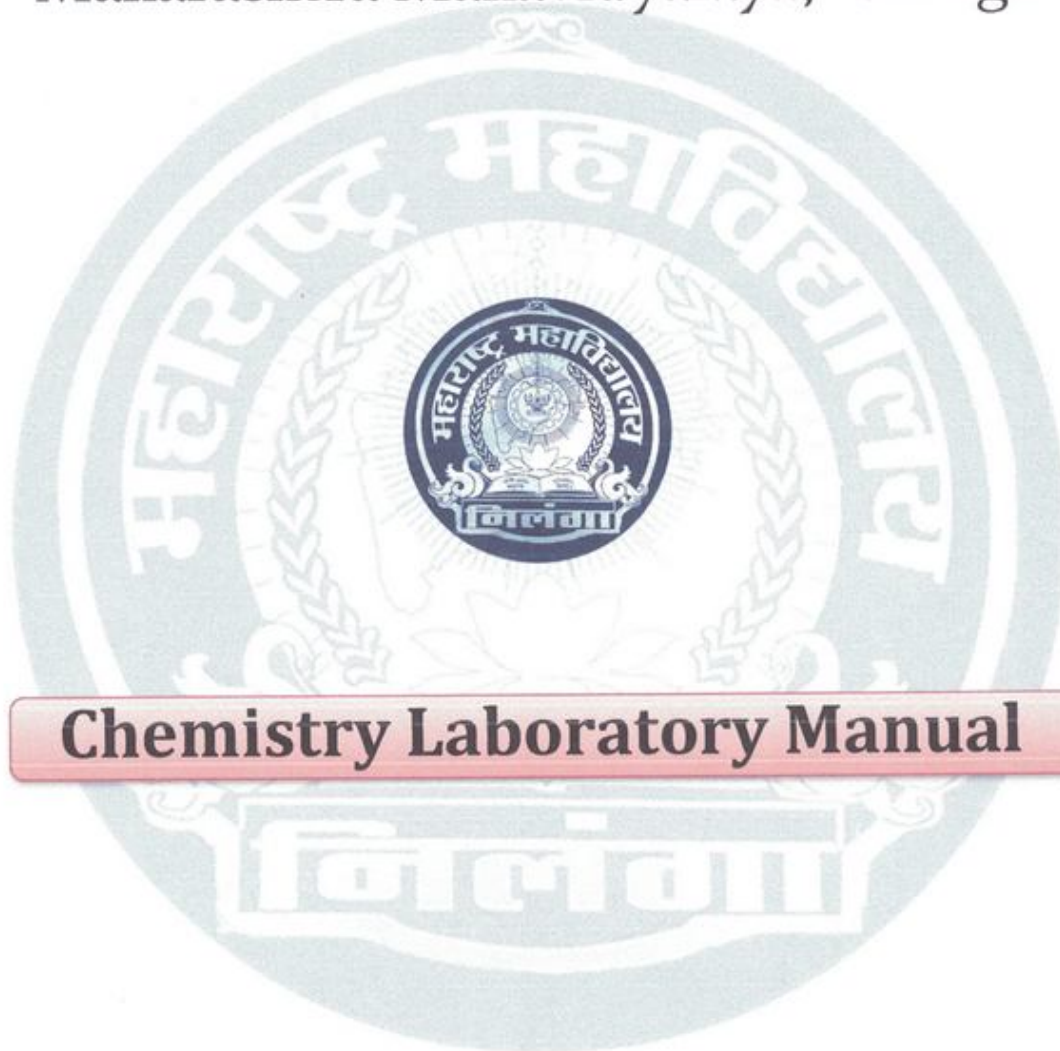


Maharashtra Shikshan Samiti's

Maharashtra Mahavidyalaya, Nilanga



Chemistry Laboratory Manual

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General Laboratory Protocols

Basic Rules

- Safety goggles are mandatory for all the lab workers
- Lab workers should not work alone inside the laboratory
- Everyone while working in the lab should wear lab coats and full pants.
- Lab-coats are not allowed in common areas like canteen, restrooms, staffrooms etc.
- Know the exits in the laboratory and in the building
- Use of blast shields is strongly recommended while doing potential dangerous reactions (such as dealing with peroxides, diazo-compounds, high pressure vessels, distillation of high boiling substances).
- Gloves shall be worn while working in the lab and should be removed before touching surfaces outside the work area (i.e., doorknobs, computers, etc.).
- Feet should be covered completely with shoes containing reasonable heel heights.

Open toe sandals and half pants/shorts should be avoided in the lab.

II- Safe Handling Glassware

1. Glass breakage is a common cause of injuries in laboratories. Only glass in good condition should be used.
2. Protect hands with leather gloves when inserting glass tubing. Hold elbows close to the body to limit movement when handling tubing.

3. Use glassware of the proper size. Allow at least 20% free space. Grasp a three-neck flask by the middle neck, not a side neck.
4. Conventional laboratory glassware must never be pressurized or used with vacuum.
5. Never carry glass under your arm or above your head.

III - Safe Handling of Chemicals

a) General Guidelines.

The first rule of chemical safety is to always read the label and follow the instructions. From the industry chemicals come with labels, which provide information about the product's ingredients, usage, and safety precautions.

Working with potentially harmful chemicals is an everyday occurrence in a laboratory. Lecturers are requested to inform themselves about toxicological information and procedures for handling and storage of chemicals used. For most commercially available substances, detailed instructions are available in the Material Safety Data Sheet (MSDS). A hardcopy of MSDS for each lab is required.

Familiarize yourself with the pictograms and Hazard codes widely used to mark risks.

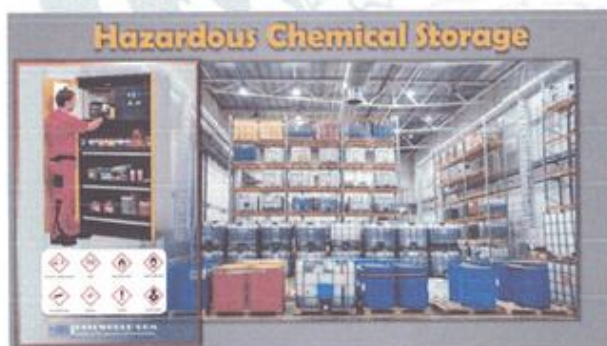


b) Chemical Storage

Proper storage of chemicals is necessary for chemical compatibility, fire/explosion control, to provide security, identification, and provide a 'user friendly' system with respect to point-of-use.

1. Reduce large inventory of chemicals in the laboratory.

2. Never pipette by mouth. Always use a bulb to pipette.
3. After using chemicals the container should be tightly closed and returned to its original place.
4. It is important to note all containers have the appropriate labels stuck to them. There should be no bottles without labels.
5. Corrosive chemicals should be stored in corrosion-resistant chamber.
6. The chemicals such as concentrated acids produces lot of fumes on exposing to the atmosphere such chemicals should be stored in a fume-hood.
7. The chemicals which as low boiling and unstable at room temperature should be stored in freeze.
8. The chemicals which are explosive keep away from all ignition sources such as open flames, hot surfaces, spark sources, and direct sunlight. Store explosive chemicals in an explosive magazine.
9. Hazardous chemicals must be stored in safety cans.
10. The organic and inorganic chemicals should be stored separately. The chemicals should be stored by major storage groups acids, bases, flammables, oxidizers, and highly toxic.
11. Liquids chemicals never stored above the solid chemicals.
12. Radioactive material should be stored on separate shelf/freezers in different rooms.



IV-Housekeeping

- Lab areas are to be kept clean and uncluttered.
- Spills should be cleaned up immediately from work areas and floors.
- Equipment and instrumentation shall be cleaned to remove spillage and contamination before repair or calibration service is requested.

- Ensure unblocked access to all of the following:
- Eyewash/safety showers
 - Fire extinguishers
 - Chemical storage cabinets
 - Waste containers



V- Emergency contact numbers:

- 1) Head of department- 8275454224
- 2) Lab-Assistant- 7517353517
- 3) Hospital- 08055735121
- 4) Fire Service- 101
- 5) Ambulance- 108

Policy Signed by



(Signature)
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