

ii. Data calculated in Dynasys

Datafield	Formula	Explanations
SHS Replenishment Lead Time (RLT)	RAW MAT PTS LT = 15 BULK MTS LT = 5 FP LT = 5 PACKAGING PTO LT = 15 SHS RLT : 20 = 5 + 15 RAW MAT PTO LT = 15 BULK MTO LT = 5 FP LT = 5 PACKAGING PTO LT = 15 SHS RLT : 25 = 5 + 5 + 15	According to the solution in DynaSys, the shortest path taking into account the material availability so no need to consider the packaging PTO. Warning: The SHS RLT is the same Material but only the packaging PTO is different.
DIOH	(Target Inventory Volume)*365 DIOH Calculation Target = ----- (Total Future Demand Volume of Next 3 months end)*4 (Safety Stock Volume)*365 DIOH Min Target = ----- (Total Future Demand Volume of Next 3 months end)*4 (2*Cycle Stock + Safety Stock Volume)*365 DIOH Max Target = ----- (Total Future Demand Volume of Next 3 months end)*4	Days Inventory In Hand
Safety Stock	Safety Stock past demand RLT = k * σ_{past demand weekly} * √RLT_{weeks} Rate calculation (Step 1 and 2) Safety Stock_M = (SS_{Past demand RLT} / Average Past Demand_{during RLT}) X Future demand during SHS RLT (Step 3)	What is Safety Stock? “A quantity of stock held to guard against the risk of a shortage in demand or supply.” The Safety Stock is calculated based on the variability in demand or supply. 1) Calculation of Safety Stock 2) Adjust (divide) past demand RLT by the SHS RLT Coeff of Variation < 1 Coeff of Variation > 1

Cycle
Stock

Cycle Stock Calculation

P&I Dynasys Method

Production Strategy	Batch/AvgNZDemand < 4	Batch/AvgNZDemand > 4
MTS	$(RQ_{\text{max}} / \text{Inb}_{\text{max}}) / 2$	
MTO	SI DRLT > 0, DRLT * 7 / (SHS RLT), 0	SI DRLT > 0, $(RQ_{\text{max}} / \text{Inb}_{\text{max}}) / 2$, 0
MTO-FB	0	

RQ_{max} (Replenishment quantity): SI(DRLT > Batch Size; (batch size + (ARROUND1.SUP((DRLT - batch size/Rounding Value,0)*Rounding Value)); SI(DRLT > 0, batch size, 0))
Batch size: fixed lot size or min lot size depending on lot size field in MRP
Rounding Value: if min lot size use SAP info rounding value else equals fixed lot size
Inb_{max}: The number of inbound shipment(s) during RLT
DRLT: Demand during the RLT ((Future demand during SHS RLT)
*At the warehouse we should not have MTO products
AVgNZDemand: average weekly past non zero demand (last 24 months)



Cycle Stock Formula

Raw Materials/ Intermediates

(Purchased Product)

Purchasing Strategy	
PTS	$(PQ_{\text{max}} / \text{Inb}_{\text{max}}) / 2$
PTO	$(PQ_{\text{max}} - (DPLT * 7 / (\text{SHS RLT}))) / 2$

PQ_{max} (Procurement quantity): Max(FutureDmd X PLT ; MOQ X Nb of Replenishments Needed)
MOQ: Batch size
Inb_{max}: The number of inbound shipment(s) during PLT
PLT: Procurement Lead Time
DPLT: Demand during the PLT
Nb of Replenishments Needed: ROUNDUP (SI(PLT > 4 (Weeks); DPLT [weeks]) / MOQ; ((Future demand Month M/4) * RLT) / MOQ

What is Cycle Stock

"Cycle stock is the replenishment of i

- Cycle stock inv during a given for FG refers to
- It is one of the inventory need place a custom

Target
Stock

- Target stock or "optimal stock" is simply:

$$\text{Target Stock} = \text{Safety Stock} + \text{Average Cycle Stock}$$

- Some sites ma stock. For exa material can nc physically cons
- Target stock is or FG just prod stock is low – v complete. So t
- How often shou change occurs

>