IDEAL CURES

Coating Troubleshooting Guide

INSTACOAT

Three Critical C's of Coating:

For effective troubleshooting of coating issues, delve into the Three C's. Identifying the precise root cause enables the production team or formulator to devise optimal solutions swiftly.

Core Tablet:

Physical attributes surface hardness and friability important considering stressful conditions of the coating process.

Coating Process:

Well optimised coating process parameters and ideal spray gun and equipment setup.

Coating Formulation:

Select an optimized formulation that aligns with core formulation requirements.

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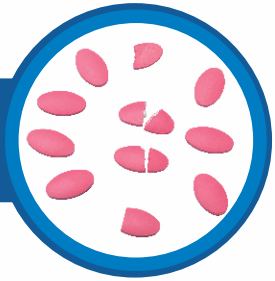
INSTACOAT®
FILM COATING SYSTEMS

Tablet Breakage



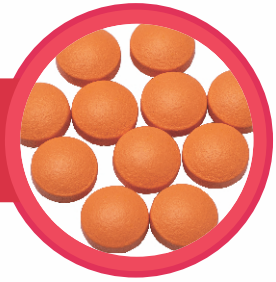
Causes

- Poor core characteristics i.e. poor shape, too soft, brittle in nature
- Pan speed too high
- Inappropriate baffle design
- Pan load too low

Remedies

- Improve core formulation
- Reduce pan speed
- Pan load too low
- Improve baffle design
- Optimize pan load

Orange Peel



Causes

- Coating suspension viscosity too high
- Atomizing air pressure too low
- Spray rate too high

Remedies

- Optimize coating formula use an INSTACOAT high solids low viscosity system
- Increase atomizing air pressure
- Reduce the coating suspension solids level
- Decrease spray rate

Logo Infilling

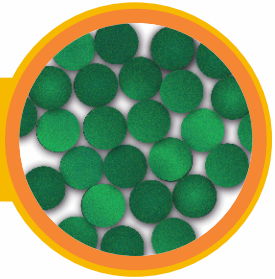
Causes

- High gun to bed distance
- High atomizing air pressure
- Gun-to-bed distance too high
- Drying air temperature too high
- High solids content in the coating suspension

Remedies

- Decrease gun to bed distance
- Decrease atomizing air pressure
- Optimize spray gun set up
- Reduce drying air temperature
- Reduce coating suspension solids level

Tablet Discoloration



Causes

- Migration/ interaction of core/ coating ingredients often facilitated by residual solvent, use of liquid plasticizer, moisture uptake on storage.
- Fading due to poor pigment stability.
- Core defects not masked by coating.

Remedies

- Identify/ replace core ingredients
- Reduce over wetting by optimizing spray rate, drying air temperature & flow rate, pan speed, gun set-up, coating suspension solid level
- Identify/ replace coating ingredients
- Select an INSTACOAT moisture protective coating system
- Select stable pigments
- Select a higher opacity coating system

Tablet Edge Erosion

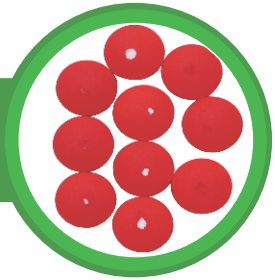
Causes

- Poor core tablet design i.e. sharp edges
- Worn or damaged tablet tooling
- Low film strength
- Low solids coating suspension
- High pan speed
- Low coating spray rate
- Low pan load

Remedies

- Improve core tablet design
- Replace or repair tooling
- Use a high film strength INSTACOAT system
- Use a high solids INSTACOAT system
- Reduce pan speed
- Optimize spray rate
- Optimize pan laod

Picking & Sticking



Causes

- Coating solution spray rate too high
- Tablets bed temperature too low
- Inlet air volume too low
- Gun to bed distance too short
- Pan speed too low
- Coating suspension solids too low

Remedies

- Optimise the spray rate
- Increase coating bed temperature
- Increase inlet air volume
- Optimise gun to bed distance
- Increase pan speed
- Use a high solids INSTACOAT system

Logo Bridging

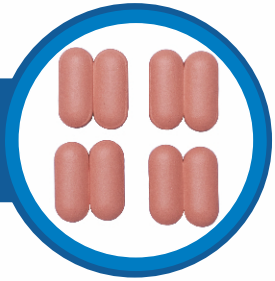
Causes

- Poor logo or break-line design
  (too narrow, too deep, square edges)
- Excipients with poor adhesion
- Overwet process conditions:
  - High suspension flow rate
  - Low gun- to-bed distance
  - Low pan Load
- Low adhesion coating formulation
- Change in solvents system from organic to aqueous

Remedies

- Improve logo design. Consult tablet tool supplier
- Choose high adhesion materials e.g. MCC, lactose
- Increase drying air temperature & flow rate
- Optimize gun position
- Increase tablet pan load
- Use INSTACOAT high adhesion coating system

Tablet Twinning



Causes

- Tablet shape i.e. flat shape, caplets
- Spray rate too high
- Gun to bed distance too close
- Low atomizing air pressure i.e. too big droplet size
- Coating process too wet

Remedies

- Change shape/ modify design of the core tablets i.e. avoid any perfectly flat areas
- Reduce spray rate
- Increase the gun to bed distance
- Increase the atomizing air pressure
- Increase the product bed/ exhaust temperature and / or drying air volume

Surface Erosion

Causes

- Poor tablet surface hardness i.e. friable core
- Tablets are too hygroscopic
- Logo design and placement
- Low film strength
- Low solids coating suspension
- Spray rate too low/ too high
- Pan speed too high

Remedies

- Modify core formulation
- Avoid or minimize super disintegrates in the core
- Modify logo design or placement
- Use INSTACOAT high strength film coating
- Optimize spray rate
- Decrease pan speed

Scuffing

Causes

- Tablet shape
- High tablet bed temperature
- Poor quality of stainless steel
- Improper cleaning of the coating pan
- High TiO_2 concentration in the flim

Remedies

- Avoid deep convex shapes
- Reduce drying air temperature
- Increase spray rate
- Polishing, passivating of stainless steel may help
- Pre-coat the pan with spray suspension
- Ensure proper cleaning of the coating pan
- Optimize TiO_2 concentration

Film Cracking/ Core Expansion

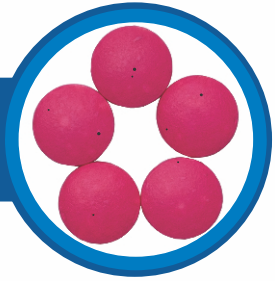
Causes

- Core has high rate of thermal expansion
- Post-compression core relaxation
- Higher coating bed temperature i.e. core expansion

Remedies

- Use organic fillers e.g. MCC, lactose, starch; avoid inorganics e.g. carbonates, phosphates
- Extend interval between tableting and coating process
- Decrease coating bed temperature

Dark Spots In Coating



Causes

- Poor pigment dispersion

Remedies

- Improve coating suspension preparation method (faster stirring, longer time)
- Use an Instacoat coating system

Film Spliting / Peeling

Causes

- Coating performed at high tablet bed temperature
- Poorly plasticized coating formulation
- Poor film strength coating formulation

Remedies

- Reduce bed temperature
- Use an INSTACOAT fully optimised coating formulation

IDEAL CURES PRODUCT RANGE

IMMEDIATE RELEASE & MOISTURE BARRIER COATING

- INSTACOAT 4G
- INSTACOAT EHP 250
- INSTACOAT AQUA II
- INSTACOAT AQUA III
- INSTACOAT UNIVERSAL
- INSTACOAT AQUA LUSTER
- INSTACOAT QD
- INSTACOAT T2F
- INSTACOAT SMART
- INSTACOAT SOL
- INSTACOAT ALTIMATE
- INSTACOAT P4
- INSTACOAT EMB
- INSTAMOISTSHIELD AQUA II
- INSTAMOISTSHIELD
- INSTANUTE MB II

Delayed Release Coating

- INSTACOAT EN SUPER IV
- INSTACOAT EN SUPER II
- INSTACOAT HPMC- P
- INSTACOAT EEN
- INSTACOAT EEN SF

Pharma Acrylic Polymers

- ECOPOL L30 D 55 (Liquid)
- ECOPOL L100 55 (Dry Powder)
- ECOPOL L100 (Dry Powder)
- ECOPOL S100 (Dry Powder)

Extended Cooling Boosters

- ECOCOOL Pellets / Granules
- ECOCOOL MP
- ECOCOOL HD
- ECOCOOL TI
- ECOCOOL DT
- ECOCOOL DP

Espheres InstaSpheres

- ESPHERES EM
- ESPHERES SiO_2
- ESPHERES TA
- MANNITOL PELLETS
- INSTASPHERES EM
- INSTASPHERES SiO_2
- INSTASPHERES TA

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