

CHEMICAL HAZARDS & YOUI. INTRODUCTIONA. Program Subjects

1. Your Health
2. How Chemicals Enter Your Body
3. How Chemicals Effect Your Body
4. What Defenses Your Body Uses
5. How You Can Help

B. Assumptions

1. You don't want to be hurt.
2. You want to do your part.
3. You expect a fair shake.
4. You're willing to be a part of the solution, not just
a part of the problem.

II. BACKGROUNDA. "CEAP"

1. What it is
2. What it means
3. Where we are
 - a. Chemical Surveys
 - b. Data Sheets
 - c. Monitoring
 - d. Classification of Hazards
 - e. Chemical Files and References
 - f. Department Reference Books
 - g. General Training
 - h. Successes:
 - (1) TCE - Gone!
 - (2) Pond Irritant - Current Status

(3) Compound Ventilation - Current Status

4. Left to Do:
 - a. Everything we're doing now, plus:
 - b. Chemical Disposal Procedures
 - c. Protective Equipment
 - d. Labeling Program
 - e. ? - What would you like to see done? (Answer after the session).

III. WHAT IS A "CHEMICAL?" HOW TOXIC ARE THEY? - Examples:

- A. Laboratory
 1. Nitrobenzene - Hi
 2. Sodium Iodide - Low
- B. Plasticizer
 1. Phthalic Anhydride - Hi
 2. Sodium Carbonate - Lo
- C. Dry Blend
 1. TM 101 - Hi
 2. Titanium Dioxide - Lo
- D. Compound
 1. Lead Compounds - Hi
 2. Mineral Oil - Lo
- E. Maintenance
 1. Biosperse 201 - Hi
 2. Acetylene - Lo

IV. DIFFERENCES IN PEOPLE - Like chemicals, it is great!

- A. "Folliculitis" - Caused by wearing oil-soaked clothes and having an oily skin. Common areas are forearms and thighs as you see here.
- B. Reaction to Poison Ivy
- C. Reaction to Nickel in Scissors containing Nickel
- D. Dichromate Poisoning from Handling Cement. Cement is very caustic, Abrasive, and contains chromium.

VI. WAYS CHEMICALS ENTER THE BODY

- A. Breathing
- B. Swallowing
- C. Skin

VII. BREATHINGA. Lung Construction

- 1. Branching
- 2. Wetness
- 3. Cillia
- 4. Alveoli (air sacs)
- 5. Purpose: $O_2 \longrightarrow$ Blood; $CO_2 \longrightarrow$ Lungs
- 6. Capacity: 32 - 64 Liters per minute
- 7. Acts as a filter!
- 8. Gases - Can go all the way to the deepest part of the lung.
Can either hurt tissues, enter the blood or both.
- 9. Particles
 - a. Big Ones - Filtered out in airways (branching, cillia, wetness).
 - b. Smaller Ones - Filtered out further down.
 - c. Smallest - All the way into the deepest part of the lung! Can enter the blood stream if soluble.

B. Aberdeen Examples

- 1. VCM
- 2. Lead
- 3. Nitrobenzene
- 4. Phthallic Anhydride

C. Your Protection1. Natural

- a. Gases - Cough reflex only! Works only if they irritate!
- b. Particles
 - (1) Filtration by the Lungs
 - (2) Phagocytes - Special cells that attack foreign objects.

2. What you can do!

- a. Have respect (not fear) for all chemicals.
- b. Consider all chemicals harmful.
- c. Keep your contact to a minimum.
- d. Keep your eyes open and see what is around you.
- e. Use "common sense."
- f. Respirators
 - (1) Use them!
 - (2) Use them correctly!
 - (3) Help keep them clean!
 - (4) Use the right type!
- g. Spills and Leaks
 - (1) Clean up!
 - (2) Report it to the boss!
- h. Use approved containers for liquids - Keep closed!
- i. Procedures and Rules - Follow them!

VIII. SWALLOWINGA. Digestive Tract Construction

- 1. Throat
- 2. Stomach
- 3. Small Intestine
- 4. Large Intestine

- B. What happens to materials from the lung? - You swallow them!

C. Aberdeen Chemicals That Can be Swallowed

1. Lead Compounds
2. Phthallic Anhydride
3. Biosperse

D. Your Protection

1. Natural - Very little!
2. What You Can Do
 - a. Same as in breathing
 - b. Wash hands before eating and smoking
 - c. Eat, drink, smoke only in approved areas
 - d. Don't take food, drinks, etc. into areas where they can become contaminated.
 - e. Housekeeping - Keep it clean! Your exposure is reduced to start with this way!

VIII. ABSORPTION THROUGH THE SKINA. The Role of the Skin - Your suit of armor!B. It is Susceptable to:

1. Irritants, such as acids and caustics
2. Sensitizers - Things that help trigger allergies, cause cancers, etc, Examples can be anything!
3. Solvents - Such as acetone, gasoline, alcohol, etc.

C. Examples of Harm

1. Effect of Using Strong Soap (a dining room steward)
2. Long Exposure to Caustics
3. Severe Frostbite
4. Skin Cancer - Excessive exposure to paraffins, tars, etc.
(a petroleum worker - unidentified)
5. Skin Cancer - A roofer exposed to years of sunlight and roofing tar.

D. What You Can Do

1. Keep contact to a minimum!
2. Use barriers:
 - a. Faceshields
 - b. Glasses
 - c. Goggles
 - d. Gloves
 - e. Aprons
 - f. Rainsuits
 - g. Remember: When there's a question about how much protection you need, always err on your side; use enough!

IX. REVIEW

- A. You do have an interest in chemical exposure.
 1. You are exposed to them at work.
 2. Some can hurt you if they're not handled correctly.
- B. Ways chemicals enter the body.
- C. Examples of Injury
- D. Examples of Aberdeen chemicals that can hurt you.
- E. Things you can do and must do to help yourself.

SUGGESTION

FOR

REDUCING CHEMICAL EXPOSURES

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NAME: _____ DATE: _____

Please Return to Jerald Uptain