

# **Supply Chain Data Reference Guide**

This document contains the complete data dictionary and usage guide for the intelligent agent system working with supply chain data. It includes both SQL database tables and auxiliary Excel files that reflect real-world business scenarios such as manual interventions, urgent decisions, and forecast overrides.

Each table/file is described by its purpose, use cases, and column definitions to help the agent interpret and use them correctly in automated reasoning and decision-making tasks.

# SQL Table Documentation

## **purchase\_orders**

*Description:* Captures detailed information about all purchase orders created in the system.

*Usage:* Use this table to analyze purchasing patterns, supplier reliability, order status tracking, or value of procurement over time.

| Column               | Description   |
|----------------------|---|
| po_number            | Unique identifier for the purchase order.                   |
| supplier_id          | Foreign key linking to the supplier providing the material. |
| material_id          | Foreign key linking to the material being ordered.          |
| order_date           | Date when the purchase order was created.                   |
| delivery_date        | Expected date of delivery for the order.                    |
| quantity_ordered     | The number of items ordered.                                |
| price_per_unit       | Cost per individual unit ordered.                           |
| po_status            | Current status of the PO: Open, Closed, or Cancelled.       |
| supplier_name        | Name of the supplier (denormalized for convenience).        |
| material_description | Name and specification of the material (denormalized).      |

## **suppliers**

*Description:* Maintains metadata about suppliers including their location and reliability.

*Usage:* Used to assess supplier performance, analyze delivery lead times, or segment vendors by region or rating.

| Column         | Description   |
|----------------|---|
| supplier_id    | Unique ID for the supplier.                                       |
| supplier_name  | Name of the supplier company.                                     |
| location       | Geographic location of the supplier.                              |
| lead_time_days | Average number of days taken by the supplier to fulfill an order. |
| rating         | Performance rating given to the supplier (1 to 5).                |

## **materials**

*Description:* Master list of materials available in the inventory.

*Usage:* Used for cataloging items, referencing in stock and procurement tables, and managing reorder logic.

| Column | Description |
|--------|-------------|
|        |             |

|                      |  |
|----------------------|--|
| material_id          | Unique ID for each material.                         |
| material_description | Text description of the material.                    |
| material_group       | Group classification (mechanical, electrical, etc.). |
| unit_of_measure      | Unit of measure (e.g., EA, KG, L).                   |
| current_price        | Current unit price of the material.                  |
| reorder_level        | Minimum inventory threshold to trigger reordering.   |

## **stock\_levels**

*Description:* Tracks real-time material stock at each plant.

*Usage:* Used for inventory health checks, reordering decisions, and calculating shortages or excesses.

| Column           | Description                                 |
|------------------|---|
| stock_id         | Unique ID of the stock entry.               |
| material_id      | Material being stocked.                     |
| plant_id         | Plant location of the stock.                |
| quantity_on_hand | Current available quantity at the location. |
| last_updated     | Timestamp of the last inventory update.     |

## **reservations**

*Description:* Tracks material reservations made for production, maintenance, or other use.

*Usage:* Use to understand material demand and ensure stock is allocated properly to planned operations.

| Column           | Description                                     |
|------------------|---|
| reservation_id   | ID for the reservation.                         |
| material_id      | Material that has been reserved.                |
| plant_id         | Location where the reserved material is needed. |
| reserved_qty     | Reserved quantity.                              |
| reservation_date | When the reservation was created.               |
| requested_by     | Requester of the material.                      |

## **plants**

*Description:* Master data on operational and warehouse plant locations.

*Usage:* Used to contextualize stock, movement, and consumption data with geographical and organizational locations.

| Column | Description |
|--------|-------------|
|        |             |

|            |                                |
|------------|--------------------------------|
| plant_id   | Unique ID for the plant.       |
| plant_name | Descriptive name of the plant. |
| location   | Geographic location or city.   |
| region     | Regional group classification. |

## goods\_receipts

*Description:* Logs material receipts against purchase orders.

*Usage:* Use for delivery confirmation, tracking procurement effectiveness, or inspecting discrepancies.

| Column       | Description                            |
|--------------|--|
| gr_id        | Unique ID of the goods receipt record. |
| po_number    | Related purchase order number.         |
| material_id  | Material that was received.            |
| received_qty | Quantity of material received.         |
| receipt_date | Date the material was received.        |
| inspected_by | Inspector or receiver name.            |

## consumption\_history

*Description:* Logs usage of materials over time.

*Usage:* Helps with forecasting, understanding usage trends, and tracking demand by purpose.

| Column         | Description                                 |
|----------------|---|
| consumption_id | Unique ID of the consumption event.         |
| material_id    | Material that was consumed.                 |
| plant_id       | Plant that consumed the material.           |
| date           | Date of consumption.                        |
| quantity_used  | How much was used.                          |
| purpose        | Use-case such as Maintenance or Production. |

## inventory\_movements

*Description:* Tracks movement of materials between plants.

*Usage:* Used for inventory balancing, logistics, and identifying inefficiencies in stock distribution.

| Column      | Description                     |
|-------------|---------------------------------|
| movement_id | ID of the movement transaction. |
| material_id | Material that was moved.        |

|                |   |
|----------------|---|
| from_plant     | Source plant.                               |
| to_plant       | Destination plant.                          |
| movement_date  | Date of movement.                           |
| quantity_moved | Quantity transferred.                       |
| movement_type  | Type of movement (Transfer, Scrap, Return). |

## **purchase\_requisitions**

*Description: Precursor to purchase orders, representing requests for materials.*

*Usage: Used in procurement planning and demand consolidation before PO creation.*

| Column         | Description                                       |
|----------------|---|
| pr_number      | ID for the requisition.                           |
| material_id    | Requested material.                               |
| plant_id       | Requesting plant.                                 |
| requested_qty  | Requested quantity.                               |
| requested_date | Date of the request.                              |
| pr_status      | Current status (Open, Approved, Converted to PO). |

# Excel File Documentation

## expedited\_orders.xlsx

*Description:* Contains manually tracked expedite requests not always reflected in ERP systems.

*Usage:* Used to prioritize urgent orders, investigate recurring breakdowns, or assess fulfillment performance against expedite flags.

| Column                  | Description  |
|-------------------------|--|
| po_number               | Reference to the purchase order being expedited.                     |
| material_id             | ID of the material requested on priority.                            |
| material_description    | Details of the expedited material.                                   |
| requested_delivery_date | Deadline by which delivery is needed.                                |
| expedite_reason         | Why the order was marked as expedited (e.g., breakdown, urgent job). |
| priority_level          | Urgency tier: High, Medium, or Low.                                  |
| expedited_by            | Person responsible for triggering the expedite.                      |

## supplier\_issues\_log.xlsx

*Description:* Captures issues reported with suppliers like late delivery or poor quality.

*Usage:* Helpful for supplier evaluation, contract renegotiation, or identifying risk-prone vendors.

| Column            | Description  |
|-------------------|--|
| supplier_id       | ID of the supplier.                                  |
| supplier_name     | Name of the vendor.                                  |
| issue_date        | When the issue occurred.                             |
| issue_type        | Type of issue (e.g., Late Delivery, Quality Defect). |
| resolution_status | Current status (Resolved, Pending, Escalated).       |
| notes             | Additional context or communication.                 |

## manual\_adjustments.xlsx

*Description:* Logs manual inventory corrections such as shrinkage or audit-based discrepancies.

*Usage:* Used for reconciling physical vs system inventory and identifying anomalies.

| Column          | Description                        |
|-----------------|------------------------------------|
| material_id     | Material being adjusted.           |
| plant_id        | Plant where adjustment was logged. |
| adjustment_date | Date of inventory correction.      |

|                   |   |
|-------------------|---|
| adjusted_qty      | Delta quantity (positive or negative).      |
| adjustment_reason | Cause for adjustment (e.g., Damage, Theft). |
| recorded_by       | User or auditor who recorded the change.    |

### **emergency\_reservations.xlsx**

*Description:* Tracks non-standard reservation requests triggered by urgent plant needs.

*Usage:* Important for agents prioritizing supply during disruptions or maintenance emergencies.

| Column         | Description                           |
|----------------|---------------------------------------|
| reservation_id | ID for the emergency reservation.     |
| material_id    | Material required urgently.           |
| plant_id       | Plant in need of the item.            |
| quantity       | Quantity reserved.                    |
| date           | Reservation creation date.            |
| reason         | Justification for emergency handling. |
| approved_by    | Managerial sign-off authority.        |

### **forecast\_overrides.xlsx**

*Description:* Stores manual changes to system-generated forecasts based on business context.

*Usage:* Allows agents to factor in upcoming promotions, known demand shifts, or leadership directives.

| Column              | Description  |
|---------------------|--|
| material_id         | Material with adjusted forecast.                   |
| month               | Month for which the forecast is being modified.    |
| system_forecast_qty | Original quantity predicted by forecasting engine. |
| override_qty        | Quantity modified by the planner or business.      |
| override_reason     | Justification for override.                        |
| requested_by        | Person who approved the override.                  |