



Online Ethics Center
FOR ENGINEERING AND SCIENCE

Motivation and Scenario

Author(s)

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Description

The motivation and scenario of a student's project about research safety in laboratories prompted by her job as a new researcher in the laboratory where safety precautions were ignored.

Body

Motivation

After looking over my 7.02 lab safety sheet describing ethidium bromide (or EtBr), I was worried about our practices in the lab. (See Appendix A) I saw people touching the gels, which are stained with EtBr, with gloves and then touching other common objects in the lab, such as faucets and beakers. I also saw people dumping the gels in the garbage while the TA's watched. As a precaution I began wearing gloves all the time and washing my hands after leaving lab. Why didn't they mention something in lecture or recitation about how dangerous this ethidium bromide was? Was all this dumping a serious problem? To address these concerns, I interviewed an instructor in the 7.02 lab for my mini-project. In general, she seemed to take the problem very seriously, and said she felt there should be more education about these chemicals before lab in recitation. I decided to follow up on this issue for my final project. Instead of concentrating on educational labs, I shifted the focus to research labs to see how the problem is dealt with in a less controlled environment,

where no TA's are present to make sure people don't violate safety precautions.

Scenario

I am a new researcher in this laboratory, and part of my job is to prepare and run polyacridamide gels. I read the descriptions of the hazardous reagents involved in this procedure, and I found that the ethidium bromide used to stain the DNA is a strong carcinogen. I also noticed that acetone (a component of nail polish remover) was listed as a dangerous substance, and should never be breathed or touched. As I am working, I notice several other employees touching the gels containing ethidium bromide and then touching faucets or door handles. I also notice people disposing of the gels in the garbage instead of into the collection jar in the hood. What should be done in this situation?

1. Who do I contact first?
2. Do you see this situation as a legitimate safety hazard?
3. What should be done about the ethidium bromide that has been poured down the drain or thrown in the garbage?
4. Who decides what the unsafe disposal limit is?
5. Should the community be informed? When?
6. What is OSHA? How are they involved in this lab?
7. Is the lab inspected? By whom?
8. Who determines and enforces the safety regulations?
9. Do you trust that the lab's door handles and faucets are free from hazardous substances?
10. Where do you get information about dangerous substances?
11. How much faith do you place in this information?
12. How are new employees educated about safety practices? What is mentioned about ethidium bromide?
13. Do you have a list of emergency numbers?
14. When is the last time a number was called?

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Notes

Author: Gwen Crevensten, Real World Ethics 2.95j, May 1995.

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Use of Materials on the OEC

Resource Type

Case Study / Scenario

Topics

Collaboration

Lab and Workplace Safety

Safety

Discipline(s)

Chemistry

Life and Environmental Sciences

Research Ethics