

NetZero Automation Requirements

Chemical Inventory Management System

User Roles & Access

Production Accounts

- Receive goods based on Purchase Order (PO) and batch-wise details, systematically recording them in the system for the washing process.
- Facilitate the delivery of processed goods after washing completion.

Quality Team

- Conduct quality checks and generate detailed quality test reports before authorizing goods for the bundling process.

Size Bundling

- Determine appropriate sizing for different types of goods and store sizing data in the system for batch-wise processing in the washing stage.

Research & Development (R&D) Team

- Generate and provide chemical recipes tailored for batch/PO-wise goods and submit them to the production team for execution.

Production Team

- Utilize QR code scanning functionality to start, pause, or resume production processes for PO-wise goods.
- Each production team member is assigned specific process steps and does not have access to unassigned steps.
- Monitor processing times for each step and oversee the overall workflow progress in real time.

Planning & Management Team

- Possess full system access, including comprehensive oversight of all production processes, machine capacity, and detailed washing process reports.

Merchandiser

- Limited access to view only their assigned goods data, including the current processing stage.
- Ability to track estimated completion times for full processing.

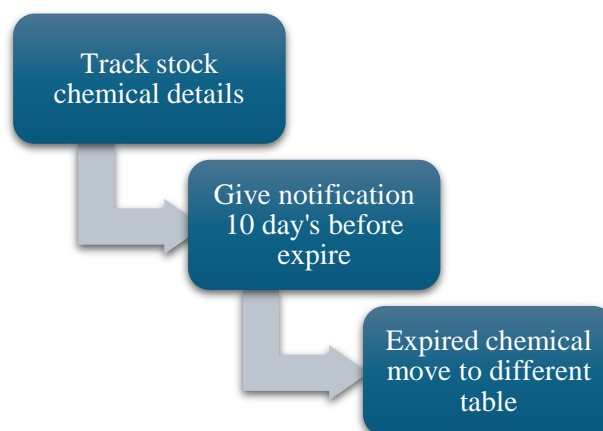
1. Chemical Stock In

Process Overview



- Chemicals procured through authorized buyers, accompanied by a challan and invoice, will be systematically recorded in the inventory.
- All essential product details, including batch number, quantity, manufacturing date, and expiry date as per the challan, will be meticulously logged.
- Display remaining shelf life for each chemical.
- Send alerts for low stock to ensure timely replenishment.

Reporting & Alerts



- A comprehensive report will track received chemical stock, detailing total quantity, manufacturing date, and expiry date.

- Automated expiry notifications will alert users 10 days before a chemical expires to enable timely handling or disposal.
- Expired chemicals will be categorized separately in a dedicated table for better compliance and inventory management.

2. Chemical Stock Out

Stock Reduction Methods

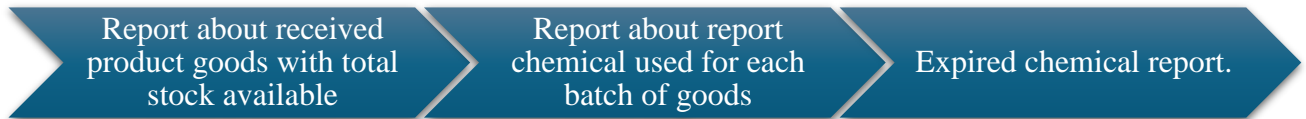
Standard Usage	Reprocessing Adjustments	Damaged Goods Exception
•Predefined chemical calculate based of types of goods.	•Selected goods that require reprocessing will send for rewash and deduct calculate chemical amount	•For damage goods no need for rewash process.

- **Standard Usage:** Predefined chemical requirements per product type (e.g., shirts vs. pants) will dictate chemical deductions based on batch size.
- **Batch/Lot-Based Calculation:** Chemical consumption will be tracked using Lot-wise, Batch-wise, PO-wise, or Style-wise criteria.
- **Reprocessing Adjustments:** If goods require reprocessing due to defects, the system will reallocate the necessary chemical quantity to maintain inventory accuracy.
- **Damaged Goods Exception:** If goods are irreparably damaged and cannot be reprocessed, no chemical stock deductions will occur.

3. Reporting & Documentation

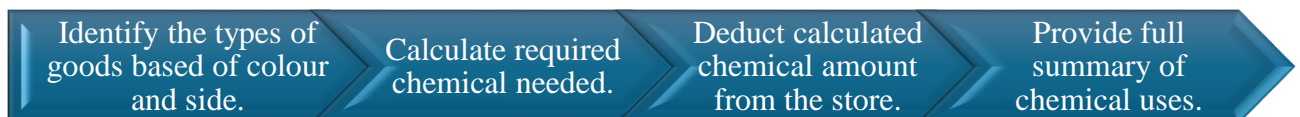
3.1 Stock Management Reports

Chemical Stock-In Report



- Records details of received chemicals, including batch number, quantity, manufacturing date, and expiry date.
- Provides a summary of the total chemical stock available.
- Detailed report chemical used for each batch of goods.
- Includes automated expiry notifications, alerting users 10 days before a chemical's expiration.
- Categorizes expired chemicals separately for better compliance and disposal management.

Chemical Stock-Out Report



- Tracks chemical consumption per lot, batch, PO, or style.
- Automatically deducts chemical quantities based on predefined usage for different product types (e.g., shirts vs. pants).
- Adjusts stock calculations for reprocessing requirements and excludes chemicals for damaged goods beyond repair.
- Provides a summary of remaining stock levels after deductions.

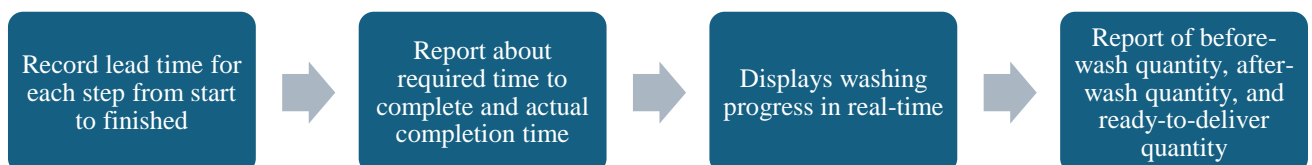
3.2 Goods Processing Reports

Goods Received & Processing Report



- Tracks goods from initial receipt to final delivery.
- Includes details of the first received date of the goods to the production team, the delivery of washed goods, the after-wash received goods date, and the final delivery date.
- Calculates the total day count from the first receipt of a batch to its last delivery.
- Differentiates between washed goods and those sent for rewash, along with the amount of chemicals used in rewash.

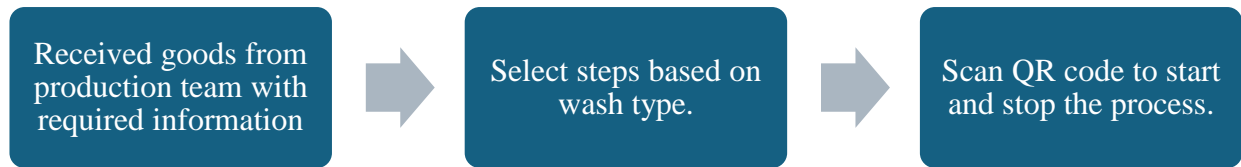
Washing Process Efficiency Report



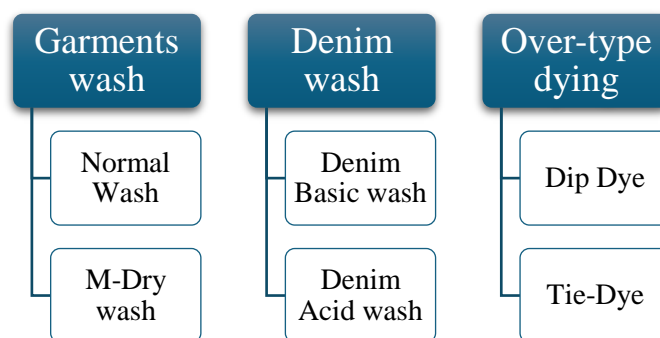
- Monitors the lead time for each step of the washing process, from garment washing to dyeing.
- Compares estimated processing times vs. actual completion times.
- Displays washing progress in real-time, including before-wash quantity, after-wash quantity, and ready-to-deliver quantity.

4. Goods Processing

4.1 Washing Process Tracking

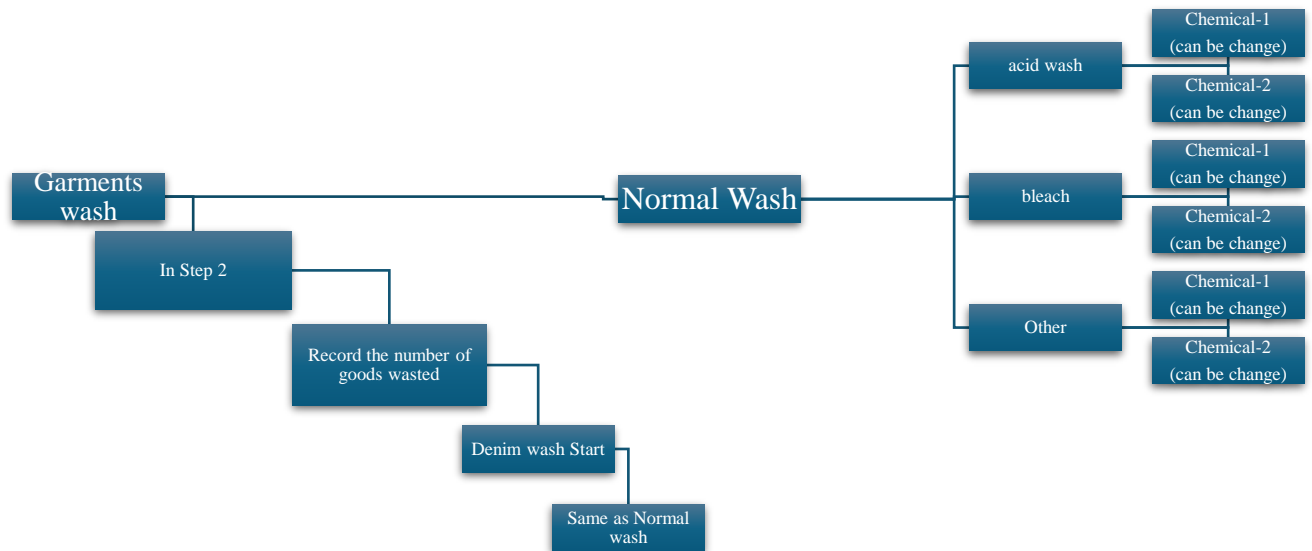


- Goods received will be transferred to the washing floor after quality checks and sizing, accompanied by a batch card detailing the washing requirements such as:
 - Type of wash (e.g., dry wash, hydro wash, basic wash, acid wash).
 - Required chemical quantity.
 - Chemical recipe specifications.
- The washing process will be conducted in sequential steps:



- Garments wash: Normal Wash → M-Dry wash.
 - Denim wash: Denim Basic wash → Denim Acid wash.
 - Over-type dying: Dip Dye → Tie-Dye.
- **Sub-Processing & Customization**

Each washing process consists of multiple sub-processes, with specific steps that can be customized as follows:



- **Chemical Adjustment & Repetition Control**

- Before starting each sub-step, users can modify predetermined chemical compositions.
- Users can also define the number of times a wash cycle will be repeated.

- **Quality & Waste Management**

After completing the first step and before proceeding to the next, users can:

- Record the number of goods wasted.
- Determine if certain goods require re-washing.

- **Initial washing times:**

- Garments wash: 2 days
- M-Dry: 2 days
- Denim Basic wash: 5 days
- Denim Acid wash: 5 days
- Over-type dyeing: 7 days

- If a process exceeds the expected time, the system will generate a report indicating additional time required.

- The system will track and display before-wash quantity, after-wash quantity, and ready-to-deliver quantity per batch.

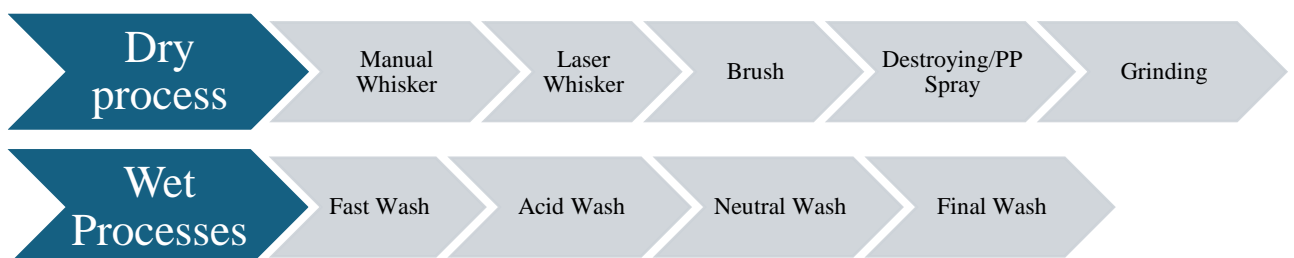


- QR code scanning will be used to initiate each processing step.
- Processing time for each step will be monitored, with status indicators:



- **Yellow:** In-progress
 - **Pause:** Orange
 - **Green:** Completed
- The system will generate a summary report detailing:
 - Time taken for each step
 - Total processing time

4.2 More Option in Wash Process:



- Dry process: Manual Whisker → Laser Whisker → Brush → Destroying/PP Spray → Grinding.
- Wet Processes in Daily Production: Fast Wash → Acid Wash → Neutral Wash → Final Wash
- User can choose any wash option for a batch of goods to start that process of wash.

Daily Planning:

1. Scheduled Work Overview

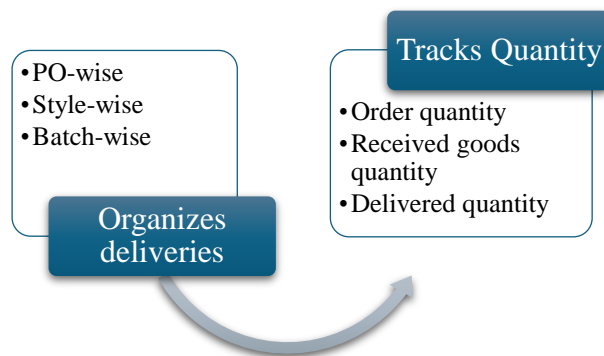
- Displays the tasks and plan for the day.

2. User Accessibility

- Ensures that all users can view the daily plan for better coordination and workflow management.

5. Delivery & Shipment Reports

Delivery Performance Report



- Organizes deliveries based on PO-wise, style-wise, and batch-wise categories.
- Tracks total order quantity, received goods quantity, delivered quantity, and remaining balance.
- Highlights defective goods and their impact on order fulfillment.

Shipment Report

- Records batch numbers, quantities, recipient details, and estimated vs. actual delivery times.
- Provides an overview of shipment history for auditing and compliance.

5.1 Performance Metrics Reports

First Time Through (FTT) Report

- Measures the percentage of goods successfully processed in the first attempt.

- Identifies areas requiring reprocessing and suggests process improvements.

Delivery In Full On Time (DIFOT) Report

- Tracks the percentage of orders delivered on time and in full.
- Identifies causes of delays and provides recommendations for process optimization.

Defects Per Thousand Units (DHU) Report

- Calculates the number of defective units per thousand processed goods.
- Evaluates supplier and production performance based on defect trends.

Working in Progress (WIP) Report

- Analyzes washing efficiency per batch.
- Identifies bottlenecks in the washing process and provides recommendations for improvement.
- Tracks average wash times and machine performance data.

Total Chemical Used (TCU) Report

- Reports total chemical consumption per lot, batch, PO, or style.
- Ensures cost efficiency and regulatory compliance.
- Identifies chemical wastage and suggests reduction strategies.

Forecasting & Projection Reports

- Estimates production timelines based on historical data and washing capacity.
- Predicts future capacity requirements and machine efficiency.
- Provides insights to optimize processing schedules and resource allocation.

5.2 Forecasting & Performance Metrics

- Each machine has a predefined washing capacity for various goods types.
- The system will analyze past washing capacities and generate estimates for processing times.

- Reports will measure efficiency, defect rates, and compliance, ensuring continuous improvement in production workflows.