

# **MONMOUTH COUNTY DEPARTMENT OF HEALTH**



**LABORATORY  
CHEMICAL  
MANAGEMENT**

**EDUCATORS  
SEMINAR**



# WHO IS THIS GUY?

- GREGORY HULSE
- 23 YEARS EXPERIENCE IN CHEMISTRY RELATED FIELDS.
- TECHNICAL LEVEL HAZMAT RESPONDER AND INSTRUCTOR FOR 16 YEARS
- CERTIFIED HAZARDOUS MATERIAL MANAGER (CHMM) AT THE MASTER LEVEL
- MEMBER OF ANJHHWC



# WHY ARE YOU HERE?

- YOUR BOSS INVITED YOU.
- PROPER CHEMICAL MANAGEMENT IS IMPORTANT.
- YOU ARE RESPONSIBLE FOR PROPER CHEMICAL MANAGEMENT.
- PROBLEMS EXIST THAT NEED ATTENTION.
- YOU CARE ABOUT THE PEOPLE YOU EDUCATE AND WORK WITH.

# NJSA 18A:16-6

The Board shall provide indemnification to any person holding any office, position or employment under the jurisdiction of the Board, including any student teacher, or person assigned to other professional pre-teaching field experience, for damages, losses, and costs incurred as a result of a civil or administrative action ~~suit~~ or other legal proceeding brought against any such persons for any acts or omissions arising out of and in the course of their employment or student teaching or other assignment to professional field experience with this Board. This indemnification will include all costs of defending such action, including reasonable counsel fees and expenses, together with costs of appeal, if any, and will hold harmless and protect such person from any financial loss resulting from such action. No employee will be held harmless or have his/her defense costs defrayed in a disciplinary proceeding instituted against him/her by the Board or when the employee is appealing an action taken by the Board. Indemnification for exemplary or punitive damages is not required and will be governed by the standards and procedures set forth in N.J.S.A. 59:10-4. The Board may arrange for and maintain appropriate insurance to cover all such damages, losses and expenses.

# WHAT PROBLEMS?

- OVER-ORDERING OF HAZARDOUS CHEMICALS.
- IMPROPER STORAGE OF HAZARDOUS CHEMICALS.
- KEEPING CHEMICALS BEYOND SHELF LIFE.

# **AVOIDING OVER-ORDERING**

1. HOW OFTEN DO I USE THIS CHEMICAL?
2. WHAT IS THE HAZARD OF THIS CHEMICAL?
3. WHAT IS THE EDUCATIONAL VALUE OF THIS CHEMICAL?
4. HAVE I USED THIS CHEMICAL BEFORE?
5. IS THE LAB EQUIPPED FOR THE SAFE USE OF THE CHEMICAL?

# LIFETIME COST

- REMEMBER - THE COST OF A CHEMICAL INCLUDES:
  - AMOUNT YOU BUY
  - STORAGE
  - PACKAGING
  - DISPOSAL



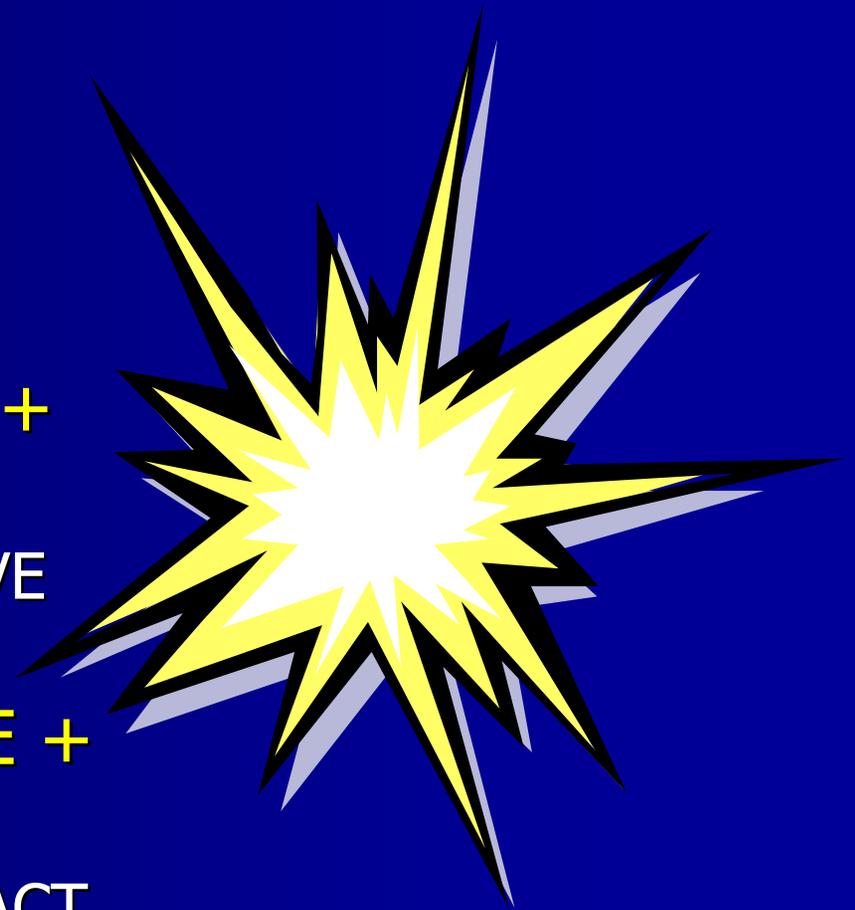
# IMPROPER STORAGE

- FLOOR STORAGE.
- IMPROPER PACKAGING.
- TOP SHELF STORAGE.
- STORAGE ABOVE EYE LEVEL.
- **ALPHABETICAL ORDER**



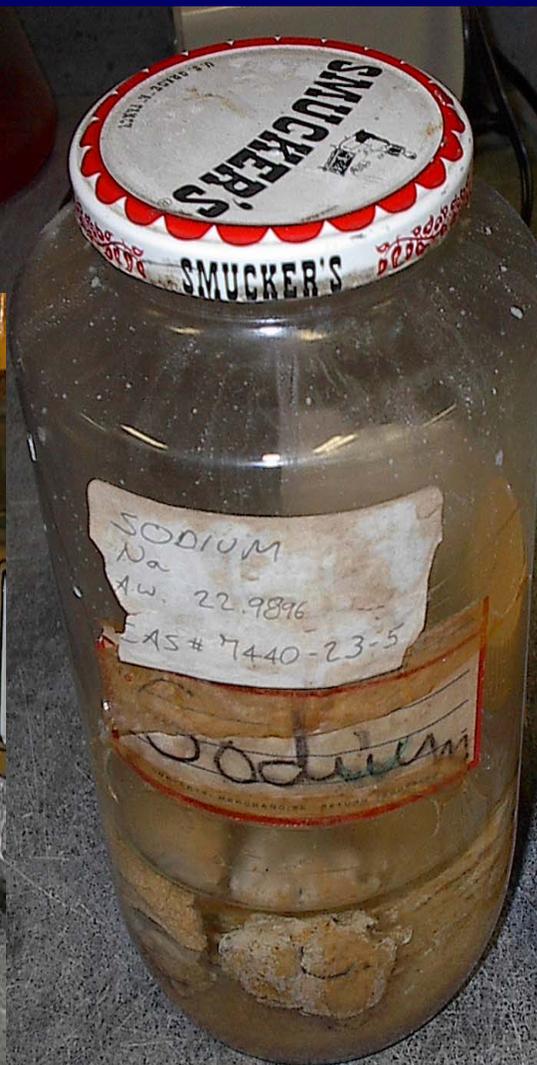
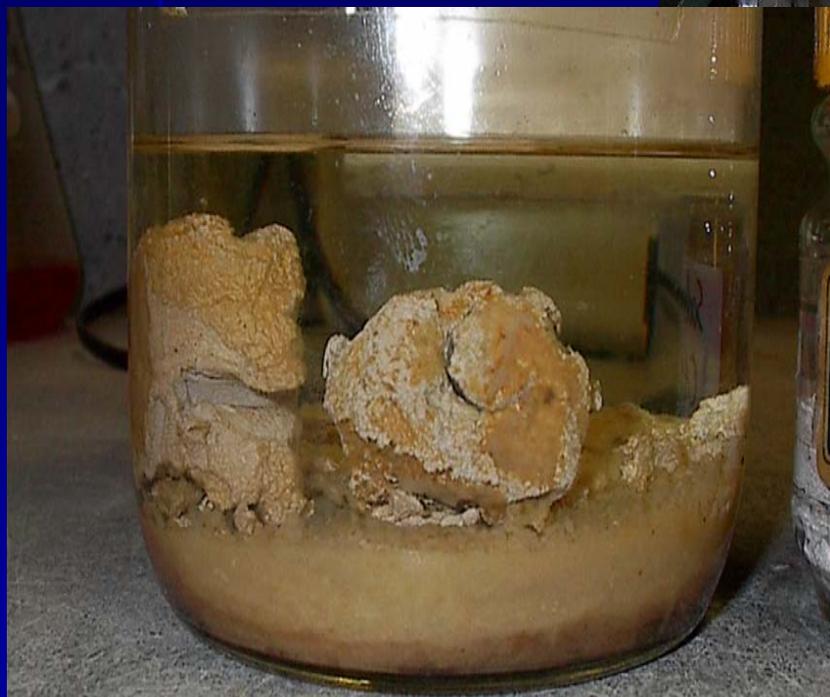
# SOME ALPHABETICAL STORAGE HAZARDS

- **ACETIC ACID + ACETALDEHYDE**
  - POLYMERIZES WITH HIGH HEAT RELEASE.
- **ACETIC ANHYDRIDE + ACETALDEHYDE**
  - VIOLENTLY EXPLOSIVE REACTION.
- **CADMIUM CHLORATE + CUPRIC DISULFIDE**
  - EXPLODES ON CONTACT.



# IMPROPER STORAGE

- IS THIS A PROBLEM?



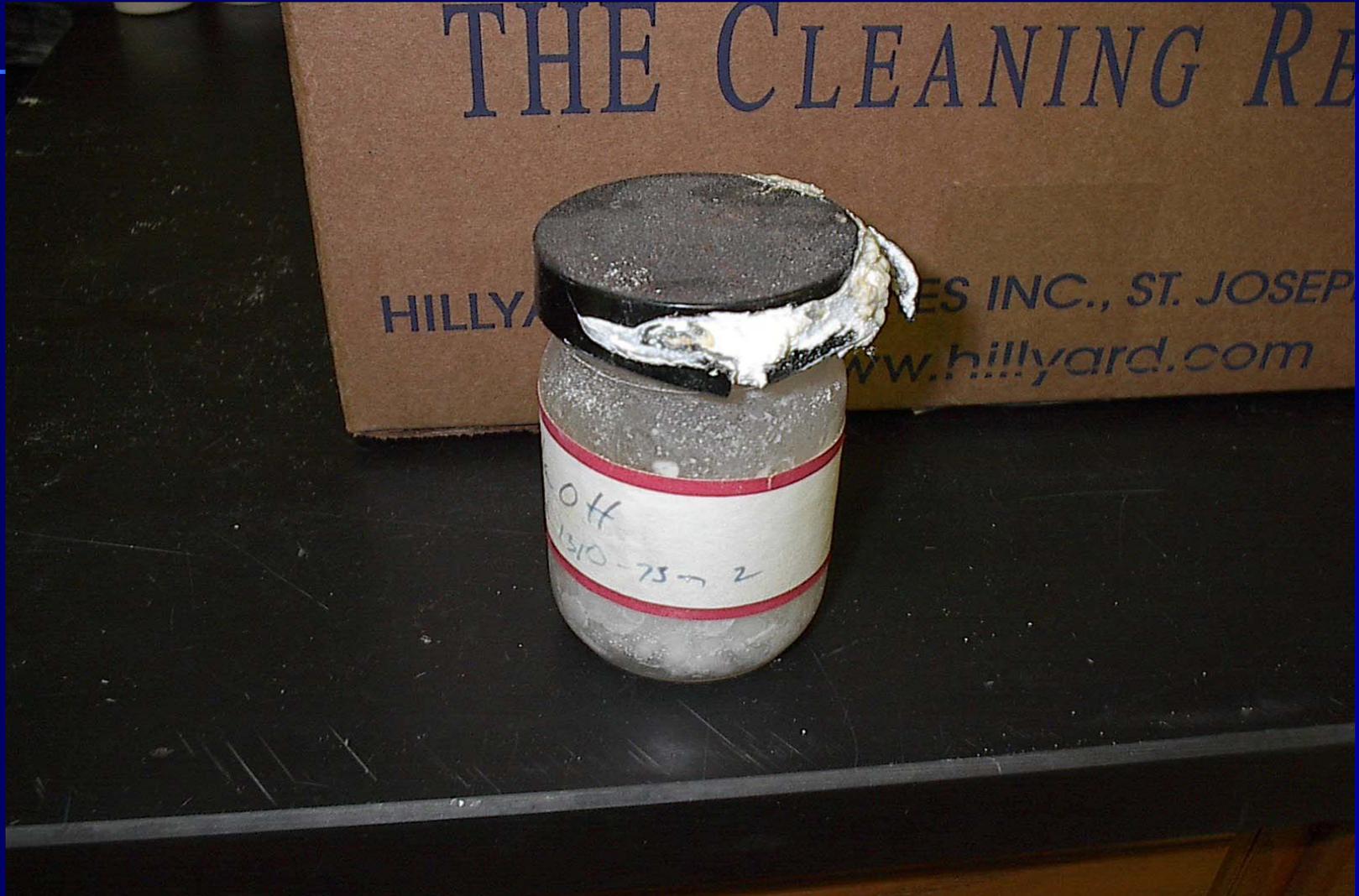
# IMPROPER STORAGE



# IMPROPER STORAGE



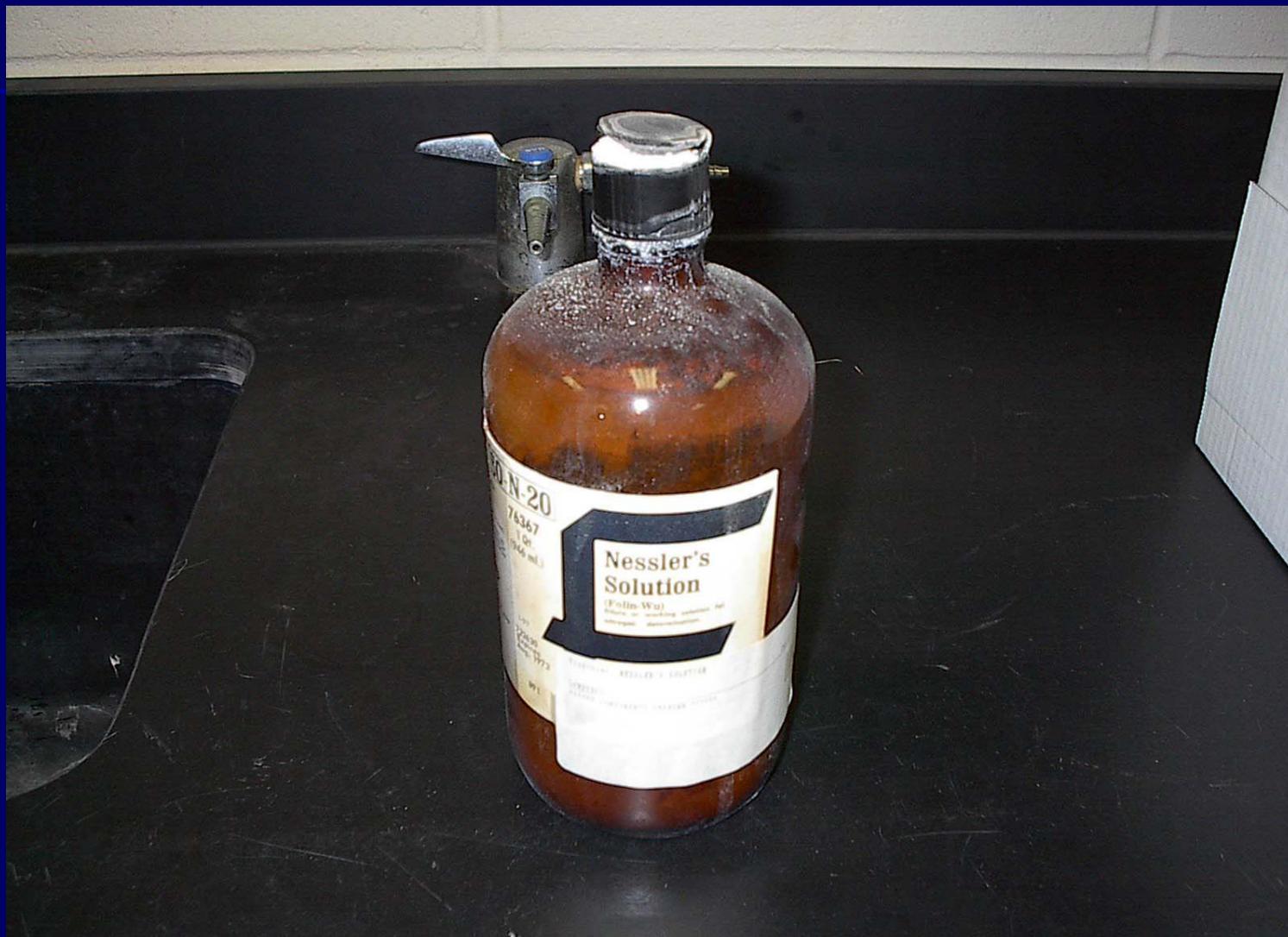
# IMPROPER STORAGE



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# IMPROPER STORAGE

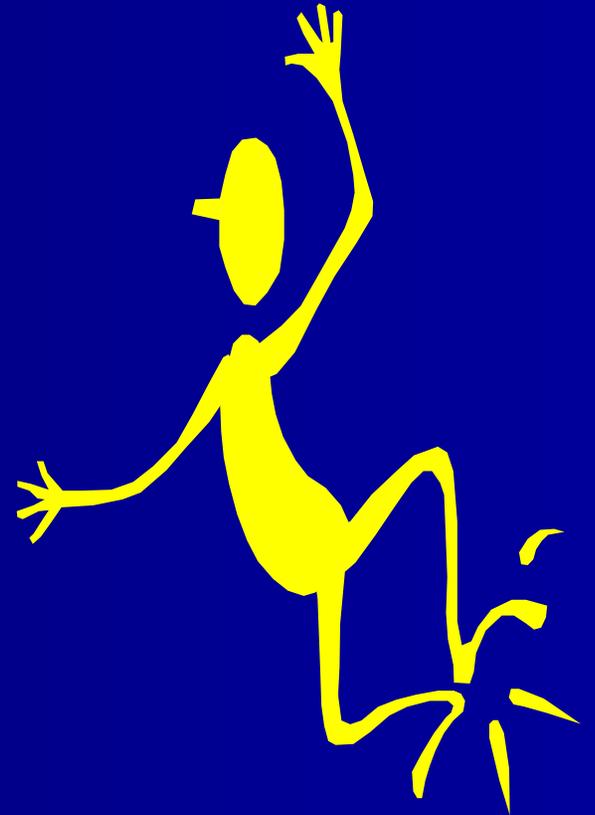


# IMPROPER STORAGE



# PROPER STORAGE

- SHELVES/CABINETS ATTACHED TO WALLS.
- ANTI-ROLL OFF LIPS ON SHELVES.
- WOOD CONSTRUCTION.
- ACIDS IN ACID CABINET.
- FLAMMABLES IN FLAMMABLE CABINET.
- SEVERE POISONS LOCKED IN POISON CABINET.



# SPECIFICALLY DANGEROUS CHEMICALS

- **CARBON DISULFIDE**
  - FLASH POINT  $-22^{\circ}\text{F}$ .
- **ETHYL ETHER**
  - STORE NO LONGER THAN 3 - 6 MONTHS OR FORMS SHOCK SENSITIVE EXPLOSIVE CRYSTALS.
- **ISOPROPYL ALCOHOL**
  - SAME AS ABOVE, BUT CAN BE STORED LONGER.
- **POTASSIUM METAL**
  - CAN DEVELOP PEROXIDE CRYSTALS WHEN CUT UP INTO SMALL PIECES AND IS REACTIVE TO MOISTURE.
- **PICRIC ACID**
  - FORMS EXPLOSIVE PEROXIDES.
- **PERCHLORIC ACID**
  - FORMS EXPLOSIVE PEROXIDES.

# CORRECTING THE PROBLEM

- TAKE AN INVENTORY
  - MAKE A DATABASE
    - KEEP TRACK OF WHAT YOU HAVE
- WHAT CHEMICALS ARE BEING USED
  - THE “RED DOT” SYSTEM
- ORGANIZE STORAGE AREA
  - OBTAIN PROPER SHELVES/CABINETS

# CORRECTING THE PROBLEM

- BAG OR CAN DANGEROUS CHEMICALS AS APPROPRIATE
- ORGANIZE CHEMICALS BY COMPATIBILITY
- ARRANGE FOR DISPOSAL OF "RED DOT" MATERIAL
- PURCHASE LESS AND USE LESS
  - SUBSTITUTE FOR PROBLEM MATERIALS

**THANK YOU FOR  
YOUR  
ATTENTION!**