Oral Solid Dose Manufacturing Course: Granulation, Compression, Coating and Tablet Troubleshooting

2 – 6 August 2027
London - Central London four-star



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Introduction:

Oral solid dose manufacturing, covering granulation, compression, coating and tablet troubleshooting, is a 1-week course for staff who run, supervise and improve tablet and capsule lines at generic plants, ending with a Tablet Line Troubleshooting and In-Process Control Plan for a case product. Batches are lost when granule moisture drifts, presses cap or stick, coating pans twin cores and weight checks are read too late to act. Nominees already operate or supervise granulators, presses, coaters or capsule fillers, and learn through inspection walkthroughs of case lines and batch data. CoreConcept Training Center delivers this oral solid dose manufacturing course.

Course Objectives:

- Select a process route among direct compression, wet granulation and dry granulation from powder flow, moisture sensitivity and dose data
- Set blending, high-shear granulation, fluid-bed drying, roller compaction and milling parameters to reach target granule moisture and size distribution
- Run rotary press, pan coater and capsule filler settings with in-process checks for weight, thickness, hardness, friability and disintegration
- Diagnose capping, lamination, sticking, picking, weight variation and coating faults and correct them at granule, tooling or machine level
- Measure tablet press and coater OEE and rank availability, speed and reject losses for action
- Produce a Tablet Line Troubleshooting and In-Process Control Plan for a case generic product

Target Audience:

- Staff responsible for supervising blending, granulation, drying and milling shifts on solid dose lines
- Staff responsible for setting up rotary tablet presses, changing tooling and adjusting compression parameters
- Staff responsible for film coating and capsule filling operations and their in-process records
- Staff responsible for executing batch manufacturing records and in-process decisions on the production floor
- Process engineering staff responsible for parameter settings, scale-up batches and line improvement
- Technical services staff responsible for investigating tablet defects, yield losses and press stoppages

Course Outline:

Day 1: Solid Dose Process Routes, Powder Behaviour and Line Baseline

- Process Route Selection From Direct Compression to Wet Granulation
- Particle Size, Bulk Density and Tapped Density for Blends
- Carr Index and Hausner Ratio Flowability Checks on Powders
- Excipient Roles of Binders, Disintegrants, Glidants and Lubricants
- Line Baseline Review of Yields, Rejects and Press Stoppages

Day 2: Blending, Wet and Dry Granulation, Drying and Milling Technology

- Bin Blender Time, Fill Level and Segregation Risk Checks
- High-Shear Granulator Binder Addition and Power Draw Endpoint
- Fluid-Bed Dryer Inlet Temperature and Loss on Drying Targets
- Roller Compactor Roll Force, Gap and Ribbon Density Settings
- Conical Mill Screen Size and Impeller Speed for Granule Distribution

Day 3: Tablet Compression, Film Coating, Encapsulation and In-Process Checks

- Rotary Press Precompression, Main Compression and Dwell Time Settings
- Punch and Die Tooling Inspection, Polishing and Storage Routine
- In-Process Checks for Weight, Thickness, Hardness and Friability
- Perforated Pan Coater Spray Rate, Atomising Air and Bed Temperature
- Capsule Filler Dosator and Tamping Pin Fill Weight Adjustment

Day 4: Tablet Defect Diagnosis, Coating Faults and Press OEE Losses

- Capping and Lamination Causes From Entrapped Air and Fines
- Sticking and Picking Diagnosis Through Lubricant, Moisture and Embossing
- Weight Variation Traced to Feeder Speed, Flow and Segregation
- Coating Faults Including Twinning, Orange Peel and Logo Bridging
- Tablet Press OEE Split Into Availability, Performance and Quality

Day 5: Inspection Walkthrough and Tablet Line Troubleshooting Plan

- Case Granulation Suite Walkthrough Against Parameter Records
- Case Press Batch Data Review of Weight and Hardness Trends
- Case Coating Run Fault Tree for Rough and Twinned Tablets
- In-Process Sampling Frequency and Action Limit Table Drafting
- Tablet Line Troubleshooting and In-Process Control Plan Completion

Skills You Will Gain:

- Powder Flow Assessment
- Granulation Endpoint Control
- Roller Compaction Setting
- Rotary Press Adjustment
- Film Coating Parameter Control
- Capsule Fill Weight Control
- Tablet Defect Diagnosis
- Press OEE Loss Analysis

Why Attend This Course:

- Deliver a Tablet Line Troubleshooting and In-Process Control Plan to the production manager and technical services lead for use on the case product line
- Decide whether a capping, sticking or weight drift event needs a granule, tooling or press adjustment before the batch continues
- Avoid rejected batches, scrapped coated cores and lost press hours caused by late detection of drifting in-process results
- Coach operators and junior supervisors on press set-up, coating pan checks and defect recognition using the course checklists

Conclusion:

Back at the plant, the participant hands the production manager and technical services lead a Tablet Line Troubleshooting and In-Process Control Plan for one product. Supervisors use it to set sampling frequencies and action limits on granulators, presses, coaters and capsule fillers, and to decide which adjustment comes first when a defect appears. Engineers use its OEE loss ranking to target the stoppages and rejects that cost the most output. After the first campaign under the plan, the unit should compare reject rates, press downtime and in-process excursions with the baseline and tighten limits that missed drift.

Frequently Asked Questions FAQ:

What should participants know before the oral solid dose manufacturing course?

Participants should already run, supervise or set up granulation, compression, coating or encapsulation equipment and read batch records. No advanced mathematics is needed. Bringing anonymised in-process data, a press stoppage log or a defect photograph helps them apply the walkthroughs to their own line.

How does oral solid dose manufacturing training differ from a general GMP and validation course?

This course works at machine level: granulator endpoints, press settings, coating parameters and defect correction. General GMP and validation courses cover facilities, cleanrooms, equipment qualification and quality systems, and laboratory courses cover release test methods; both appear here only where they touch the production line.

Why do tablets cap or laminate during oral solid dose manufacturing?

Capping and lamination usually come from air trapped in the die, excess fines, over-dried granules or high compression force and turret speed. Adding precompression, slowing the turret, correcting granule moisture and checking punch wear are the usual first corrections.

What do participants take back from the oral solid dose manufacturing course?

Participants take back a Tablet Line Troubleshooting and In-Process Control Plan for a case product, with a sampling and action limit table, defect fault trees and an OEE loss ranking ready to adapt to their own granulation, compression and coating lines.