with a potential for exposure to hazardous substances by performing blood test, lung capacity test, hearing test, etc. These examinations are job related and not general physicals.

2.5. Combustible Liquids. Have a flash point of 100 °F. or greater but below 200 °F.

2.6. Corrosives. Chemicals that burn on contact, causing visible damage or irreversible changes to body tissues.

2.7. Cryogenics. Very cold material that cause frostbite by freezing the body tissue on contact.

2.8. Dose. The quantity of the chemical hazard to which you are exposed.

2.9. Dose/Response. The relationship between the amount of hazard you are exposed to and the reaction you have as a result of that exposure.

2.10. Duration of Exposure. The time you are exposed to a chemical hazard.

2.11. Explosives. Chemicals that can cause a sudden and violent release of pressure gas and heat.

2.12. Exposure Levels:

2.12.1. PEL. Permissible exposure levels (legal standard)

2.12.2. REL. Recommended exposure levels (NIOSH directed)

2.12.3. TLV. Threshold limit values (ACHIH)

2.12.4. TWA. Time weighted average

2.12.5. STEL. Short-term exposure limits (usually 15 minutes)

2.12.6. TLV-C. Threshold limit value-ceiling

2.13. Fire Hazard. Chemicals that ignite and burn easily or cause or support fire in other materials.

2.14. Flammable Chemicals. Chemicals that ignite easily at temperatures below 100F. An example of this is turpentine.

2.15. Flash Point. The temperature at which liquid gives off enough vapor to burst into flame when exposed to an ignition source.

2.16. Hazards. What can cause injury or harm when using a chemical.

2.17. Hazard Warning. Any word, picture, symbols, or combination thereof appearing on a label or other appropriate form of warning which conveys the hazards of the chemical (s) in the container (s).

2.18. Hazardous Chemical. Any chemical which is a physical hazard or a health hazard.

2.19. Health Hazard. A chemical for which acute or chronic health effects may occur.

2.20. Irritants. Chemicals that react with the body at the site of contact, causing reddening or itching. Repeated contact can crack or break the skin, but the damage is not permanent.

2.21. Label. Any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

2.22. Lower Explosive Limit. Data on the MSDS that defines the minimum amount of airborne chemical that must be present in an air-chemical mixture and still have it be explosive.

2.23. Material Safety Data Sheet. Written or printed material concerning a hazardous chemical which provides the reader with important information concerning that specific substance.

2.24. Mutagens. Can cause genetic changes in sperm and egg cells. This can cause sterility, birth defects, and miscarriages.

2.25. Occupational Safety and Health Program. A plan of action or operation with the overall intent of protecting the worker.

2.26. Oxidizers. Supply the oxygen required to start or support fire.

2.27. Personal Protective Equipment. Equipment that protects the individual who wears it by placing a barrier between the individual and the hazard. It can protect against both physical hazards and health hazards.

2.28. Physical Hazard. Chemicals that can cause explosion, fires, violent chemical reactions, or other hazardous situations.

2.29. Poison. A substance which may cause severe illness or even death when taken in small amounts.

2.30. Pyrophorics. Chemicals that ignite spontaneously in air below 130F.

2.31. Reactive Chemicals. Chemicals that produce or release a hazard when allowed to contact certain

other chemicals.

2.32. Response. The reaction you may have to exposure to a chemical hazard.

2.33. Routes of Entry. The ways in which substances enter the body, (i.e. inhalation, ingestion, skin absorption, or eye contact).

2.34. Specific Gravity. Physical data on the MSDS that describes whether a liquid is lighter or heavier than air.

2.35. Sensitize. Causes an allergic-like response in many people who are repeatedly exposed to a chemical. The allergic-like response can happen on the first exposure or any exposure thereafter.

2.36. Target Organ Chemicals. Chemicals that damage a specific organ or body system, such as the liver.

2.37. Teratogens. Chemicals that are reproductive hazards and damage the baby during development.

2.38. Threshold Limit Value (TLV). The level after which continued exposure to a chemical may be harmful.

2.39. Time Weighted Average (TWA). Average exposure for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed day after day, without adverse effects.

2.40. Toxic. Means that a chemical has the potential to disrupt normal physical process, causing illness.

2.41. Upper Explosive Limit (UEL). Data on the MSDS that defines the maximum amount of airborne chemical that can be present in an air-chemical mixture and still have it be explosive.

2.42. Vapor Density. Physical data on the MSDS that describes whether the vapor formed by a material is lighter or heavier than air.

2.43. Vapor Pressure. Force exerted on the walls of a closed container by vapor formed above the liquid surface.

3. Procedures:

3.1. Written Hazard Communication Program. The workplace supervisor maintains a Written Hazard Communication Program. A sample table of contents for an AFHCP book is provided for the supervisor's use at attachment 3. The written program includes:

3.1.1. A copy of AFOSH Standard 161-21.

3.1.2. 434 ARW Instruction 91-302.

3.1.3. The Bioenvironmental Engineering Survey and the Military Public Health Shop Visit.

3.1.4. Operations/tasks involving chemicals and safety equipment for each operation.

3.1.5. Material Safety Data Sheets.

3.1.6. A list of non-routine tasks performed in the work area.

3.1.7. Spill response plan/emergency exit plan.

3.1.8. The work area Hazardous Chemical Inventory.

3.1.9. Documentation of formal FHCTP for all employees as directed in AFOSH Standard 161-21.

3.1.9.1. Initial Federal Hazard Communications Training

3.1.9.2. Workplace specific hazardous chemicals training.

3.2. Material Safety Data Sheets.

3.2.1. The supervisor obtains MSDSs from BES for all hazardous materials in the workplace. The supervisor ensures the correct MSDS is on hand for every hazardous chemical in the workplace regardless of how the chemical was obtained. If there is more than one manufacturer for any product received under the same national stock number (NSN), the work area must have the MSDS from each manufacturer. BES provides the appropriate MSDSs upon request of the supervisor for federally stock-listed chemicals used at each applicable work area on Grissom. The supervisor requests an MSDS from BES upon receipt of the item.

3.2.2. The supervisor contacts BES prior to introducing any new hazardous chemical into the workplace. If the supervisor determines an MSDS is not available from BES, Supply attempts to procure the MSDS from the manufacturer.

3.2.3. The supervisor ensures hazardous materials are not ordered outside normal base supply channels without prior BES coordination. This includes COCESS, NAF, COPARS, Medical Supply, Local Purchase and IMPAC Card. The supervisor submits requests through the Hazmat Pharmacy for approval before ordering.

3.2.4. Workers desiring MSDS information will have ready access to MSDSs kept in the work area. Workers desiring an explanation of the information in the MSDS or of supplementary information such as measured levels of air contaminants and appropriate protective equipment should contact BES.

3.3. Employee Information and Training.

3.3.1. Unit commanders ensure supervisors and employees who handle, use, or are potentially exposed to hazardous materials in the course of official military duties are provided information and training on the Air Force Hazardous Communication Program and the specific hazards of their work area. This training is conducted upon initial work area assignment and whenever a new hazard is introduced into their work area. This initial training occurs before employees are exposed to hazardous materials. If a new material, process, operation, or condition has hazards on which employees have already been trained, retraining is not required. With respect to federal civilian employees, their applicable collective bargaining agreement may contain procedures addressing labor's involvement with safety and health training.

3.3.2. Employee and supervisor information and training includes the items listed below:

3.3.2.1. How employees can obtain and use the appropriate MSDS.

3.3.2.2. Any operations in their work area where hazardous materials are present.

3.3.2.3. Location and availability of the hazardous chemical inventory and MSDS master file.

3.3.2.4. Methods and observations that may be used to detect the presence or release of a hazardous material in the work area such as monitoring conducted by Bioenvironmental Engineering, visual appearance or odor of hazardous materials, etc.

3.3.2.5. Physical and health hazards associated with potential exposure to work area hazardous materials.

3.3.2.6. The measure employees can take to protect themselves from hazards: e.g., personal protective equipment (PPE), administrative controls implemented to protect such as appropriate work practices, and emergency procedures.

3.3.2.7. Explanation of the labeling system.

3.4. The unit commander ensures supervisors of work areas using hazardous materials receive training using AFOSHSTD 161-21.1G, "**Federal Hazard Communication Training Program (FHCTP)**"

Trainer's Guide," and video program, or equivalent HQ USAF/SGPA approved program containing the elements of the FHCTP. These supervisors are trained by the 434 SPTG/SGPB or other formal training organization (e.g., maintenance trainers). Call SGPB for scheduling.

3.5. The supervisor ensures subordinate workers are FHCP trained using the AFOSH STD 161-21.1W, "**Federal Hazard Communication Training Program, Student's Workbook,"** and video program, or equivalent HQ USAF/SGPA approved program containing the elements of the FHCTP before the workers handle or are occupationally exposed to hazardous materials. This training may be provided by the supervisor, the organization occupational health coordinator, or other formal organizational training structure (e.g., maintenance trainers). The supervisor supplements this training to provide information on work area specific chemical hazards. Before presenting supplemental training, the supervisor ensures appropriate agencies (i.e. BES, MPH, Ground Safety, and Fire Protection), review the information for technical accuracy.

3.5.1. Document this training on the employee's AF Form 55, **Employee Safety and Health Record.** A computerized information management system (CORE, CAMS, AOHS, etc.) designed to maintain training records may be used in conjunction with the AF Form 55. After each training session, the supervisor forwards a list of workers trained to MPH.

3.6. The supervisor ensures new employees are not permitted to work with hazardous materials until FHCTP and WPSHC training has been provided and documented. If an employee transfers to Grissom from another Air Force installation and has this training documented on AF Form 55 or equivalent, repeat training is not required except for those hazardous materials on which the employee has not been previously trained.

3.7. Annually, during Military Public Health visits to the workcenter, the supervisor certifies on the shop roster, that all personnel in the workcenter have received hazard communication training. If all workcenter personnel have not received the training, the supervisor identifies those who require the training.

3.8. Ground Safety and Bioenvironmental Engineering spot check HAZCOM training documentation during routine workplace visits. Risk Assessment Codes (RACs) are assigned in accordance with AFI 91-301 for any deficiencies found.

4. Hazardous Chemical Inventory:

4.1. The work area supervisor develops the hazardous chemical inventory for each work area. The supervisor ensures the inventory is reviewed at least annually by Bioenvironmental Engineering, and that the review is documented.

4.2. The supervisor maintains the hazardous chemical inventory in the work area and updates it as necessary. When new chemicals are introduced into the work area, the supervisor consults with BES to determine if the chemical should be added to the inventory. The hazardous chemical inventory, as well as the listing of new chemicals, is kept with the Written Hazard Communication Program.

4.3. As a minimum, the inventory includes the name of each hazardous chemical used in the work area as it appears on the MSDS. Proprietary information will not be included on the hazardous chemical inventory.

4.4. Every 12 months, the supervisor physically inspects all chemicals in the workplace and ensures the chemical inventory is accurate and current. Document this inventory.

5. Non-Routine Tasks Involving Hazardous Materials:

5.1. Non-routine tasks are:

5.1.1. Those tasks included within a work area's normal activities but performed infrequently; for

example, cleaning a solvent tank and changing the solvent, or cleaning up spills.

5.1.2. Temporary duties outside an individual's normal Air Force Specialty Code (AFSC) or job series.

5.2. The work area supervisor lists all non-routine tasks performed in this work area which involve hazardous materials. The supervisor ensures work area operating instructions (OIs) thoroughly describe non-routine tasks, associated hazards, and controls, for the infrequent tasks performed in this work area. Operating instructions do not need to be prepared if Technical Orders or other official documents adequately describe these tasks. The supervisor ensures workers review these procedures before performing the non-routine tasks.

5.3. When workers temporarily perform duties outside their normal jobs, the supervisor of the activity ensures these workers receive the following training prior to beginning the activity:

5.3.1. The initial Federal Hazard Communication Training Program described in Paragraph 5e of AFOSH Standard 161-21, for workers not previously trained.

5.3.2. Supplemental training as necessary, on work area specific chemical hazards and associated controls.

5.3.3. The supervisor of the activity forwards a letter to the worker's formal supervisor describing the training conducted so that the individual's AF Form 55 can be updated.

6. Contractor Operations:

6.1. Base Contracting notifies BES, when necessary, to attend a pre-performance conference.

6.2. The contractor provides copies of MSDSs on all locally purchased chemicals to the base BES.

6.3. BES advises at the pre-performance conferences:

6.3.1. Hazardous chemicals the contractor may encounter during the contract operation and any protective measures needed in the normal course of their work in this work area.

6.3.2. Tells the contractor where MSDS information is available and provides information on the labeling system. The contractor is required to submit information on the use of hazardous materials according to FAR 52.223-3, **Hazardous Material Identification and Material Safety Data**.

6.4. Civil Engineering Material Control:

6.4.1. Processes all requests for hazardous chemicals or materials through HAZMAT Pharmacy/BES.

6.4.2. Provides MSDS's for all chemical materials purchased through local purchase.

ANTHONY TASSONE, JR., Colonel, USAFR

Commander

**WORKCENTER SPECIFICS:
HAZARDOUS CHEMICALS USED IN THE WORKPLACE**

PLAN OF INSTRUCTION

ORGANIZATION: 434

SHOP:

DECEMBER 1995

PLAN OF INSTRUCTION

WORKCENTER SPECIFICS: HAZARDOUS CHEMICALS USED IN THE WORKPLACE

1. PURPOSE. This plan of instruction (POI) supplements the "Workplace Written Hazard Communication

Program" by providing supervisors a format for employee information and training. Supervisors will tailor this

POI to meet their specific requirements.

2. OBJECTIVES. Enable employees to identify hazardous chemicals used in their respective work areas and the

precautions to take during hazardous chemical use/handling.

3. TEACHING STEPS. These steps will help the supervisor cover all required areas of training:

A. Introduction.

B. "Workplace Written Hazard Communication Program" and most recent Bioenvironmental Engineering Survey.

C. Operations with Hazardous Chemicals.

D. Non-Routine Tasks.

E. Material Safety Data Sheets.

F. Labeling.

G. Physical and Health Hazards.

H. Methods and Observations to Detect Presence.

I. Protective Measures.

J. Conclusion.

4. INSTRUCTIONAL GUIDANCE.

A. This guide must be filled in with the workcenter specifics to serve its intended purpose.

B. Stress use of MSDSs and Personal Protective Equipment.

C. Record completion on AF Form 55. The AF Form 55 will be annotated AFHCTP for the Initial Federal Hazard Communication Training Program and WSHCTP for Workplace Specific Hazard Communication Program for each presentation of specific workplace hazard information, such as, upon transfer to a new duty section or the addition of a new material, process, operation, condition, or chemical in the work area. Training will be accomplished within 30 days but prior to working with or being exposed to the hazardous material. The AF Form 55 will be maintained within the workcenter by the supervisor.

5. TARGET POPULATION. All personnel assigned to your workcenter who handle or are exposed to hazardous chemicals.

6. COURSE DURATION. The duration of this course will vary between workcenters depending upon the number of operations involving hazardous chemicals, the number of workers in any one workcenter, and the receptiveness of the workers. It is anticipated that the minimum time to cover required information will be one hour.

A. Introduction:

1. Your Rights: By law (29 Code of Federal Regulation, 1910.1200; implemented locally by 434 ARW Instruction 91-1), you have the right and are required to receive information and training regarding the hazardous chemicals that you handle or are exposed to during your normal work activities. This information and training is the "Hazard Communication Program", commonly referred to as Haz Com. You may also hear it referred to as the "Right-to-Know" program. This program deals specifically with your supervisor informing you of the hazardous chemicals within your workplace and providing to you the training required to safely work with and around those chemicals prior to exposure. You were first introduced to this program when you received the "Department of Defense Federal Hazard Communication Training Program." The training you are about to receive is a continuation of that program and addresses the hazardous chemicals you will be exposed to, established protective measures, and how to find the information needed to protect yourself. You can expect to receive some aspect of this program for as long as you work with or around hazardous materials.

2. Your Responsibilities: Under AFI 91-301, Air Force Occupational Safety, Fire Prevention, and Health Program, you have specific responsibilities. You are required to follow the training you are given, comply with personal protective equipment requirements, including its use, inspection, and care, and give due consideration to personal safety and the safety of fellow workers.

3. Methods Of Recourse: If you feel you have not received information which you need or have a right to under the Hazard Communication Program, talk to your supervisor. You may also contact your squadron environmental manager, your wing environmental manager, or the Bioenvironmental Engineering Office.

	NAME:	EXT.
SQUADRON ENV. MANAGER:		
WING ENV. MANAGER:	Mr. Jeff Woodring	2-4561
BIOENVIRONMENTAL OFFICE:	Mr. Don Pope	2-3595
MILITARY PUBLIC HEALTH	Mr. Tom Cummins	2-3598

B. Workplace Written Hazard Communications Program (AFOSH STD 161-21) and Bioenvironmental Engineering Survey:

Refer to AFOSH Std 161-21 for items in the workplace specific training.

Refer to 434 ARW Instruction 91-302, paragraph 2 for requirements.

NOTE: Let each person read the Bioenvironmental Engineering Survey as part of the training.

C. Operations/tasks in the workplace involving hazardous chemicals:

Show workers list of operations/tasks involving hazardous chemicals.

Refer to Tab E in the Hazard Communications Book see tab 4.

D. Non-routine tasks/details involving Hazardous Materials:

1. A non-routine task is:

a. A task included within the activities of a workplace but performed infrequently.

b. A detail or temporary duty performed outside of an employee's normal workplace or AFSC. This includes squadron and base details.

2. Supervisors will ensure work area Operating Instructions thoroughly describe non-routine tasks, associated hazards, and controls for the infrequent tasks listed in this section. Operating Instructions do not need to be prepared if Technical Orders, other official documents, or manufacture's instructions adequately describe these tasks. Supervisors will ensure workers review these procedures before performing the non-routine task.

3. When workers temporarily perform duties outside their normal jobs, the supervisor of the activity will ensure these workers receive the following training prior to beginning the activity.

a. The initial AFHCTP if not previously trained.

b. Supplemental training, as necessary, on work area specific chemical hazards and associated controls.

c. The supervisor of the activity will forward a letter to the worker's formal supervisor describing the training conducted so the individual's AF Form 55 can be updated.

Refer to Tab F: NON-TASKS/DETAILS in the Hazard Communications Book

E. Material Safety Data Sheets:

Material Safety Data Sheets are designed to help you understand how to work safely with chemicals in your work area. Although MSDSs may vary in appearance and length, most MSDSs will have approximately 8 to 10 sections which explain the proper ways to handle and store chemicals in your work area. A MSDS also provides information on health hazards of the chemical, precautionary measures to follow, and emergency procedures. This guide will help you become more familiar with using MSDSs. Read the information contained in the different sections of a MSDS, then examine MSDSs from your shop to get a good idea about the different formats used.

NOTE: Show employee the MSDS book and explain the purpose of the MSDS. Below is some information to assist in explaining the MSDS.

CHEMICAL IDENTIFICATION

The introductory section of the Material Safety Data Sheet includes the chemical manufacturer's name, address and emergency phone number, the chemical name, trade name, and chemical formula. This section helps you identify the chemical on the MSDS.

HAZARDOUS INGREDIENTS

This section lists any hazardous ingredients found within the chemical that can be hazardous to you. In this section you might also see the terms TLV and PEL. Both terms are used to express the airborne concentration levels of a chemical to which most people can safely be exposed during a normal workday. Another term, CAS (Chemical Abstract Service), will usually be listed in this section of the MSDS. The CAS numbers identify specific chemicals according to information published by the American Chemical Society.

PHYSICAL DATA

This section lists such important physical properties of the chemical as boiling point, vapor density, percent volatile, appearance and odor, and others. This information helps determine the degree of hazards associated with the chemical in different work environments. For example, vapor density describes the weight of a vapor relative to an equal value of air. If a chemical has a vapor density greater than 1, the vapor will be heavier than air and tends to fall and hug the ground.

FIRE AND EXPLOSION DATA

This section helps you determine the chemical flash point, which is the temperature at which a chemical will release enough flammable vapor to ignite. Chemicals that ignite at or above 100 °F are classified as combustible; those that ignite below 100 °F are classified as flammable. In addition, this section usually lists the chemical's upper and lower flammability limits, proper types of extinguishing media required to safely extinguish the fire (examples: water, foam, etc.), special firefighting procedures, and any unusual fire and explosion hazards associated with chemical.

HEALTH HAZARD DATA

This section describes health effects associated with being overexposed to the chemical through ingestion, inhalation, and skin or eye contact. The information may include: the acute (immediate) and chronic (long-term) effects of overexposure to the chemical, whether the chemical is a known carcinogen (cancer-causing agent), emergency and first aid procedures to follow in case of overexposure, whether the overexposures may require immediate medical attention, and medical conditions that may be aggravated upon contact with the chemical. If you work in an area where overexposure is possible, safety equipment may be needed to protect you.

REACTIVITY DATA

The information contained in this section helps you determine if the chemical will react with other chemicals or conditions. Chemicals that are reactive (unstable) may explode, burn or release toxic substances under certain conditions. In addition usually tells you if the chemical is stable or unstable and lists any chemicals or substances that might be incompatible with the chemical.

SPILL OR LEAK PROCEDURES

This section lists the procedures to follow when a chemical is accidentally released or spilled. It will also cover types of cleanup and protective equipment needed to safely contain or clean up a spill as well as proper ways to dispose of the chemical.

SPECIAL PROTECTION INFORMATION

This section lists the types of special personal protective equipment (respirators, gloves, eye protection,) that are recommended to be used when working with the chemical. Remember, there are various types of protective equipment that are specially designed for certain tasks. Consult with your supervisor to ensure you are using the correct type for the work you are performing.

SPECIAL PRECAUTIONS

The last section usually discusses special precautions to be taken during handling and Storage or the

chemical. Also, this section will usually discuss any other health or Safety concerns that have not already been mentioned in other section of the MSDS.

SAMPLE MSDS

F. Labeling

To ensure employees are aware of all hazardous material within their workplace, OSHA requires all containers of hazardous materials brought into or used within a workplace to have the contents labeled, tagged, or marked on the container(s).

1. The chemical manufacturer, importer, or distributor is required to label, tag, or mark each container with:

- a. The identity of the hazardous material
- b. Appropriate hazard warnings
- c. Name, address, and phone number of the manufacturer, importer, or distributor

These labels, tags, or markings will not be removed, defaced, or changed. If it becomes necessary to replace a label, tag, or marking due to damage or loss, a DD Form 2521 (8" x 11") or DD Form 2522 (4" x 6"), Hazardous Chemical Warning Label, will be used. One of these forms will also be used to meet the labeling requirements for existing stocks of unraveled materials and for transferring, repackaging, or distributing of bulk quantities of hazardous materials into other containers (breakdown quantities).

2. The supervisor will ensure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked with:

- a. The identity of the hazardous chemical
- b. Appropriate hazard warnings.
- c. Name, duty section and phone number of the responsible individual if the container is used or transported for use outside of the workplace

3. Stationary containers may have their contents identified using signs, placards, or other such written material in place of labels as long as the alternative method identifies the container to which it is applicable. However, a label is the suggested method of identification.

4. Small quantity containers, when filled, used, and emptied by one employee during one shift within the workplace, are not required to be labeled by OSHA. However, the source container will have the required OSHA markings.

Warning labels may be formatted with either message or symbol which will identify the chemical and communicate the hazards of the chemical within the container. Labels may also address:

First aid - The label may explain what to do if the chemical comes in contact with eyes or skin, or if it is ingested or inhaled.

Fire - The label may list the type of extinguisher to use if the chemical is flammable, and if it should catch fire.

Spills - Some warning labels may contain information on how spills should be handled.

Handling and Storage - The label will provide storage information and may list the type of personal protective equipment required to handle/use the chemical.

Label recognition - Each label will have health risk, flammability, reactivity and personal protective equipment. The following colors are used with each category.

<u>Color</u>	<u>Hazard</u>
Blue	Health Risk
Red	Flammability
Yellow	Reactivity
White	Personal Protective Equipment Needed

Number Coded - ranks the potential health, flammability, and reactivity hazard. Ranges are from 0 (minimal) to 4 (serious).

SAMPLE LABEL

G. Physical and Health Hazards:

In this section we will cover the general categories and associated hazards of chemicals used in this workcenter. The specific chemicals used during a particular operation or task will be addressed during the training or orientation for that operation or task.

1. Paints

- a. Flammable, toxic.
- b. Cause eye, throat, skin, and lung irritation; intoxication.
- c. Wash skin, flush eyes, remove employee to fresh air.
- d. Use with protective equipment and or use in a well ventilated area. Keep away from heat source.

2. Adhesives/Sealants

- a. Flammable.
- b. Chemicals cause eye, skin and respiratory system irritation by contact and through inhalation of vapors.
- c. Wash skin, flush eyes, remove employee to fresh air.
- d. Use in well ventilated area; keep away from heat source.

3. Solvents/Cleaners

- a. Flammable, toxic.
- b. Chemicals cause eye irritation and in extreme cases, blindness can result. Can also cause skin irritation or burns. Vapors affect upper respiratory system.
- c. Wash skin, flush eyes, remove employee to fresh air. If severe, seek professional medical attention.
- d. Use with protective equipment and in a ventilated area; keep away from heat source.

4. Oils/Lubricants (To include hydraulic fluid and engine oil)

- a. Flammable
- b. Chemicals can cause skin irritation; vapors can affect respiratory system.
- c. Wash skin, flush eyes, remove to fresh air.

d. Use in well ventilated area; keep away from heat source.

5. Fuels

a. Flammable, slightly toxic

b. Chemicals cause skin and eye irritation; vapors can irritate respiratory system.

c. Wash skin, flush eyes, remove to fresh air.

d. Use in well ventilated area or use protective equipment; Keep away from heat source.

6. Compressed Gases

a. Explosive if container punctured.

b. Contents under pressure can cause eye damage.

c. Use protective equipment.

7. Acids

a. Explosive, corrosive, toxic.

b. Can cause serious burns; fumes are toxic; radical reaction when mixed with other chemicals.

c. Wash skin, flush eyes, seek immediate medical attention.

d. Use full protective equipment, keep away from heat source.

NOTE: Consult label and MSDS for information on specific chemicals before handling or use.

NOTE: Make sure you have a MSDS available when seeking medical attention, but do not delay medical attention while waiting for a MSDS.

H. Methods and observations to detect presence or release of a hazardous material in the workplace.

1. Continuous Monitoring Devices: None Required

2. Monitoring Conducted by the Supervisor: Spot Checks, Observation of Tasks

3. Visual Appearance: Many chemicals have a distinct color and others, by their lack of color, could be visually confused with water. Certain colors can be distorted depending upon the lighting and the color of the material the chemical is in contact with. For these reasons, be extremely careful when attempting to identify an unknown spill by color alone.

4. Odor: Chemicals can also have a distinctive smell, such as an oily, or alcohol-like smell. Unfortunately, some chemicals are nearly odorless. In these cases, remain aware of your or a co-worker's physical reactions. Burning eyes, nose or throat, prickly skin, loss of coordination, and dizziness are a few signs of exposure to a hazardous chemical.

5. Monitoring by Bioenvironmental Engineering: May be performed as a part of a survey, when a new process or chemical is introduced into the workplace, or when over-exposure to a chemical is suspected.

I. Protective measures:

Controlling chemical hazards often require a combination of protective measures: administrative controls, engineering controls, and personal protective equipment. We will examine how these controls are used.

1. Administrative Controls:

a. Information and Training: In order to recognize the need for protection against a hazard, you need to be aware that a hazard exists. This information is passed to you through Hazard Communication training, technical data, and on-the-job training (OJT).

b. Safe Work Practices: Through information and training, you learn the safe work practices to incorporate with chemicals you will use or be exposed to. Common sense also goes a long way.

c. Good Housekeeping and Personal Hygiene: The goal of good housekeeping is to contain and remove hazards through proper storage, proper cleanup, and the prompt removal and correct disposal of chemical wastes. The correct personal hygiene around hazardous chemicals involves washing your hands before eating, drinking, or smoking, prompt removal of contaminated clothing, and cleaning of the clothing before wearing again.

d. Environmental, Medical, and Personal monitoring: In some workplaces, the hazard of a chemical used requires the use of machines to monitor the air to warn of possible overexposure. Another method is physical exams of the personnel to detect adverse health conditions, both before exposure to a chemical and at specific intervals while working with a chemical (434 ARW Instruction 91-1). In all workplaces, monitoring of the workers by the supervisors for poor work practices, poor housekeeping, and damaged equipment is the first line of defense against unprotected exposure to hazardous chemicals.

2. Engineering Controls:

a. Substitution: Finding a less hazardous chemical used within a process, finding a less hazardous process, or finding a less hazardous piece of equipment.

b. Isolation: Using barriers or enclosures to separate the hazard from the employee.

c. Ventilation: Providing a constant source of fresh air to the work area or removing airborne hazards at the source.

3. Personal Protective Equipment: Technical data and MSDSs will specify the protective equipment necessary while using specific chemicals. The protective equipment used in this workcenter and their location are:

a. Refer to Tab H: in the Hazard Communications book for required safety equipment.

4. Emergency Procedures: When controls fail or there is an accidental release of a hazardous chemical, emergency actions to safeguard life and property must be taken. The following are actions established in this workcenter:

a. Refer to Tab I in the Hazard Communications book for required spill response and emergency exit plan. As you become familiar with the job, you may be able to suggest ways to improve our operation. Don't hesitate to talk these ideas over with your supervisor and don't forget to submit them on AF Form 1000, United States Air Force - Suggestion

b. Now Refer to Tab J: HAZARDOUS CHEMICAL INVENTORY

NOTE: Return to this page after reading the above information and call your supervisor:

Refer to Tab K IN-HOUSE HAZ COM TEST

J. Conclusion:

We've covered some very important information today, information which will permit you to do your job safely and avert health problems in later years.

You should now know and understand:

1. Your personal rights and responsibilities under OSHA.

2. Hazard Communication requirements that apply to your job and workplace.
3. The chemical hazards of your workplace.
4. Personal Protective Equipment that you need, where to get it, how to use it, and how to maintain it.
5. How to identify and report hazards.
6. Emergency procedures that apply to your job and workplace.
7. That running your finger through an unknown substance and sticking it up to your nose is not smart.

IF YOU HAVE ANY DOUBTS OR QUESTIONS, ASK YOUR SUPERVISOR TO GO OVER THE MATERIAL AGAIN. DON'T SHORTCHANGE YOURSELF, YOUR FAMILY, OR THE AIR FORCE.

Attachment 2
HAZARD COMMUNICATION TRAINING HANDOUT
Material Safety Data Sheets

1. Material Safety Data Sheet:

a. This sheet should contain the following information:

- (1) Name of the hazardous material to include the chemical and common name.
- (2) Physical characteristics of the chemical, such as odor, vapor pressure, flash point and color.
- (3) Chemical characteristics of the chemical, such as TLV, and hazardous ingredients.
- (4) Physical hazards of the hazardous chemical, such as the potential for fire, explosion and reactivity.
- (5) Health hazards of the hazardous chemical, including signs and symptoms of exposure, and any symptoms of exposure and any medical conditions which are generally recognized as being aggravated by exposure to the chemical.
- (6) The primary routes of entry.
- (7) Reactivity hazards.
- (8) Spill/leak/accident procedures.
- (9) Precautions for safe handling, storage, and transportation of the chemical.
- (10) Any applicable control measures, such as work practices or personal protective equipment.
- (11) Emergency and first aid procedures.
- (12) Names, addresses, and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing or distributing the MSDS.

b. If the MSDS does not contain all the information that you need, see your supervisor for more information.

2. Labels:

- a. Each hazardous chemical container should contain a label .

b. Each label should contain the following information:

- (1) Name of the Chemical
- (2) Health, fire and reactive hazards for the chemical.
- (3) Required protective equipment.
- (4) Manufacturer's name, address and telephone number.

3. Education and Training of Employees:

a. Employers must provide employees with information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new hazard is introduced into their work area.

b. The employee must be informed of:

- (1) Any operations in their work area where hazardous chemicals are present.
- (2) The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals and MSDS's.

c. The employee must be trained on the following:

- (1) Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such monitoring conducted by Bioenvironmental Engineering, visual appearance or odor of hazardous chemicals when being released, etc.).
- (2) Physical and health hazards of the chemicals in the work area.
- (3) Precautions employees can follow to protect themselves from the hazards.
- (4) An explanation of the labeling system used.
- (5) The importance of the MSDS.

4. Employee Responsibilities:

a. Employees must comply with all procedures, regulations, and rules in handling, using, storing, and transporting hazardous materials.

b. Employees must be familiar with applicable Air Force Regulations, shop operating procedures, and technical orders that apply to performance of their job.

5. Important offices and services provided to the worker:

a. Military Public Health provide assistance to the supervisor in educating the employees about the health hazards associated with various chemicals used in the work area, as well as education on such topics as heat and cold stress, hearing conservation, etc. Their office hours are 7:30 A.M. to 4:15 P.M. Their telephone number is 2-3598 on base and (317) 688-3598 from off base.

b. Bioenvironmental Engineering (BEE) provides surveys for work areas to determine the presence of any hazards that may adversely affect your health. They also maintain the master MSDS's for Grissom ARB. If you require any MSDS s to update your files you may contact the BEE section at 2-3595 on base or (317) 688-3595 from off base. Their office hours are 7:00 A.M. to 4:00 P.M.

c. The Safety office surveys work areas to identify physical hazards in the workplace. Each duty section usually has a safety person who you may contact if you feel that something in your work area is unsafe. The Safety Office can be reached at 2-8276 on base or (317) 688-8276 from off base.

6. Applicable laws and regulations:

- a. OSHA Hazardous Communication Standard -- 29 CFR 1910.1200
- b. AFOSH Standard 161-21 Hazard Communication
- c. AFI 48-101 Aerospace Medicine Operations
- d. AFR 91-301 Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program.

Attachment 3

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