

THE GEON COMPANY

Technical Center
P.O. Box 122
Moore & Walker Rds.
Avon Lake, Ohio 44012
216-933-0100
Fax: 216-933-0563

September 17, 1993

Mr. Arnis Andersons
U. S. Department of Labor
Occupational Safety and
Health Administration
Rm. 734, Federal Office Bldg.
234 N. Summit Street
Toledo, OH 43604

Dear Mr. Andersons:

On September 10, 1993 the B.F. Goodrich Company received your letter regarding complaint No. 73817702L. The buildings of concern are presently owned by the Geon Company. This change in ownership was discussed with Ms. Marrie Henderson of your office on September 16, 1993.

Below please find our response to the alleged hazards.

1. Employees are overexposed to plastic chemicals at the mixers in buildings 441, 438 and 452. Ventilation is inadequate (chemicals not known). Reference 1910.1000 standard.

Exposure monitoring has been conducted per attached policy, SA-25, Industrial Hygiene Program. Please note that per the "Monitoring Schedule" section, chemicals and physical agents are monitored upon: employee request; governmental regulation; process additions and modifications; job exposure analysis; incidents of potential exposure and task analysis. Current results regarding exposures in the mixer areas have been below the PEL. We will maintain our ongoing monitoring program and address any results of significance.

All mixers have stationary ventilation systems that are either in continuous operation or automatically activated when the station is in use. The ventilation has been designed specifically for the equipment in question. These systems are periodically tested for proper flow. As a result of your letter, ventilation tests were conducted on September 14, 1993. Flow rates were found to be in good condition, ranging from 350 to 1100 feet per minute.

2. Lock-out tag-out procedures are not followed when cleaning machines in 441, 438 and 452. Reference 1910.147 standard.

NGC 14100

Please find attached copies of our safety policy SA-02 "Lock-Out Procedure", equipment isolation lock-out test and audit/inspection procedures. You will find that SA-02 is in full compliance with 1910.147. Additionally, lock-out training is conducted annually with all employees in buildings 441, 438 and 452. Audits are also conducted annually for employees in these buildings. The lock-out policy is communicated, maintained and enforced.

3. Employees have not been trained as to the chemical hazards they work with. Reference 1910.1200 standard.

All employees have received training on hazardous chemicals in their work area, both upon initial assignment and annually thereafter. Please find attached copies of our Hazard Communication Policy SA-24, Hazard Communication lesson plan and associated employee tests and documentation. Additional policies are in place regarding personal protection i.e. respiratory protection, eye, hand and head protection. We have also attached a copy of our recipe sheet titled "The Geon Company Campaign Pick List". This is published to the appropriate employees prior to each production run. Please note that PPE designation is part of this list.

Based on a review of 1910.1200, we do however feel that a modification to our training program is needed. Section (h) (2) (ii) addresses physical and health hazards of the chemicals in the work place. Our current training program addresses these issues in a more generic format. Beginning September 28, 1993, we will implement specific training in reference to physical and health hazards. Documentation of training will then be sent to your attention.

Dear Mr. Andersons, we have answered your letter to the best of our ability. If there are any other issues or concerns, please let us know. Your letter of September 1, 1993 has been posted to our employees. Our response will also be posted on or before September 21, 1993.

Sincerely,

The Geon Company


Calvin C. Lee
Geon Site Director

CCL:mab

Enclosures

NGC 14101

B.F.GOODRICH COMPANY
Avon Lake

SUBJECT: INDUSTRIAL HYGIENE PROGRAM

General Notice: SA-25
Issued: 10-10-92
Page 1 of 3

PURPOSE

To provide all BFGoodrich employees with a safe and healthful work environment and comply with all applicable government regulations.

STAFF AND ORGANIZATION

The Avon Lake Industrial Hygiene Program is coordinated by the Site Health and Safety Department. Their responsibilities include: personal monitoring, select area monitoring, analysis of monitoring data, medical surveillance, periodic exposure surveys, selection of personal protective equipment, training programs where applicable, record keeping and reporting.

MONITORING SCHEDULE

The following chemicals & physical agents are monitored periodically. The frequency is based on individual toxicity and exposure potential.

VCM	Noise	Lead	Ammonia	Benzene
THF	Butadiene	Ethyl Acrylate	Styrene	
Welding Fumes	Ionizing Radiation	MDI	Organotins	
Vinyl Cyclohexene	Formaldehyde	Acrylonitrile	Total & Respirable Dust	

1. Additional chemicals & physical agents are monitored as indicated by the following:
 - a. Employee request
 - b. Compliance with governmental regulations
 - c. Process additions and modifications
 - d. Job exposures analysis
 - e. Incidents of potential exposure
 - f. Task analysis
2. The monitoring schedule is reviewed quarterly by the Manager of Health & Safety.

MONITORING STRATEGY

Once the chemical or physical agent has been selected, the following steps are taken:

1. A process survey is conducted by the Industrial Hygiene technician.
2. Select the sample size, i.e., number of personal or area samples. The sample size is based on the quantity and hazard severity of the chemical or physical agent, existing engineering controls and the potential employee population.

NGC 14102

3. Determine the sampling technique based on established procedures. (OSHA, BFG, certified analytical lab instruction)
4. Sampling equipment is calibrated and recorded for accuracy prior to and at the conclusion of monitoring. A sample blank is included.
5. The sampling equipment is then transferred to the monitoring site. Sample location is established at the time of the process survey. Check points include: source emission points, ventilation flows, operators work area and potential high exposure tasks.
6. The participating employee completes a chemical monitor form. (See attachment #1)
7. The IH technician completes a laboratory request sheet. (See attachment #2)
8. Once the sampling is complete, the medium is packaged and sent to the appropriate analytical laboratory. If storage is required, the medium is isolated via desiccator or refrigerator to prevent contamination. All outside labs are AIHA certified. BFG analytical laboratories will be utilized where appropriate.

PERSONAL PROTECTIVE EQUIPMENT

See SAF/SA policies: 3100 Eye Protection; 3200 Hearing Protection; 3600 Safe Wearing Apparel; 3700 Hand Protection; 3800 Respiratory Protection; SA-41 Respiratory Protection; SA-43 Personal Protection; SA-44 Head Protection; SA-45 Hand Protection and the Site Chemical Hygiene Plan.

RECORD KEEPING AND REPORTING

All personnel monitoring data is entered into corporate medical surveillance. An environmental exposure monitoring card is completed by the site Industrial Hygiene technician. A complete file, including personal and area monitoring results, equipment calibration and technical observations, is maintained by the Safety & Health Department. This information is accessible to all employees. This information is retained indefinitely.

A report is generated quarterly summarizing monitoring results and corrective actions where appropriate. This report is distributed to all affected departments.

ENGINEERING CONTROLS

Appropriate engineering controls are established by design engineering for all new processes and significant process modifications. The Manager of Health and Safety is responsible for approval. Maintenance of engineering controls is the responsibility of the equipment owner. Where applicable, preventative maintenance programs must be established. **NOTE:** All ventilation systems that are designed specifically for exposure control must be included in a preventative maintenance inspection program not to exceed a one-year frequency.

FOLLOW-UP PROCEDURES

All monitoring results above the Permissible Exposure Limit (PEL) require a follow-up. The Health and Safety Department includes a corrective action sheet with the monitor card when a result is greater than established limits. (See Attachment #3) It is the area supervisor's responsibility to complete this follow-up sheet. In addition, all results above the PEL without the appropriate personal protective equipment require a board of review and narrative report. (See SAF-1300 and SA-38 - "Board of Review")

L. J. Horde 10/20/92
Facility Director

D. M. Shepard 10/27/92
Plant Manager, 8P&C

Kenneth Chesser 10/22/92
Plant Manager, Geon Resin

David J. Dier 10/12/92
Plant Manager, Compound

B.F.GOODRICH COMPANY
AVON LAKE GENERAL CHEMICAL PLANT

GENERAL PROCEDURE

GENERAL NOTICE: SA-24

Issued: 11-23-92

Page 1 of 4

SUBJECT: HAZARD COMMUNICATION

PURPOSE:

To provide a written Hazard Communication Program to all employees.

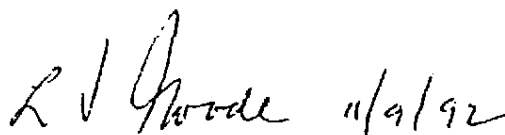
COORDINATOR

The Manager of Health & Safety shall be the facility Hazard Communication Coordinator.

CONTENTS

The Hazard Communication Program listed on the following pages shall contain the following topics:

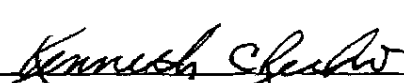
1. Labeling
2. Material Safety Data Sheets
3. Employee Training
4. Chemical Inventory
5. Contractor Training

 11/9/92

Facility Director

 11/4

Plant Manager, SP&C



Plant Manager, Geon Resin

 11/3/92

Plant Manager, Compound

GENERAL PROCEDURE

GENERAL NOTICE: SA-24

Issued: 11-23-92

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A. LABELING

Container labeling is an important part of our hazard communication program. With proper container identification and labeling and availability of MSDS and operating procedures, each employee can determine the chemical contents of the container and the chemical health hazard.

The basic BFG labeling requirement is that all chemical containers must be labeled, tagged or identified with the chemical name and/or BFG code number and the health/physical hazard of the chemical. Also, the labeling must be legible, in English and prominently displayed. The specific method of labeling used in the plant will differ depending on the type of container in question as discussed below.

Bulk Storage Tanks: Identified with chemical name and/or the raw material code number. Labeled with the National Fire Protection Agency (NFPA) diamond.

Raw Material Containers: The plant will rely on our suppliers to label raw material containers with their warning label(s) and stenciling on the BFG code number for that chemical. We will not re-label raw material containers unless the supplier's label has been destroyed and/or rendered unreadable.

Multiple Chemical Use Containers: These containers are identified by equipment name or code number. Equipment not marked can be identified by referencing a plot plan displayed near the building entrance which has the equipment identified by number. The equipment contents and health hazard can be determined by reference to the department's operating procedures or production schedule and product recipe for the chemical contents and the MSDS for the chemical health hazard.

Intermediate-Use Containers: Identified, marked or tagged with the chemical name and/or BFG code number. This requirement applies to small-sized containers (i.e., 5-gallon buckets, pails, etc.) used to transfer materials for small volume applications. Transfer containers, such as beakers, do not need to be labeled as long as the person using the container is present. If more than one person is to use the container, it must be labeled.

Finished Product Containers: All finished products shipped in drums or bags will be labeled with labels prepared by the Manager of Product Safety Compliance.

Individuals can contact the Safety Department to obtain labels for common chemicals used in laboratories and process.

GENERAL PROCEDURE

GENERAL NOTICE: SA-24

Issued: 11-23-92

Page 3 of 4

B. MATERIAL SAFETY DATA SHEETS

Responsibility

It is the responsibility of the department using a particular chemical to obtain the most current material safety data sheet (MSDS). Specifically, the person needing the chemical or the person ordering the chemical must obtain an MSDS.

Location

MSDS's for chemicals used in an area will be located in each area. A master file of MSDS's will be maintained in the Technical Center Raw Material Control Department. In addition, the Dispensary will keep a current file of process chemicals.

New hazardous chemicals received into the plant cannot be used until an MSDS is available for review. If an MSDS is not available, any of the following groups can be asked to obtain an MSDS:

1. User Department
2. Safety Department
3. Purchasing Group
4. ALTC Raw Material Group

C. EMPLOYEE TRAINING

Each employee of the Avon Lake Site has received training as required. The initial training for new employees will review:

1. The OSHA Hazard Communication Standard.
2. How to read and understand an MSDS.
3. The Avon Lake Site Hazard Communication Program.
4. An overview of occupational health.

This training will be coordinated by the Safety Department. Each employee's ability to understand the information given during the training session will be documented via a written test.

The initial training will allow employees to recognize and deal with the specific hazards of the chemicals with which they work. Each new employee will be oriented as to the chemicals and their hazards that will be encountered in their area of assignment. If an employee is transferred to another job area, they will be informed of the hazardous chemicals in their new work area.

GENERAL PROCEDURE

GENERAL NOTICE: SA-24

Issued: 11-23-92

Page 4 of 4

For production personnel, informing employees of the hazards from non-routine tasks and non-labeled pipes varies depending on whether the employee is a maintenance craftsman or production/facility operator. A maintenance craftsman is informed of hazards via a completed maintenance work order that will include a statement of the hazard, the protective clothing required and any safety procedure/permit required to do the job safely. Plant operators assigned non-routine tasks are given verbal instructions by their foremen at the beginning of the shift. Additionally, they are told that, if they suspect anything abnormal with their equipment, they are to immediately get their foreman. Note that for purposes of this policy, non-routine tasks are those jobs that are done by a job class at a frequency of less than once per month.

Continual employee education will focus on chemical review. Departments will be required to periodically review a chemical MSDS, plus anytime there is a change regarding process, chemical inventory, equipment, etc.

D. CHEMICAL INVENTORY

In the Technical Center a list of all chemicals used, handled or produced is available via the ChemStore computer system. The ChemStore computer system maintains a current inventory of chemicals, including their location and quantity.

In the General Chemical Plant a list of all chemicals used, handled or produced is available from the Safety Department. The Safety Department periodically updates this list. Each department will maintain its own inventory list.

E. CONTRACTOR TRAINING

Each contractor performing work in the Avon Lake Facility will be informed of the Hazard Communication Program. All contractors will attend a safety orientation training session prior to starting work at the site. In addition, contractors will be given information on protective measures, release deflection and emergency response.

It is the responsibility of the contractor's BFG contact to obtain new chemical approval on any chemical the contractor brings into the plant.

LOCKOUT - CARDINAL RULE

LESSON PLAN

- VIDEO - CHEMICAL DIVISION
LOCKOUT PROCEDURE
- OVERHEADS - SA-2 ALGC
LOCKOUT PROCEDURE
REVIEW PROCEDURE
- QUESTION - ANSWER
- TEST -

BFGOODRICH COMPANY
AVON LAKE GENERAL CHEMICAL PLANT

CARDINAL RULE

SUBJECT: SAFETY LOCK-OUT PROCEDURE

PURPOSE:

The purpose of this procedure is to provide maximum protection to all people and equipment while working on or about equipment powered by an energizing source such as electricity, water, air or steam.

DEFINITION:

The term lock-out shall mean tagging and locking or disconnecting equipment in such a way that it cannot be energized without the lock being removed.

1. Electrical Lock-out will mean the breaking of the circuit breaker, disconnect the switch, or receptacle plug-in type disconnect on electrical supply line.

NEW

If it is not possible to lock out a circuit, disconnecting, taping and danger tagging the main lead wires at the breaker by a qualified electrician will be considered a lock-out. Individuals must "Danger Tag" the breaker.

2. A non-electrical lock-out will be made on equipment that is powered by energizing sources such as water, air, steam, etc., by chaining off the source valve and placing a lock and tag on it and bleeding off any pressure before working on it.
3. Safety Locks A safety lock is a Wilson-Bohannon lock. Each lock will be supplied with only one key.
4. Lock-out Box is a box designated to hold Safety lock-out keys from specific designated equipment locked out by an operator and/or operators for the purpose of multiple lock-out with a check sheet.

5. Lockable Valves: All valves used for lockout purposes are capable of being locked. Through the use of devices such as chains, brackets, adaptors, covers or boxes, any valve is capable of being rendered inoperable by a locking device.

NEW

6. Portable Electrical Equipment

A lockout is not required if equipment is unplugged from the energy source and the plug is under exclusive control of the employee performing the servicing or maintenance.

RESPONSIBILITIES:

Individual

Each individual who works on or about equipment that can be energized by any means, and has exposed parts that can be activated, will lockout and tag the appropriate equipment, verify the lockout and maintain the key in their possession. In no case will the lock-out by one individual suffice or be considered a lock-out for another person. One person - 1 lock and tag; 2 persons - 2 locks and tags, etc.

Management

The lockout procedure must be thoroughly reviewed with each new employee by his supervisor before he starts to work. The supervisor will demonstrate the procedure to the employee. The employee will then demonstrate to the supervisor how to perform the lockout. Periodically, (at least every 6 months) the supervisor will review with their employees the lockout procedure.

Supervisor shall document these training sessions. Documentation includes names and dates of each person trained/retrained.

Supervisor shall conduct an annual inspection of the lockout procedure. This will include a review, between the supervisor and each authorized employee, of the employee's responsibilities under the lockout procedure being inspected.

NEW

The supervisor shall certify that the annual inspections have been performed. The certification shall identify the equipment on which the lockout procedure was being utilized, the date of the inspection, and the person performing the inspection. See Appendix I.

SAFETY DEPARTMENT

Will provide guidance when questions or unusual conditions arise.

Monitor forcible lock and tag removal.

Audit training and annual inspections.

Provide required safety training for all contractors.

PROJECT SUPERVISOR

Assure that contractors' employees receive required Safety Training, and comply with plant Safety Procedures.

PRODUCTION:

1.) When Maintenance or servicing work is to be performed on specific equipment, the operations personnel shall lock and tag all energizing sources and release all stored energy. 2.) The operation responsible shall provide to the personnel working on the equipment a written description of how the equipment has been locked out. This may be done on the Maintenance Work Order or Job Authorization Check Sheet. 3.) At the job site, the operation personnel responsible shall review with assigned personnel the location of all lockouts and shall sign the MWO or Job Authorization Check Sheet.

MAINTENANCE:

Prior to performing any maintenance or servicing work, each person shall install his personal lock and tag on all lockouts listed on the MWO or Job Authorization Check Sheet. The only exception is if a "Lockout Box" is used.

All assigned maintenance personnel shall sign the MWO, verifying lockout and tagging has been done.

Each person shall remove their lock and identification tag at the completion of their work. They shall also sign the MWO stating this has been done.

PROCEDURE FOR LOCK-OUT:

1. Identify Equipment - Carefully check to assure the energizing source, electrical breaker or disconnect switch to be locked out will de-energize the equipment to be worked on. To assist in this identification, each start-stop switch and the breaker or disconnect in the circuit must have correlating identification numbers attached.
2. De-Energize - Isolate the equipment to be worked on under Definitions 1 & 2.
3. Locking Out Equipment - Each person who will work on the equipment must place his own lock and tag on each energizing source. Multiple locking adapters are available when the number of locks needed for proper lock-out exceeds the amount that the breaker or disconnect switch can accomodate. Several pieces of equipment in the plant require as many as four or five disconnects to de-energize the equipment. All sources must be locked out; additional locks are available from the supervisor. The individual who attached the lock must have the only key on his person. The key is not to be passed to another individual. (Exception - See Page 5, #5)
4. Test For Proper Lock-Out - Locking out the breaker or disconnect switch will not be considered adequate assurance that equipment is isolated.

After the lock/s and tag/s have been attached, each person must check for proper lock-out by attempting to start the equipment. All persons involved in locking out the equipment will be informed when the attempt is made to start the equipment. This will be accomplished by depressing the start button. When assured the equipment is properly de-energized and locked, the stop button is to be depressed. Pushing the stop button is important in order to place the circuit in the "OFF" mode, so when the breaker or disconnect is re-energized, the equipment will not start automatically.

PROCEDURE FOR SHIFT CHANGE PERSONAL LOCK-OUT TRANSFER:

There will be occasions when a person's work shift ends prior to completion of work on equipment he has locked out. If someone else is expected to finish the work during the interim period before the person's next scheduled work shift, then he will be responsible for a lock-out transfer. The lock-out transfer will be accomplished in the following manner.

1. Contact the supervisor having jurisdiction in the area where the equipment is located and request a lock-out transfer,
2. The supervisor will accompany the person who has the equipment locked out to the site of the lock-out and place his own lock-out lock and danger tag on the equipment requiring lock out.
3. After and only after the supervisor's lock and tag are in place, the person who requested the lock-out transfer may remove his lock and tag.
4. The supervisor will maintain his lock and tag on the breaker or disconnect switch until the person who will complete the work has placed his lock and tag and completes the remainder of the requirements of the lock-out procedure.
5. The subsequent shift supervisor has accepted the lock-out transfer by receiving the key for the lock-out from the supervisor he is relieving. The receiving shift supervisor must verify proper lock-out and sign the danger tag as soon as possible after the key transfer.

PROCEDURE FOR REMOVAL OF LOCK-OUT:

When an individual has completed his work and is prepared to remove his lock, he should again depress the stop button. This will assure the circuit is still in the "OFF" mode and will not start up when the breaker or disconnect is re-energized. The lock and tag should then be removed. NO INDIVIDUAL SHALL REMOVE

ANOTHER'S LOCK AND TAG. The only exception for lock and tag removal is noted below.

FORCIBLE REMOVAL OF LOCK:

There may be occasions when a person who has locked out equipment has left the plant. In the event the lock must be removed, the following will be required:

1. Every effort shall be made to contact him to obtain his permission to remove the lock.
2. If he cannot be located, the area supervisor shall be responsible for taking whatever action is necessary to assure that personnel will not be endangered or equipment damaged, before the lock is removed. He will, in any case, thoroughly inspect the equipment.
3. The supervisor will consult a member of the Safety Department before any safety lock is forcibly removed. Security will maintain a log for lock removal.
4. The supervisor must be present when the lock is removed. If a multiple locking adapter is used, cut the portion of the adapter containing the lock.
5. The lock will be given to the person's foreman and returned to the employee upon his return.

ROTATING EQUIPMENT NOT RESTRICTED BY LOCK-OUT:

There will be occasions when locked out equipment will not be sufficient to eliminate the hazard from moving parts. Especially hazardous are blowers having blades with large surface areas. Any air movement, such as a back draft, may cause the blades to rotate causing a severe pinch point hazard. Thus an additional lock-out point is needed to control the blades from movement. A chain with a lock shall be attached to the blade (if possible) to control movement. If not, the hazard can be reduced by blocking the rotor or the drive sheave with a 2" X 4", or with some other construction grade timber.

MAINTENANCE CHECK OF EQUIPMENT:-

There will be special cases where maintenance personnel must energize unguarded equipment in order to check shaft or gear alignment, timing, etc.

In these special cases, the maintenance persons involved shall have a standby while he checks the energized equipment. He shall also put a danger tag on the breaker and any other remote starting station before energizing the equipment. The standby and maintenance persons will also be responsible for keeping other people clear of the equipment until it has been properly guarded or locked-out.

WORKING ON ELECTRICAL ENERGIZED EQUIPMENT:-

There will be special cases where Electrician, Electrical Engineer and Instrument personnel must work on the equipment "HOT", (not locked out). Only these people are authorized to do so. Reference requirements - OSHA STD. CFR 1910.331 - 335 "Electrical Safety Related Work Practices.

IEW

EQUIPMENT ELECTRICAL ENCLOSURES

No one shall open a locked out electrical enclosure for any reason without approval from every individual having the equipment/system locked out.

Any deviation from this procedure will be noted in a separate department procedure and approved by the Safety Department.

REMINDER:

ANY UNAUTHORIZED PERSON WHO REMOVES A SAFETY LOCK AND/OR DANGER TAG FROM A PIECE OF EQUIPMENT OR PIPING AND OPERATES OR ATTEMPTS TO OPERATE IS SUBJECT TO DISCIPLINARY ACTION.

GENERAL NOTICE: SA-2, Rev.2
Issued: 8-12-91
Page 8 of 8

**ABSOLUTE COMPLIANCE TO THIS PROCEDURE IS A MUST. FAILURE TO
COMPLY COULD RESULT IN SEVERE INJURY TO SOMEONE OR TO EQUIPMENT
OR EVEN A PLANT DISASTER.**

APPROVED BY OPERATIONS COUNCIL

PLANT MANAGER

W. H. Hode 8/12/91

GK/bp

NGC 14117

APPENDIX I

AVON LAKE LOCKOUT PROCEDURE AUDIT/INSPECTION

EMPLOYEE AUDITED/INSPECTED _____

DATE _____

TASK/EQUIPMENT DESCRIPTION _____

(ATTACH ISOLATION FORM IF AVAILABLE)

DEPARTMENT _____

PROCEDURE FOLLOWED? YES _____, NO _____

COMMENTS _____

AUDITED/INSPECTED BY _____

EMPLOYEE, (SIGNATURE) _____

REDACTED

AVON LAKE LOCKOUT PROCEDURE AUDIT/INSPECTION

EMPLOYEE AUDITED/INSPECTED _____

DATE Aug 11, 1993

TASK/EQUIPMENT DESCRIPTION Lock out Buss KNIFE
N-LINE

(ATTACH ISOLATION FORM IF AVAILABLE)

DEPARTMENT 569.3

PROCEDURE FOLLOWED? YES ✓, NO _____

COMMENTS _____

AUDITED/INSPECTED BY E. Evans

EMPLOYEE, (SIGNATURE) _____

NGC 14119

NAME: _____

DATE: _____

AVON LAKE GENERAL CHEMICAL PLANT

EQUIPMENT ISOLATION - LOCKOUT

TRUE/FALSE

- 1) An isolation device prevents the flow of energy and materials from one side of the device to the other side. _____
- 2) All valves are capable of being locked in a closed position. _____
- 3) Before maintenance work can begin, a written description of how the equipment has been isolated must be prepared. _____
- 4) If someone has left their lock on a valve and has gone home for the night, the equipment night supervisor can cut the lock off without checking with anyone. _____
- 5) Personal Protective Equipment (face shield, rubber gloves, boots and rubber suit) can be worn in lieu of taking time to isolate equipment. _____
- 6) Lockout procedures apply only to electrically powered equipment. _____
- 7) A contractor can always follow his own lockout procedure when working on our equipment. _____
- 8) When two men are working as a "team", only one has to lock out a piece of equipment before they both can work on it. _____
- 9) At the end of a shift, the keys to a lock can be given to the shift relief in order to save time. _____
- 10) It is necessary to lock out any piece of equipment whenever one of its safety guards is removed. _____

NAME: JAMES DODSON

DATE: 1-19-93

100

AVON LAKE GENERAL CHEMICAL PLANT

EQUIPMENT ISOLATION - LOCKOUT

TRUE/FALSE

- 1) An isolation device prevents the flow of energy and materials from one side of the device to the other side. T
- 2) All valves are capable of being locked in a closed position. T
- 3) Before maintenance work can begin, a written description of how the equipment has been isolated must be prepared. T
- 4) If someone has left their lock on a valve and has gone home for the night, the equipment night supervisor can cut the lock off without checking with anyone. F
- 5) Personal Protective Equipment (face shield, rubber gloves, boots and rubber suit) can be worn in lieu of taking time to isolate equipment. F
- 6) Lockout procedures apply only to electrically powered equipment. F
- 7) A contractor can always follow his own lockout procedure when working on our equipment. F
- 8) When two men are working as a "team", only one has to lock out a piece of equipment before they both can work on it. F
- 9) At the end of a shift, the keys to a lock can be given to the shift relief in order to save time. F
- 10) It is necessary to lock out any piece of equipment whenever one of its safety guards is removed. T

**BFGOODRICH COMPANY
AVON LAKE GENERAL CHEMICAL PLANT**

HAZARD COMMUNICATION TRAINING

LESSON PLAN

1. Introduction: Why are we providing training?
2. Overheads & Discussion (Appendix A)
 - A. Hazard Communication Standard
 - B. Avon Lake General Chemical Plant Written Program
 - C. Labeling Requirements
 - D. Dept. Labeling for Single Chemical Containers.
 - E. Dept. Labeling for Multiple-Chemical Containers.
3. Film: What You Don't Know Can Hurt You
 - A. Questions/Answers
4. Film: The MSDS - Cornerstone of Chemical Safety
5. Quiz

HAZARDOUS MATERIALS / MSDS

1993 TEST

1. WHAT DOES MSDS STAND FOR? _____
2. AN MSDS INDICATES THE MANUFACTURE AND THE TRADE NAME OF THE MATERIAL.
TRUE _____ FALSE _____
3. ALL HAZARDS ARE LISTED ON THE PACKAGE LABEL. TRUE _____ FALSE _____
4. DOES AN MSDS INDICATE PROTECTIVE EQUIPMENT REQUIRED FOR HANDLING?
YES _____ NO _____
5. AN MSDS INDICATES STORAGE PRECAUTIONS TO BE TAKEN. TRUE _____ FALSE _____
6. WE KEEP MSDS BOOKS ONLY IN THE DISPENSARY AND FIRE BRIGADE OFFICE.
TRUE _____ FALSE _____
7. WHAT SHOULD YOU DO IF THE MATERIAL YOU ARE USING DOES NOT LOOK NORMAL?
 - A. FLUSH IT TO THE SEWER WITH LOTS OF WATER.
 - B. CALL THE SITE ENVIRONMENTAL MANAGER FOR RECOMMENDATIONS.
 - C. SET THE MATERIAL ASIDE AND NOTIFY THE FOREMAN.
 - D. USE THE MATERIAL AS NORMAL.
8. NEW CHEMICALS MAY BE ORDERED BY AN ENGINEER AS LONG AS THE SUPPLIER SENDS AN MSDS. TRUE _____ FALSE _____
9. RESPIRATOR'S ARE REQUIRED WHEN WEIGHING UP LEAD. TRUE _____ FALSE _____
10. WHAT ARE THE TWO TYPES OF PHYSICAL HEALTH HAZARDS?

SIGNATURE _____

DATE _____

HAZARDOUS MATERIALS / MSDS

REDACTED

1993 TEST

100

1. WHAT DOES MSDS STAND FOR? Material Safety Data Sheet
2. AN MSDS INDICATES THE MANUFACTURE AND THE TRADE NAME OF THE MATERIAL.
TRUE ☒ FALSE ☐
3. ALL HAZARDS ARE LISTED ON THE PACKAGE LABEL. TRUE ☐ FALSE ☒
4. DOES AN MSDS INDICATE PROTECTIVE EQUIPMENT REQUIRED FOR HANDLING?
YES ☒ NO ☐
5. AN MSDS INDICATES STORAGE PRECAUTIONS TO BE TAKEN. TRUE ☒ FALSE ☐
6. WE KEEP MSDS BOOKS ONLY IN THE DISPENSARY AND FIRE BRIGADE OFFICE.
TRUE ☐ FALSE ☒
7. WHAT SHOULD YOU DO IF THE MATERIAL YOU ARE USING DOES NOT LOOK NORMAL?
A. FLUSH IT TO THE SEWER WITH LOTS OF WATER.
B. CALL THE SITE ENVIRONMENTAL MANAGER FOR RECOMMENDATIONS.
☒ C. SET THE MATERIAL ASIDE AND NOTIFY THE FOREMAN.
D. USE THE MATERIAL AS NORMAL.
8. NEW CHEMICALS MAY BE ORDERED BY AN ENGINEER AS LONG AS THE SUPPLIER SENDS AN MSDS. TRUE ☐ FALSE ☒
9. RESPIRATOR'S ARE REQUIRED WHEN WEIGHING UP LEAD. TRUE ☒ FALSE ☐
10. WHAT ARE THE TWO TYPES OF PHYSICAL HEALTH HAZARDS?
Accute Chronic

SIGNATURE _____

DATE 9-14-93

NGC 14124

HAZARD COMMUNICATION TRAINING FOR NEW EMPLOYEES

1. A clue that a chemical has changed might be a:
 - A. Change in color or odor
 - B. Separation into layers
 - C. Formation of crystals
 - ☒ D. All of the above
2. To make sure you have the correct chemical:
 - A. Note the size and type of container
 - ☒ B. Read the label
 - C. Note the appearance and odor
 - D. Try some of it to see what happens
3. In most labeling systems, red is associated with:
 - A. Toxics
 - B. Reactivity
 - ☒ C. Flammability
 - D. Corrosives
4. If there is no label placard or process sheet to tell you what the chemical is:
 - A. Sniff it to see if you can recognize it
 - B. If you think you know what it is, use it anyway
 - C. Pour it down the drain
 - ☒ D. None of the above
5. If you have to mix acid and water:
 - A. Add the water slowly to the acid
 - B. Be careful not to stir the solution
 - ☒ C. Add the acid slowly to the water
 - D. Both B and C
6. Vapor density tells you:
 - A. How rapidly evaporation will occur
 - B. Whether the gas or vapor is lighter or heavier than air
 - C. How thick or strong the gas is likely to be
 - ☒ D. Both A and B
7. About how much O₂ is there in the air you breath?
 - A. 10 - 20%
 - ☒ B. 19.5 - 21%
 - C. 25 - 50%
 - D. 50 - 100%

3 2
Hazard Communication Training for New Employees

8. The type of eye protection available for your use is:

- A. Glasses with side shields
- B. Goggles
- C. Face Shields
- ☒ D. All of the above

9. The three pieces of information on a chemical label are:

- A. Chemical Name, Hazard Warning, Name of Supplier
- B. Chemical Name, Hazard Warning, Transportation Requirements
- ☒ C. Chemical Name, Exposure Limits, Physical Data
- D. Reactivity, Employee Protection, Health Information

10. Chemicals likely to cause the greatest immediate harm to the outside of the body are:

- A. Solvents
- B. Toxic Metals
- C. Hydrocarbons
- ☒ D. Corrosives

11. You should not always rely on your nose as a gas detector because:

- A. It cannot tell you how concentrated the substance is
- B. Your sense of smell can deaden
- C. All toxic gases have no odor
- D. All of the above
- ☒ E. Both A and B

12. The fastest and most common route by which chemicals enter the body is:

- A. Absorption
- ☒ B. Inhalation
- C. Ingestion
- D. Osmosis

13. Poisoning by swallowing can be controlled through:

- A. Good Hygiene
- B. Wearing respirators
- C. Not eating in the work area
- ☒ D. All of the above
- E. Both A and B

Hazard Communication Training for New Employees

14. The key to protecting yourself is:
- A. Making sure your skin is covered
 - B. Wearing rubber gloves and safety glasses
 - ☒ C. Matching the protection to the hazard
 - D. Wearing a cartridge respirator in an oxygen deficient environment
15. Bubbles are a sign that:
- A. Heat is being generated
 - ☒ B. A gas is being given off
 - C. The process is ready to explode
 - D. The vapor pressure is rising
16. The reason that hazardous low-lying or confined areas should be checked before entering is:
- A. They could contain toxic gases
 - B. There could be inadequate oxygen available for breathing
 - ☒ C. They could be full of flammable vapors
 - D. All of the above
17. Respirator users must be trained and tested.
- ☒ True False
18. An eye wash or safety shower should only be used if you feel a burning sensation.
- True ☒ False
19. Gasoline vapors are heavier than air.
- True ☒ False
20. All toxic gases can be detected at low odor levels.
- True ☒ False
21. Chemical protective gloves differ depending on the material of construction.
- ☒ True False
22. A Boiling Point is the temperature at which a chemical releases enough vapors for combustion.
- True ☒ False

REDACTED

Page 4
Hazard Communication Training for New Employees

23. The Permissible Exposure Limit or the Threshold Limit Value is the maximum allowable exposure to air-borne concentrations over a work day.

True

☒ False

24. LD50 is a single dose of a material which, on the basis of laboratory tests, is expected to kill 50 percent of a group of test animals.

☒ True

False

25. Where at ALTC can you obtain a Material Safety Data Sheet?

1. Safety Data Sheet

Name _____

1/1/92
Date

HAZARD COMMUNICATION TRAINING FOR NEW EMPLOYEES

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Hazard Communication Training for New Employees

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Hazard Communication Training for New Employees

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True False

24. LD50 is a single dose of a material which, on the basis of laboratory tests, is expected to kill 50 percent of a group of test animals.

True False

25. Where at ALTC can you obtain a Material Safety Data Sheet?

Name

Date

DATE: 09-09-93 12:53

THE GEON COMPANY
CAMPAIGN PICK LIST

PAGE: 1

LOCATION: 12 OWNER: B441
 CAMPAIGN: A309Z10 ITEM: 872410000264 QUANTITY TO PRODUCE: 24,700
 PROCESS CODE: Z0005 ADJUSTED QUANTITY: 24,700
 REWORK EXISTS: N QTY REWORK AVAIL: ^

EXP DATE	BLDG	INV LOCATION	LOT NUMBER	CONT	GRADE	QTY ON-HAND	QTY AVAIL
=====	=====	=====	=====	=====	=====	=====	=====
COMPONENT	ITEM:	001104770000	110X477				
- -	B455	SIL0	ALSILOS	99	0 00	150,903	150,
- -	TRAC	B1731	N33W014	90	0 00	53,744	53,
- -	TRAC	U123307	N33W016	90	0 00	78,000	78,
- -	TRAC	A64875	N38W054	90	0 00	5	
- -	TRAC	B1061	N35W025	90	2 05	5	
- -	TRAC	B1061	N35W026	90	2 05	112,082	112,
						QTY REQD:	19,009.
COMPONENT	ITEM:	873330002102	87333-000-2102				
- -	B441	M/B BOX AREA	A304X08	60	0 00	467	
						QTY REQD:	12.
COMPONENT	ITEM:	91200S086	MARK 1900				
08-27-95	B441	LIQUIDS	16407E	TO	0 00	13,165	13,
09-07-95	B441	LIQUIDS	16522E	TO	0 00	28,800	28,
						QTY REQD:	380.
COMPONENT	ITEM:	92100B211	YELLOW Y-933-LD				
04-30-95	B441	N.SPEED RACK	MOT78-3	B3	0 00	58	
						QTY REQD:	20.
COMPONENT	ITEM:	92100B228	ORANGE 650				
04-30-95	B441	N.SPEED RACK	2JNQF	ED	0 00	81	
						QTY REQD:	12.
COMPONENT	ITEM:	924709566	TI-PURE R-960 LP				
04-30-95	B441	NORTH WHSE	26337	B3	0 00	17,960	17,
						QTY REQD:	380.
COMPONENT	ITEM:	925710356	ULTRAPFLEX H				
08-27-95	B441	EAST WHSE	A-3-219-16	B3	0 00	8,187	8,
						QTY REQD:	950.
COMPONENT	ITEM:	941710699	2301 X 50				
09-03-95	B441	NORTH DOCK	815	B3	0 00	3,600	3,
						QTY REQD:	570.
COMPONENT	ITEM:	942710859	BLENDEX 338				
08-04-95	B441	EAST WHSE	BB1289	B6	0 00	9,400	9,
09-07-95	B441	EAST WHSE	BB1427	B6	0 00	18,000	18,
09-07-95	B441	EAST WHSE	BB1440	B6	0 00	18,000	18,
						QTY REQD:	2,281.

DATE: 09-09-93 12:53

THE GEON COMPANY
CAMPAIGN PICK LIST

PAGE:

LOCATION: 12 OWNER: B441
 CAMPAIGN: A309Z10 ITEM: 872410000264 QUANTITY TO PRODUCE: 24,700
 PROCESS CODE: Z0005 ADJUSTED QUANTITY: 24,700
 REWORK EXISTS: N QTY REWORK AVAIL: ~

EXP DATE	BLDG	INV LOCATION	LOT NUMBER	CONT	GRADE	QTY ON-HAND	QTY AVAIL
=====	=====	=====	=====	=====	=====	=====	=====
COMPONENT	ITEM:	94300L016	MINERAL OIL USP				
04-30-95	B441	LIQUIDS	BULK	TO	0 00	8,021	8,
						QTY REQD:	570.
COMPONENT	ITEM:	94300L027	POLYETHYLENE AC629A				
07-20-95	B441	S.SPEED RACK	366296	B2	0 00	1,595	1,
						QTY REQD:	19.
COMPONENT	ITEM:	94300L034	CA STEARATE-FUSED				
08-24-95	B441	EAST WHSE	08093	B3	0 00	8,647	8,
08-24-95	B441	EAST WHSE	08163	B3	0 00	16,000	16
						QTY REQD:	475.
COMPONENT	ITEM:	94300L040	PARAFFIN 165 F M.F. PWD.				
7-16-95	B441	EAST WHSE	W2505	B5	0 00	46	
09-08-95	B441	EAST WHSE	W2549	B5	0 00	5,400	5
						QTY REQD:	19

NGC 14134

DATE: 09-09-93 12:53

THE GEON COMPANY
PROTECTIVE EQUIPMENT

PAGE:

CAMPAIGN : A309Z10
PRODUCT : 872410000264

COMPONENT	DESCRIPTION
=====	=====
92100B211	YELLOW Y-933-LD

BODY PART/EQUIPMENT
=====

Hand	/	CHEMICAL PROTECTIVE GLOVES
Eye(s)	/	SAFETY GLASSES
Respiratory	/	HALE MASK AIR PURIFYING RESPIRATOR

COMPONENT	DESCRIPTION
=====	=====
92100B228	ORANGE 650

BODY PART/EQUIPMENT
=====

Hand	/	CHEMICAL PROTECTIVE GLOVES
Eye(s)	/	SAFETY GLASSES
Respiratory	/	HALE MASK AIR PURIFYING RESPIRATOR

COMPONENT	DESCRIPTION
=====	=====
924709566	TI-PURE R-960 LP

BODY PART/EQUIPMENT
=====

Eye(s)	/	SAFETY GLASSES
Respiratory	/	HALE MASK AIR PURIFYING RESPIRATOR

COMPONENT	DESCRIPTION
=====	=====
925710356	ULTRAPELEX H

BODY PART/EQUIPMENT
=====

Hand	/	CHEMICAL PROTECTIVE GLOVES
Eye(s)	/	SAFETY GLASSES
Respiratory	/	HALE MASK AIR PURIFYING RESPIRATOR

COMPONENT	DESCRIPTION
=====	=====
941710699	2301 X 50

BODY PART/EQUIPMENT
=====

Eye(s)	/	SAFETY GLASSES
Respiratory	/	DISPOSABLE DUST MASK

NGC 14135

DATE: 09-09-93 12:53

THE GEON COMPANY
PROTECTIVE EQUIPMENT

PAGE:

UPPER EXTREMITIES

/ CHEMICAL PROTECTIVE SLEEVES

COMPONENT	DESCRIPTION
=====	=====
942710859	BLENDX 338

BODY PART/EQUIPMENT

=====

Eye(s)

/ SAFETY GLASSES

Respiratory

/ DISPOSABLE DUST MASK

COMPONENT	DESCRIPTION
=====	=====
94300L016	MINERAL OIL USE

BODY PART/EQUIPMENT

=====

Eye(s)

/ SAFETY GLASSES

COMPONENT	DESCRIPTION
=====	=====
94300L027	POLYETHYLENE AC629A

BODY PART/EQUIPMENT

=====

Respiratory

/ HALF MASK AIR PURIFYING RESPIRATO

Eye(s)

/ VAPOR TIGHT GOGGLES

COMPONENT	DESCRIPTION
=====	=====
94300L034	CA STEARATE-FUSED

BODY PART/EQUIPMENT

=====

Respiratory

/ HALF MASK AIR PURIFYING RESPIRATO

Eye(s)

/ SAFETY GLASSES