# NATURE’S BEST DRINKS METADATA

## DimDate.csv

Table Description: This table is like a calendar, giving us all sorts of information about each specific day. DateKey (Integer): A unique number for each date, like 20250623 for June 23, 2025. It's the main way to link to specific dates.
FullDate (Date): The complete calendar date, like "June 23, 2025".

Quarter (Integer): Which three-month period of the year (e.g., Quarter 1 is Jan-Mar, Quarter 2 is Apr-Jun).
Month (Integer): The month number (e.g., 6 for June).
DayOfMonth (Integer): The specific day within the month (e.g., 23).
DayName (String): The full name of the day of the week (e.g., "Monday", "Tuesday").
WeekOfYear (Integer): Which week number it is in the year (e.g., week 25).

## 2. DimOperator.csv

Table Description: This table holds details about our factory workers who operate the machines.
**OperatorSK** (Integer): A unique ID number for each operator in our system.
**OperatorID_Natural** (String): The operator's actual employee ID.
**OperatorName** (String): The full name of the operator.
**Role** (String): The specific job the operator performs (e.g., 'Lead Operator' who oversees, 'Line Operator' who runs the machine, 'Material Handler' who moves supplies, or 'QC Technician' who checks quality).

## 3. DimMachine.csv

Table Description: This table lists all the production machines in our factory. **MachineSK** (Integer): A unique ID number for each machine in our system.
**MachineID_Natural** (String): The machine's specific name or ID (e.g., Filler_11).
**LineID** (String): Which production line the machine is on (e.g., Line1, Line2, Line3).
**MachineType** (String): What the machine does: a "Filler" puts liquid into bottles, and a "Capper" puts caps on them.
**InstallDate** (Date): The date when the machine was first set up in the factory.
**ModelNumber** (String): The manufacturer's model number for the machine.

## 4. DimNozzle.csv

Table Description: This table provides details about the small parts (nozzles) on our juice filling machines. **NozzleSK** (Integer): A unique ID number for each nozzle.
**NozzleID_Natural** (String): The nozzle's specific name or ID (e.g., Filler_11_N1 for Nozzle 1 on Filler machine 11).
**MachineSK** (Integer): Links to the specific "Filler" machine that this nozzle is part of.
**NozzleNumberOnMachine** (Integer): The position of the nozzle on its filling machine (e.g., 1, 2, 3, or 4).
**LastReplacementDate** (Date): The last time this specific nozzle was changed or replaced.

## 5. DimSupplier.csv

Table Description: This table contains information about the companies that supply us with empty bottles and caps. **SupplierSK** (Integer): A unique ID number for each supplier.
**SupplierID_Natural** (String): The supplier's unique ID.
**SupplierName** (String): The name of the supplier company.
**MaterialType** (String): What they supply us with: either "Bottle" or "Cap".
**Country** (String): The country where the supplier is located.

## 6. DimJuiceBatch.csv

Table Description: This table details each large quantity (batch) of juice we use. **JuiceBatchSK** (Integer): A unique ID number for each juice batch.
**JuiceBatchID_Natural** (String): The specific ID for the juice batch (e.g., JB250001).
**JuiceType** (String): The flavor or blend of the juice (e.g., "Premium Orange Blend").
**ProductionDate** (Date): The date when that batch of juice was made.
**ExpiryDate** (Date): The date when the juice batch will expire.
**TargetViscosity_cPs** (Float): How thick or runny the juice is *supposed* to be, measured in centipoise (cPs). Think of water having low viscosity and honey having high viscosity.

## 7. DimBottleBatch.csv

Table Description: This table provides information about each delivery (batch) of empty bottles we receive.

**BottleBatchSK** (Integer): A unique ID number for each bottle batch.
**BottleBatchID_Natural** (String): The specific ID for the bottle batch.
**SupplierSK** (Integer): Links to the supplier that provided this batch of bottles.
**BottleMaterial** (String): What the bottles are made of (e.g., "PET plastic").
**NominalVolume_ml** (Integer): The intended maximum volume the bottles are designed to hold, in milliliters (ml).
**DateReceived** (Date): The date when we received this batch of empty bottles.
**CostPerBottle_NGN** (Float): How much each bottle in this batch cost us, in Nigerian Naira (NGN).

## 8. DimCapBatch.csv

Table Description: This table provides information about each delivery (batch) of bottle caps we receive. **CapBatchSK** (Integer): A unique ID number for each cap batch.
**CapBatchID_Natural** (String): The specific ID for the cap batch (e.g., CB01_0001).
**SupplierSK** (Integer): Links to the supplier that provided this batch of caps.
**CapType** (String): The specific design or style of the caps.
**CapMaterial** (String): What the caps are made of (e.g., "HDPE plastic").
**DateReceived** (Date): The date when we received this batch of caps.
**CostPerCap_NGN** (Float): How much each cap in this batch cost us, in Nigerian Naira (NGN).

## 9. FactProductionEvent.csv

Table Description: This is the main record of every single bottle filled and capped. Each row represents one bottle passing through the filling and capping process, capturing all the details and measurements at that moment. It's where all the action happens!

**ProductionEventSK** (Integer): A unique ID number for this specific bottling event.
**BottleID_Natural** (String): A unique tracking number for the bottle itself (e.g., BTL250000001).
**Timestamp** (Datetime/String): The exact date and time when this bottling event was recorded.
**DateKey** (Integer): Links to the specific day this event happened (from the DimDate table).
**OperatorSK** (Integer): Links to the operator who was on duty during this event.
**LineID** (String): Which production line this bottle was processed on (e.g., Line1).

**Product** (String): The type of juice in this bottle (e.g., "Premium Orange Blend").
**Shift** (String): The work shift when this event took place (e.g., "Morning", "Evening", "Saturday").
**OperatorID_Natural** (String): The employee ID of the operator on duty for this specific bottle.
**OperatorRole** (String): The specific role the operator was performing for this event (e.g., "Line Operator").
**FillerMachineSK** (Integer): Links to the juice filling machine used for this bottle.
**CapperMachineSK** (Integer): Links to the capping machine used for this bottle.
**FillerNozzleSK** (Integer): Links to the specific nozzle on the filling machine that filled this bottle.

**JuiceBatchSK** (Integer): Links to the batch of juice that went into this bottle.
**BottleBatchSK** (Integer): Links to the batch of empty bottles this particular bottle came from.
**CapBatchSK** (Integer): Links to the batch of caps this particular cap came from.
**TargetFillVolume_ml** (Float): The ideal amount of juice that *should* be in the bottle, in milliliters.
**ActualFillVolume_ml** (Float): The actual amount of juice measured in the bottle after filling, in milliliters.
**FillSpeedBottlesPerMin_Set** (Float): The target speed the filling machine was set to, in bottles per minute.
**FillSpeedBottlesPerMin_Actual** (Float): The actual speed the filling machine operated at, in bottles per minute.
**JuiceTemperatureC_In** (Float): The temperature of the juice right before it entered the filling machine, in degrees Celsius.
**JuiceViscosity_cPs_Actual** (Float): The actual measured thickness/runniness of the juice that went into the bottle, in centipoise.
**TargetCapTorque_Nm** (Float): The ideal "tightness" (how much twisting force) the capping machine *should* apply to the cap, measured in Newton-meters (Nm). This ensures the cap is sealed correctly without being too loose or too tight.
**ActualCapTorque_Nm** (Float): The actual "tightness" measured for the cap on this bottle, in Newton-meters. *Note: This column might sometimes contain "sensor_broken" if the sensor failed.*

**CapHopperLevel_Percent** (Float): How full the cap storage bin (hopper) on the capping machine was, as a percentage.
**AmbientTemperatureC_Line** (Float): The air temperature around the production line when this bottle was processed, in degrees Celsius.
**AmbientHumidityPercent_Line** (Float): The amount of moisture in the air (humidity) around the production line, as a percentage.
**Defect_Type** (String): What kind of problem (if any) was found with this bottle: "None" (no defect), "Underfilled" (not enough juice), "Leaky_Cap" (the cap leaks), or "Both" (both underfilled and leaky).
**LeakTestResult** (String): The outcome of the test to see if the bottle leaks: "Pass" (it doesn't leak) or "Fail" (it leaks).
**UnderfillAmount_ml** (Float): How much the actual juice volume differs from the target. If this number is negative, it means the bottle was underfilled.
**FillerMaintenanceLast_Days_Snapshot** (Float): How many days it had been since the filler machine was last maintained when this bottle was produced. A higher number might indicate it's due for service.
**CapperMaintenanceLast_Days_Snapshot** (Float): How many days it had been since the capping machine was last maintained when this bottle was produced.