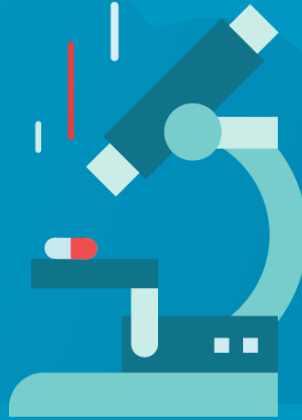
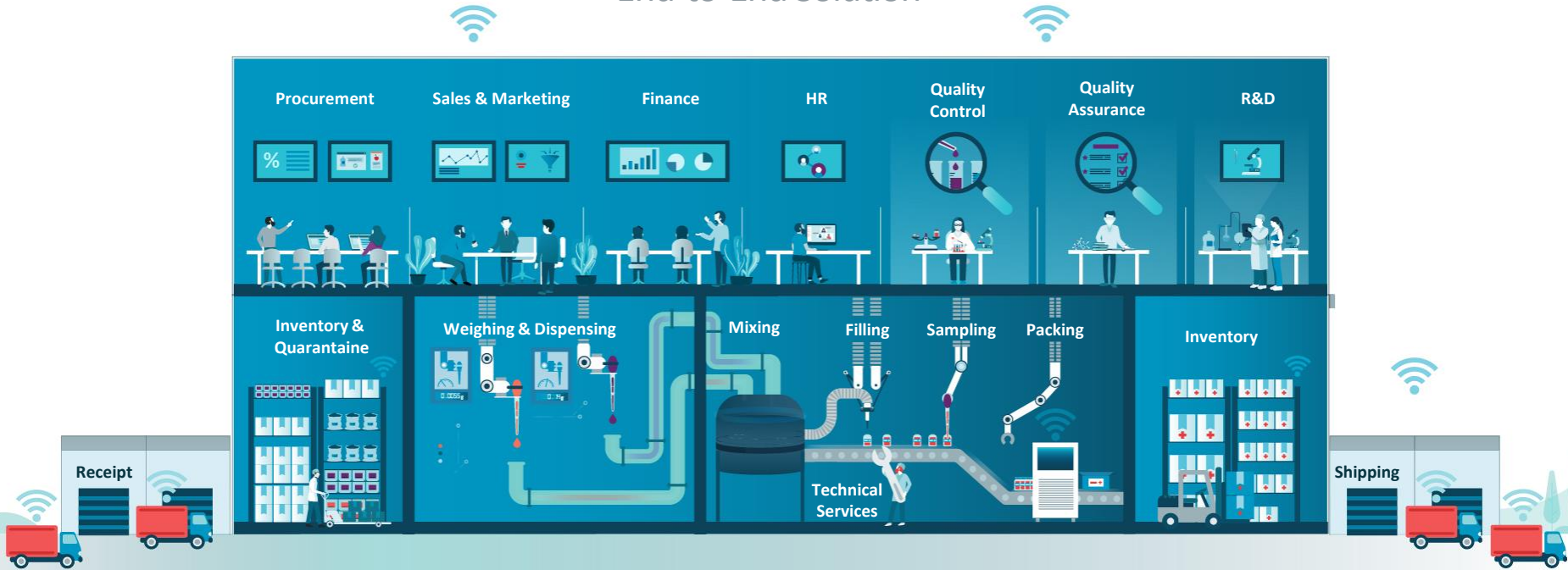


# Become a connected PHARMA & LIFE SCIENCES company



# Dynamics for Pharma

End-to-End Solution



# Dynamics for Pharma & Life Sciences

## Overview of the Key Capabilities



|                                      | Regulatory Compliance                                | Lot Traceability                                  | Pharma Manufacturing  | Quality Management                           | Inventory & Material Management            |
|--------------------------------------|--|---|---|--|--|
| <b>Microsoft Dynamics for PHARMA</b> | 21 CFR Part 11 Compliant Electronic Signature        | Container/Drum/Sub-Batch Management               | Weighing & Dispensing                                       | Vendor & Manufacturer Qualification/Approval | Temperature Monitoring                     |
|                                      | Mobile Device Security                               | Advanced Product and Batch Numbering              | Interface with Weighing Scales for W&D, Consumption and RAF | Advanced Specification/Test Group Management | Sampling                                   |
|                                      | Product Creation and Modification Approval Workflows | Approved Customer/Vendor/Manufacturer List        | Tolerance Management  | Statistical Test Criteria                    | RF Scanning & Barcoding                    |
|                                      | Advanced Shelf Life Date Calculation Rules           | Label Printing and Reprinting                     | Reconciliation of Production Components                     | Periodic/Skip Testing                        | Picking & Put Away Strategies              |
|                                      | Restrictions on Batch Disposition Changes            | Batch Disposition Traceability                    | Advanced Production Consumption in Mobile Device            | Quality Orders for Transfer & Sales Return   | Advanced Purchase Receipt in Mobile Device |
|                                      | QP Shipment Approval                                 | Forward/Backward Traceability & Recall Management | Rework & Reprocess Management                               | Quality Order Approval Workflow              | Advanced Production RAF in Mobile Device   |
| <b>Microsoft Dynamics</b>            | Planning & Manufacturing Execution                   | Inventory & Warehouse Management                  | Transport Management  | Product Information Management               |  |
|                                      | Project Management & Accounting                      | Expense Management                                | Procurement and Sourcing                                    | Asset Management                             |  |
|                                      | Marketing Management                                 | Financial Management & Budgeting                  | Sales Management  | Human Resource Management                    |  |
| <b>Business Intelligence</b>         | <b>Collaboration &amp; Portals</b>                   |   | <b>Workflow Management</b>                                  |  | <b>Integrations</b>                        |

# Key Drivers

What our customers are looking for in a Pharma & Life Sciences Solution

Regulatory  
Compliance

Lot Traceability

Pharma  
Manufacturing

Quality Management

Inventory & Material  
Management

## Comply with Regulatory Requirements

- Achieve and maintain compliance with GxP regulations and guidelines from international agencies and organizations (EMA, FDA, WHO, ICH, etc.).
- Produce and store accurate and consistent data, maintain a transparent and tamper-proof electronic audit trail for electronic records.
- Streamline Computer System Validation (CSV) activities in compliance with GAMP5 risk-based approach for GxP computerized systems, 21 CFR Part 11, 21 CFR Part 820 and EudraLex Volume 4 Annex 11 and Annex 15.



OBJECTIVE

# Key Drivers

## Overview of the Dynamics for Pharma & Life Sciences Solution

Regulatory Compliance

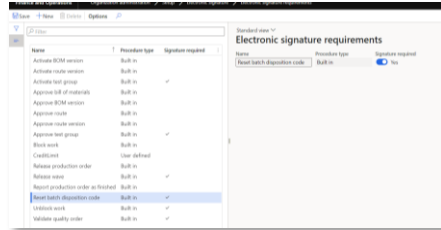
Lot Traceability

Pharma Manufacturing

Quality Management

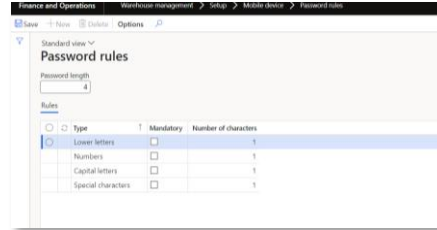
Inventory & Material Management

### Electronic Signature



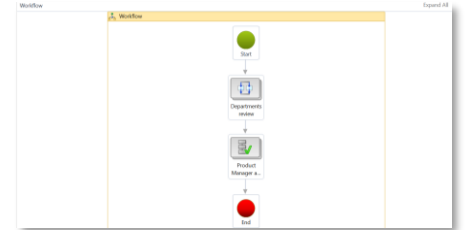
Enforce electronic signature requirements for GxP critical processes (approval of BOM's, approval of quality specifications, batch disposition changes, QP shipment approval, etc.)

### Mobile Device Security



Provide secure and traceable access to the mobile devices used by warehouse & production operators on the floor

### Product Approval Workflows



Set up multi-level configurable workflows for the creation and modification of released products, thus entrusting the corporate functions to populate the fields of their competence and tracking their approval



Solutions



# Key Drivers

What our customers are looking for in a Pharma & Life Sciences Solution

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Management

## Maintain Full Lot Traceability

- Improve the traceability of items throughout the entire supply chain with lot tracking and container/drum management.
- Monitor the lifecycle of each lot/batch of material from vendor receipt of raw materials through delivery of manufactured products to the customer.
- Promptly react to defective products and hazards to reduce customer chargebacks and avoid industry fines, as well as implement continuous improvement processes.



OBJECTIVE

# Key Drivers

## Overview of the Dynamics for Pharma & Life Sciences Solution

Regulatory Compliance

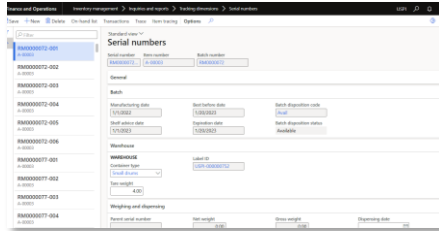
Lot Traceability

Pharma Manufacturing

Quality Management

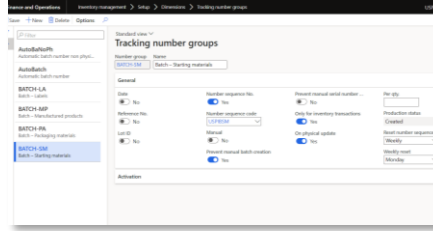
Inventory & Material Management

### Container/Drum Management



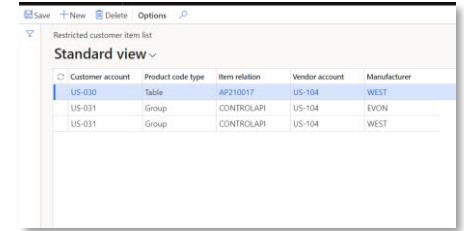
Uniquely identify each container/drum that is part of a specific lot, and maintain full traceability throughout the entire supply chain

### Product & Lot Numbering



Automatically generate product & lot numbers based on configurable rules, thus providing flexibility to meet the company-specific requirements

### Approved Customer/Vendor/Manufacturer



| Customer account | Product code type | Item relation | Vendor account | Manufacturer |
|------------------|-------------------|---------------|----------------|--------------|
| US-030           | Tablet            | AP210017      | US-104         | WEST         |
| US-031           | Group             | CONTROLAPI    | US-104         | EVON         |
| US-031           | Group             | CONTROLAPI    | US-104         | WEST         |

Enforce approval on the supply chain from the customer back to the supplier of the starting material and original manufacturer



Solutions





# Key Drivers

What our customers are looking for in a Pharma & Life Sciences Solution

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Management

## Operate Agile Factories

- Improve production efficiency and reduce downtime.
- Optimally plan and combine upstream & downstream manufacturing, packaging, MSAT and contract manufacturing processes
- Support production and raw material consumption in line with changing customer-specific requirements.



OBJECTIVE

# Key Drivers

## Overview of the Dynamics for Pharma & Life Sciences Solution

Regulatory Compliance

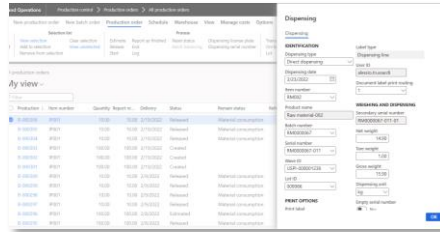
Lot Traceability

Pharma Manufacturing

Quality Management

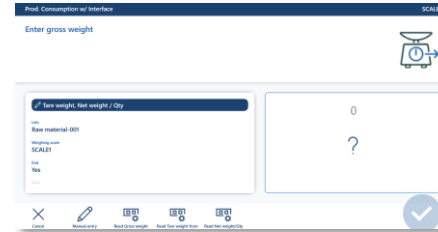
Inventory & Material Management

### Weighing & Dispensing



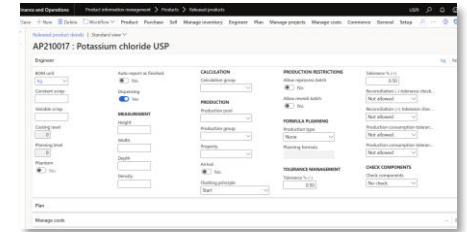
Introduce guided and precise execution of weighing & dispensing operations for production, in compliance with industry standards and regulatory requirements

### Interface with Weighing Scales



Implement real-time communication between weighing scales in the production room and the ERP system in order to automatically collect weight measurements directly from the scale

### Tolerance Management



Control tolerance specifications for picking, weighing & dispensing, reconciliation and material consumption



Solutions

# Key Drivers

## Overview of the Dynamics for Pharma & Life Sciences Solution

Regulatory Compliance

Lot Traceability

Pharma Manufacturing

Quality Management

Inventory & Material Management



## Solutions

### Reconciliation

Raw material-001  
Released qty: 70 kg  
Reconciled qty: 10 kg  
Discrepancy: -60 kg, Out of tolerance 70.00%

Back

Ensure all materials to be consumed for the production process of manufactured products are correctly accounted for, and no errors occur that may impact patient safety

### Production Consumption

Raw material-001

| Material         | Quantity | Unit | Status   |
|------------------|----------|------|----------|
| Raw material-001 | 100.00   | kg   | Released |
| Raw material-001 | 100.00   | kg   | Released |
| Raw material-001 | 100.00   | kg   | Released |
| Raw material-001 | 100.00   | kg   | Released |
| Raw material-001 | 100.00   | kg   | Released |
| Raw material-001 | 100.00   | kg   | Released |
| Raw material-001 | 100.00   | kg   | Released |
| Raw material-001 | 100.00   | kg   | Released |
| Raw material-001 | 100.00   | kg   | Released |
| Raw material-001 | 100.00   | kg   | Released |

Process material consumption with the mobile device ensuring any deviation from the standard formulation is small enough to have no impact on quality

### Rework & Reprocess

Production Consumption

| Production | Batch number | Quantity | Report no. | Status   | Reason status |
|------------|--------------|----------|------------|----------|---------------|
| 01-001-001 | 0001         | 100.00   | 01-001-001 | Released |               |
| 01-001-001 | 0002         | 100.00   | 01-001-002 | Released |               |
| 01-001-001 | 0003         | 100.00   | 01-001-003 | Released |               |
| 01-001-001 | 0004         | 100.00   | 01-001-004 | Released |               |
| 01-001-001 | 0005         | 100.00   | 01-001-005 | Released |               |
| 01-001-001 | 0006         | 100.00   | 01-001-006 | Released |               |
| 01-001-001 | 0007         | 100.00   | 01-001-007 | Released |               |
| 01-001-001 | 0008         | 100.00   | 01-001-008 | Released |               |
| 01-001-001 | 0009         | 100.00   | 01-001-009 | Released |               |
| 01-001-001 | 0010         | 100.00   | 01-001-010 | Released |               |

REWORK BATCH

REPROCESS BATCH

Handle reworking and reprocessing scenarios with a different level of restrictions according to GMP guidelines

# Key Drivers

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Regulatory  
Compliance

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Pharma  
Manufacturing

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Management



**OBJECTIVE**

## Quality by design

- Improve production standards and manufacture high-quality products
- Increase customers' confidence in the safety and effectiveness of medications
- Accommodate regular quality control tests, result tracking and implementation of corrective actions without the need for a separate Laboratory Information Management System (LIMS)



# Key Drivers

## Overview of the Dynamics for Pharma & Life Sciences Solution

Regulatory Compliance

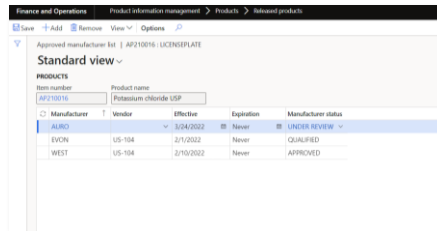
Lot Traceability

Pharma Manufacturing

Quality Management

Inventory & Material Management

### Vendor & Manufacturer Qualification/Approval

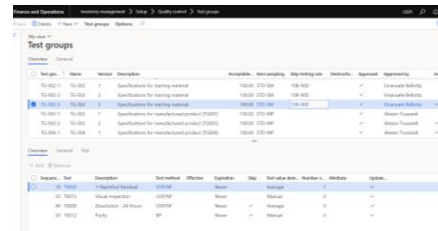


The screenshot shows a 'Standard view' of a product list. The table below is a representation of the data shown:

| Item number | Product name           | Manufacturer | Vendor | Effective | Expiration | Manufacturer status |
|-------------|------------------------|--------------|--------|-----------|------------|---------------------|
| AP110106    | Potassium chloride USP |              |        |           |            |                     |
| ALNO        |                        |              |        | 3/24/2022 | Never      | UNDER REVIEW        |
| EVON        |                        |              | US-104 | 2/1/2022  | Never      | QUALIFIED           |
| WEST        |                        |              | US-104 | 2/15/2022 | Never      | APPROVED            |

Perform selection, qualification, approval and maintenance of suppliers of starting materials, and drive quality control activities based on the qualification/approval status

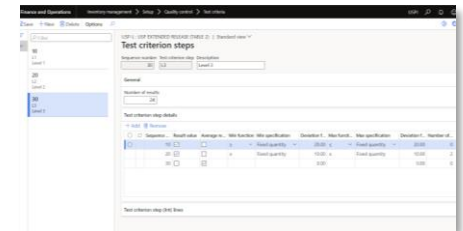
### Specification Management



The screenshot shows a 'Test groups' table with the following columns: Test group, Name, Description, Acceptance, Test method, Test method date, Method, Approval, Approval date, Action. The table contains several rows of test specifications for starting material and manufactured product.

Maintain authorized and dated specifications for all materials and track periodic revisions to comply with new editions of national pharmacopoeias or other official compendia

### Statistical Test Criteria



The screenshot shows a 'Test criterion steps' configuration screen. It includes a table for defining test criteria with columns for test name, test quantity, and test value. The table is currently empty.

Configure tests that require the definition of multi-level evaluation criteria (dissolution, uniformity of dosage, etc.)



Solutions



# Key Drivers

What our customers are looking for in a Pharma & Life Sciences Solution

Regulatory Compliance

Lot Traceability

Pharma Manufacturing

Quality Management

Inventory & Material Management

## Streamline Pharmaceutical Supply Chain

- Establish material requirements for production, control material usage and set specific goals for procurement and replenishment
- Simplify the supply chain workflow with built-in scanning capabilities of mobile devices and scanners
- Optimize sampling activities to consistently and rapidly monitor materials and interim products during production, thus accelerating product release



OBJECTIVE



# Key Drivers

## Overview of the Dynamics for Pharma & Life Sciences Solution

Regulatory Compliance

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Pharma Manufacturing

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Inventory & Material Management



## Solutions

### Temperature Monitoring

| Item   | Release            | Number   | Quantity | Unit | Batch number | Location | Temperature | Capacity | Current TOR | Expiry |
|--------|--------------------|----------|----------|------|--------------|----------|-------------|----------|-------------|--------|
| A-0000 | 3/17/2022 13:47 PM | Standard | 10000    | kg   | RM000008     | 8020     | 20220117-21 | 10000    | 1000        | 1000   |
| A-0000 | 3/17/2022 13:47 PM | Standard | 10000    | kg   | RM000008     | 8020     | 20220117-21 | 10000    | 1000        | 1000   |
| A-0000 | 3/17/2022 13:47 PM | Standard | 10000    | kg   | RM000008     | 8020     | 20220117-21 | 10000    | 1000        | 1000   |

Track the time spent by controlled items out of refrigerated zones (TOR/TOS) and compare it to the medicine's allowable excursion time

### Advanced Purchase Receipt

Check values, then confirm

Item: Cortison Aqua  
Lot: 001588  
Batch: RM001 • Qty: 20.00 kg • Inventory status: Available • Batch number: RM000008 • Serial number: RM000008-001  
Serial: RM001 • Qty: 20.00 kg • Inventory status: Available • Batch number: RM000008 • Serial number: RM000008-002

Cancel Confirm

Handle the inbound process of lot and container/drum receipt into the warehouse using mobile devices

### Advanced Production RAF

Check values, then confirm

Lot: 11  
Intermediate product: 001  
Batch: 10  
IPID: 9

Cancel Confirm

Create lots and containers/drums of manufactured product, print identification labels, and report as finished the actual quantity using mobile devices



*Dynamics for Pharma & Life Sciences  
combines **business software** with industry  
best practice **processes, insights** and a  
proven **methodology** to successfully  
implement*

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