



Legend

LIQUIDA | SOLIDA | PACKAGING
Above processes are depicting an exemplary sequence of single steps which might differ for other use cases.

Critical Quality Attributes (CQA) which can be addressed using visiotec solutions.

VISIOTEC SYSTEM

- ¹ VisioNIR LS
- ² VisioAMV
- ³ VisioCount
- ⁴ VisioScan/VisioScan Post-seal
- ⁵ VisioNIR AS

Solutions pharma – processes and critical-quality attributes, v2.1 / Information as per 04/2018

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Process	Inspection task	visiotec System	Examples/Potential applications
Mixing	API distribution	VisioNIR LS	Measurement in mixing vessel
Filling	Fill mass	VisioAMV	Directly in filler or in (closed) vial
	Concentration	VisioNIR LS	Insulin suspension concentration measurement
Closed container	Fill mass	VisioAMV	Inspection of fill mass (liquid in vial, already stoppered and crimp cap applied)
	Fingerprint ID	VisioNIR LS	Unlabeled bulk inspection prior to vial labeling to rule-out mix-up situations
	Moisture & cake defects (lyophilization)	VisioNIR LS	Inspection of vials for residual moisture level, meltbacks and optical cake defects (broken, shrunken, etc.)



Process	Inspection task	visiotec System	Examples/Potential applications
Granulation	Content uniformity Moisture content	VisioNIR LS	Measurement directly in vessel of granulator
Drying	Moisture content Drying level		Measurement directly in dryer
Blending	ID of ingredients Blend uniformity API content Segregation		Measurement directly in blender
Compacting	Content uniformity API distribution Hardness		NIR probe directly installed in tablet press measuring each tablet at the exit of press
Coating	Coating integrity		Coating is checked for proper application and can be checked for thickness
Filling	Fill mass (capsules)	VisioAMV	Measurement of powder or pellet weight during dosing process in capsule filler
	Metal contamination	VisioCount	Measurement of powder or pellet stream for metallic contaminants



Process	Inspection task	visiotec System	Examples/Potential applications
Forming (and lid material)	Material integrity	VisioScan Vision Technology*	Pinhole inspection of forming and lidding material Unformed web: inspection for foreign matter in forming material
Feeding/Dosing	Product mass measurement	VisioAMV	Measurement of product mass during product feeding (e.g. fill level of capsule containing powder or pellets)
Product inspection	Product shape and looks & product ID	VisioNIR AS	Visual inspection for cosmetic defects and inspection of the chemical composition
	Product mass	VisioAMV	Measurement of the product mass present in a blister cavity
Sealing/Post-sealing	Package integrity	VisioScan Post-seal	Pinhole inspection of lidding material side of the sealed blister web (in case of thermoformed blister cavities)
Cartoning	Package completeness	VisioCount	Determine the number of blister cards stacked into a closed carton
Re-inspection/Recovery	Product shape and looks Package completeness Package integrity Product ID	Vision technology* VisioCount VisioScan Post-seal VisioNIR AS	Visual inspection of products for cosmetic defects Determine the number of blister cards stacked into a closed carton Pinhole inspection of lidding material side of the finished blister card Inspection of the chemical composition of products



*currently not yet available