



Centurion
UNIVERSITY

Security for plant machinery and the employees,
Plant Maintenance.

**DEPARTMENT OF AGRICULTURAL ENGINEERING, SoABE
CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT
PARALAKHEMUNDI, ODISHA**



Outline

- Introduction
- Safety precaution during cleaning operation
- Safety precaution for handling hazardous chemicals
- Hygiene precautions
- Plant house keeping
- Types of maintenance
- Meaning of preventive maintenance
- Objective of preventive maintenance



Centurion
UNIVERSITY

Introduction

Safety precautions during cleaning operation

1. Tanks and vats
2. HTST Pasteurizer
3. Homogenizer
4. Milk condensing plant
5. Butter and ghee sections



Safety precautions for handling hazardous chemicals

- Instructions for handling hazardous chemicals should be prominently displayed.
- All containers should be clearly marked 'ACID' or 'POISON' as the case may be.
- While manual handling, barrels or drums full of caustic and other chemicals should be handled by at least two persons.
- A non-corrosive bottle carrier should be used while transporting acid bottles from storage to the plant.
- Employees opening containers and / or handling acids and poisonous chemicals should wear personal protective equipment such as rubber aprons, splash proof goggles and long sleeves over rubber gloves.
- While opening the chemical containers, the opener provided should be used and metal covers used after the drum has been opened.
- When removing acid from containers, tilting cradles or acid siphon and pumps should be used.



Hygiene Precautions

- Clean protective clothing must be worn. 'NO SMOKING' notices observed and all tools and equipment must be carried in closed tool boxes or bags.
- During maintenance operations, precautions must be concentrated on preventing the food product from being contaminated by extraneous material.
- It is therefore, essential that all fastening devices are secured firmly and that only fixing part such as washers or split pins used are non-corrosive when likely to be in direct contact with the product or passing above the product.
- Oil, grease, solvent and compounds used on food machinery must be those recommended for such use.



Plant House – Keeping

- Whenever milk spills on the floor during receiving and packaging operations the floor should be immediately hosed and cleaned.
- Rubbish and damaged tins and bottles should be kept in bins especially meant for them.
- Milk cans, butter-oil tins, powder bags / containers, cases, cartons and rubber mats for cleaning should be piled only in designated areas.
- Dark areas should be artificially lighted and floors and stairways kept free of accumulated rubbish, broken glass, S.S. pipe lines, fittings and gaskets.



Centurion
UNIVERSITY

Plant Maintenance: Prevention & Break – Down Maintenance

Types of maintenance

1. Preventive maintenance
2. Corrective maintenance
3. Breakdown maintenance
4. Maintenance Prevention



Centurion
UNIVERSITY

Meaning of Preventive maintenance

Advantage of preventive maintenance

Objective of Preventive maintenance

- Increase the certainty of meeting daily production schedule.
- Reduce unscheduled downtime.
- Reduce costs of maintenance and repair.
- Reduce overall processing costs.
- Reduce utility usage.
- Reduce Bio-chemical Oxygen Demand (BOD) of sewage.
- Minimize property and personal hazards.
- Conserve raw materials.
- Conserve fuel.



Centurion
UNIVERSITY

Thank you