

1988 VCM/LEAD/NOISE/ASBESTOS
HEALTH TRAINING
-CLASS OUTLINE-

INSTRUCTORS: Safety Department Personnel

- PURPOSE:
1. Provide basic information on the prevention of harm due to employee exposures to VCM, lead, noise, and asbestos.
 2. Encourage the maximum amount of employee participation in that effort.

LOCATION: Plant Auditorium

- I. INTRODUCTION
 - A. Purpose of class - state in own words.
 - B. Schedule of class events - Explain briefly.
- II. VCM - Use Appendix 1
- III. LEAD - Use Appendix 2
- IV. NOISE - Use Appendix 3
- V. ASBESTOS - Use Appendix 4
- VI. REVIEW - Recap general subjects covered.

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APPENDIX 1
1988 VCM HEALTH TRAINING
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I. VCM PROPERTIES AND USE

- A. A colorless, sweet-smelling gas at normal temperature and pressure.
- B. A liquid under pressure.
- C. Handled in both forms in plant.
- D. The main raw material used to make PVC.

II. HAZARDS

A. Fire

- 1. Has a low "flash point" - similar to propane.
- 2. All "hot work" must be carefully controlled.
- 3. Makes HCl (severe lung irritant) when burned.

B. AOL

- 1. A finger bone disease.
- 2. Prevented by wearing gloves when handling PVC residue or manually cleaning reactors.

C. FROST BITE

- 1. Touching liquid VCM can cause.

D. INHALATION

- 1. Breathing high concentrations can cause you to pass out or get dizzy.
- 2. HCL - An acid gas released when VCM burns - can cause severe damage and death.

E. LIVER CANCER

- 1. Angiosarcoma - 100+ deaths worldwide to date.
- 2. No cases in our company.
- 3. No cure.

F. CHROMOSOME DAMAGE

- 1. Lab studies indicate high VCM exposure may cause damage to chromosomes.

III. OUR GOAL

- A. Keep your VCM exposures as low as possible.
- B. We need your help - Protect yourself!
- C. VCM leaks must be contained.

IV. SAFE LIMITS

- A. 1ppm, 8-hour time weighted average.
- B. 5ppm averaged over any 15 minute period.

V. LEAKS

- A. No VCM leak is acceptable.
- B. Indicators:
 - 1. Icing on process equipment
 - 2. Hissing noises.
 - 3. Condensation on piping.
 - 4. Odor.
 - 5. Measurements with Honeywell's/portable instruments.
- C. Work Priority - Leak repair is top priority.
- D. Leak Detection - Use Scott Sling-Pak respirator.

VI. RESPIRATORS

- A. Must be used above 1 ppm.
- B. Type of respirator depends on concentration:
 - Up to 1000 ppm: Air-line respirator
 - Above 1000 ppm or unknown: Scott Air Pak
- C. WORK REQUIRING AIR-LINE RESPIRATOR
 - 1. Opening, depressuring, or isolating equipment that has contained VCM, such as:
 - a. VCM pumps
 - b. VCM compressors
 - c. VCM filter packs
 - d. Vessels
 - 2. Hooking up/unhooking VCM railcars
 - 3. Working in the VCM compressor shed
- D. FACIAL HAIR POLICY

VII. PROTECTIVE CLOTHING

<u>Work</u>	<u>Requires</u>
A. Unloading VCM railcars	Cloth gloves, air-line respirator.
B. Cleaning Reactors	Disposable coveralls, rubber gloves, air-line respirator.
C. VCM Filter Pack Changes	Rubber gloves, disposable coveralls, air-line respirator.
D. Entering Dust Collectors	Disposable coveralls, Bullard airline respirator.

VIII. EMERGENCIES

- A. Must be prepared to handle them.
- B. Know what you are expected to do ahead of time.
- C. Leave danger areas when alerted unless your job is to stay and handle the emergency.
- D. Pre-plan your responses to emergencies for different problems.

IX. CONTINUOUS MONITORING

- A. Honeywell system used to constantly assess VCM exposure risks.
- B. May trigger emergency action.
- C. May trigger leak detection procedures.

X. VCM DOSIMETRY

- A. Used to measure actual, personal exposures to VCM.
- B. Wear badges - Do not cover them with outer garments or personnel protective equipment. Likewise, do not lay them on tables, desks, etc. - Wear as intended in all cases!
- C. Fill Out Card:
 - 1. Note respirator use.
 - 2. Note any normal duties or unusual events that could cause overexposure.
- D. You will be notified of any overexposures within ten working days.

XI. MEDICAL TESTING

- A. Done to see if any medically significant problems related to VCM or other chemicals exist.
- B. Take advantage of the program--participate!
- C. Advise your Supervisor of any problems you have with the contract service.

XII. RECORDS

- A. Monitoring Records - Kept for 30 years.
- B. Medical Records - Kept for length of your employment plus up to 30 years beyond.
- C. You will be given a copy of your physical results when the doctor is finished with your exam.

APPENDIX 2
1988 LEAD HEALTH TRAINING
-CLASS OUTLINE-

I. LEAD PROPERTIES AND USE

- A. Lead materials used as heat stabilizers or lubricants in compound.
- B. All are fine, light-colored powders.
- C. Handled manually, normally in 50-lb bags.

II. CONTACT WITH LEAD CAN OCCUR WHEN:

- A. Unloading, transporting, or storing pallets of lead.
- B. Testing lead raw materials and making up Lab batches.
- C. Charging blenders.
- D. Working in Color Weight Room.
- E. Handling, transporting, disposing of empty bags.
- F. Cleaning equipment.
- G. Doing maintenance work on compound lines or in Color Weigh Room.

III. LEAD POISONING

- A. Serious business - large amounts of lead used in plant!
- B. Can enter body by inhalation or ingestion.
- C. Damage to:
 - 1. Nervous System
 - 2. Reproductive System
 - 3. Blood System
 - 4. Kidneys
- D. Can be fatal.
- E. Warning signs.
 - 1. Stomach pain
 - 2. Loss of appetite
 - 3. Nausea
 - 4. Metallic taste
 - 5. Constipation
 - 6. Fatigue
 - 7. Tremors
 - 8. Irrational Behavior
 - 9. Insomnia
 - 10. Convulsions
 - 11. Headaches

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F. If you notice any of these symptoms and are concerned that they might indicate lead poisoning:

1. Tell your Supervisor.
2. See the Plant Nurse.

IV. SAFE LIMITS

- A. 50 micrograms of lead per cubic meter of air, averaged over an 8-hour work period.
- B. Limit becomes lower for more than 8 hours of work.

V. BREATHING PROTECTION

- A. 3M airhats are required for certain jobs:
 1. Charging compound/dry blend blenders
 2. Working in Color Weigh Room
- B. Employees are responsible for keeping airhats clean and in proper working order (changing filters, etc.) on day-to-day basis.
- C. Employees must turn the airhats in monthly for cleaning and service.
- D. Report any operating problems to Supervisors or Safety Department.

VI. VENTILATION SYSTEMS

- A. Intended to catch and remove dusty materials as they are generated.
- B. All exhaust fans and hoods must be running; each one serves an important purpose.
- C. Report inoperative or defective equipment.
- D. Monometer checks - check magnahelic guages.

VII. WORK CLOTHING

- A. Disposable coveralls required whenever lead is being handled.
- B. Remove lead - contaminated coveralls before entering clean areas:
 1. Breakrooms
 2. Restrooms
 3. Control Rooms

VIII. DUST GENERATION

- A. Keep to a minimum.
- B. Avoid unnecessary crushing of empty bags - Do near hood if possible.
- C. Use vacuum cleaning methods for powdered materials - compressed air use is illegal.

IX. PERSONAL HYGIENE

- A. Wash hands, face, arms before eating, drinking, smoking, or applying cosmetics.
- B. Do not take food, drinks, cosmetics or tobacco products into lead handling areas.

X. MAINTENANCE WORK

- A. Operations must clean equipment and work area prior to maintenance work.
- B. Respirators must be used if hot work is done on lead-contaminated equipment even after thorough cleaning.

XI. LEAVING WORK

- A. Vacuum off clothes.
- B. Wash hands, face, arms.
- C. Change clothes when you get home.
- D. Keep work clothes and shoes isolated - wash often.

XII. LEAD DOSIMETRY

- A. Used to measure actual, personal exposure to lead.
- B. Wear correctly (pump and cassette filter placement).
- C. Fill Out Card:
 - 1. Record work times.
 - 2. Record type of respirators used and what for.
 - 3. Record any unusual events that could have caused overexposure. Also, products handled during shift.
- D. You will be notified of any overexposures.

XIII. MEDICAL TESTING

- A. Done to see if any medically significant problems related to lead or other chemicals exist.
- B. Take advantage of the program--participate!
- C. Repeat, blood-lead-testing will be done if doctors feel they are needed.

XIV. RECORDS

- A. You will receive a copy of your physical exam results.
- B. Your doctor may have a copy if you so request.

APPENDIX 3
1988 NOISE HEALTH TRAINING
-CLASS OUTLINE-

I. HEARING LOSS

- A. CANNOT BE REPAIRED
- B. CAN HAPPEN TO ANYONE
- C. IS A NATURAL PART OF AGING
 - 1. Can range from very little to total.
 - 2. Depends upon a variety of health effects:
Infections, natural immunities to diseases,
childhood diseases, effects of drugs, etc.
- D. CAN BE MADE WORSE BY EXCESSIVE EXPOSURES TO NOISE

II. PLANT NOISE

- A. MANY HIGH NOISE AREAS IN PLANT
 - 1. Example
 - a. Vinyl - Dryer area in and around V-11.
 - b. Compound - Dicers, exhaust blowers.
 - c. Maintenance - Boilers, use of noise producing tools and equipment.
 - d. General Plant- Fire pump houses, around high noise portable equipment.
 - 2. Areas Are Posted
 - a. Purpose: Warn of real hazards
 - b. Use hearing protection
- B. HIGH NOISE CAN OCCUR IN NORMALLY QUIET LOCATIONS
 - 1. Examples
 - a. Grinding work
 - b. Concrete chipping and breaking
 - c. Steam leaks
 - d. Air-line leaks
 - 2. Can't depend completely on warning signs for warning.
 - 3. Must recognize - Must use ear plugs/muffs!

III. SAFE LIMITS

- A. Basic Limit: 90 dBA averaged over 8 hours.
87 dBA averaged over 12 hours.
- B. THE HIGHER THE NOISE, THE LESS TIME IS REQUIRED TO CAUSE HARM

IV. HEARING PROTECTION

A. TYPES

1. Earplugs

a. Advantages

1. Better protection against low frequencies than "ear muffs"
2. Readily available - 1st aid station
3. Convenient size - easy to carry, store
4. Less likely to get in the way during work
5. Less likely to get "out of place" during use
6. Safety glasses do not reduce protection (seal)

b. Disadvantages

1. Must be fitted to be effective
2. Requires more care and cleaning
3. May cause discomfort
4. Easier to lose than "ear muff"
5. Cannot be traded or shared

2. "EAR MUFF" HEARING PROTECTORS

a. Advantages

1. Quickly used
2. One size fits all
3. Comfortable to most people
4. Cleaning is less critical than ear plugs

b. Disadvantages

1. Less available than ear plugs
2. More trouble to carry, store
3. More likely to "get in the way" in use
4. Fit is more difficult to maintain during use than ear plugs.

V. AUDIOGRAMS (HEARING TESTS)

- A. A part of plant's medical testing program.
- B. Basic Idea: Ability to hear different "pitches" is tested under carefully controlled conditions, using specialized equipment.
- C. Take advantage of the program - participate!

APPENDIX 4
1988 ASBESTOS TRAINING
-CLASS OUTLINE-

I. ASBESTOS PROPERTIES AND USE

- A. Occurs naturally in form of tiny, thin fibers.
- B. Widely used for insulation.
- C. Still in use in certain parts of the plant.

II. HAZARDS

- A. Very short fibers may be inhaled and lodge in lung, causing longterm health problems.
- B. Most common sickness: "Asbestosis".
- C. Other sicknesses possible, including cancers of the digestive system.

III. PLANT GOAL

- A. Zero Inhalation of Asbestos Dusts

IV. SAFE LIMITS

- A. 8-HOUR TIME-WEIGHTED AVERAGE: 0.2 Fibers
- B. EXCURSION LIMIT: 1 Fiber, in any 15-minute period.

V. CONTROLS - Must use plant asbestos handling procedure, "Use and Disposal of Asbestos", Safety and Health Manual Section 1.540:

A. BEFORE THE WORK STARTS

- 1. Caution Signs - Post around worksite.
- 2. Safety Flagging - Surround area with flagging.
- 3. Restricted Area - Personnel not involved in the work must keep out!
- 4. Protective Equipment - Tyvek Coveralls, rubber gloves, 3-M Airhat.
- 5. Special Equipment - Must bring following to worksite:
 - a. Plastic bags
 - b. Open top drums
 - c. Plastic sheet

B. DURING THE WORK

- 1. Keep dusting to a minimum.
- 2. Keep asbestos wet at all times.
- 3. Catch falling pieces of asbestos with plastic sheeting.
- 4. When cutting asbestos, keep number of cuts to a minimum.
- 5. Do not purposefully drop asbestos to the ground or floor.
- 6. Place scraps inside plastic bags as the work proceeds.

C. AFTER THE WORK

1. Place all asbestos collection bags and sheets inside drums.
2. Floor or ground cleanup.
 - a. Outdoors - Flush area with water.
 - b. Indoors - Wet-sipe and place wiping materials inside drums.
3. Place Tyvek Coveralls and gloves inside drums.
4. Close drums and apply warning labels (to be supplied).
5. Wipe Air Hat and dispose of wipe.
6. Wash hands, face, etc.