

Table 1:

Equipment Use	Preferred Routine Release Method	Swab Locations for Validation	Visual Inspection Locations During Validation
- Reactors - Vessels used to perform chemical reactions - Crystallizers	Rinsate	- Dome - Wall - Bottom Valve	- Dome and Nozzles - Baffles - Agitator (Shaft, Sweeps, & Seal) - Interior of Bottom Valve - Spray Devices - Inner edge of manway - Wall
Charge Chutes	Swab or Rinsate depending on System design, CIP system design (if applicable) and cleaning method design	Valves (if applicable)	- Valves (if applicable and accessible) - Side walls
- Make-up tank - Vessels used to dissolve reactants for charging to another vessel.	Rinsate	- Dome - Wall - Bottom Valve	- Dome and Nozzles - Baffles - Agitator (Shaft, Sweeps, & Seal) - Interior of Bottom Valve - Spray Devices - Wall
- Granulators - Dryers - Filter-Dryers	Rinsate	- Dome - Bottom Plate - Discharge Door & Chute - Agitator Sweep (drop bottom only) - Filter Media - Area Under the Filter Media	- Dome and Nozzles - Agitator (Shaft, Sweeps, & Seal) - Area Under Filter Media - Area under filter media hold-down bars and screws. - Filter Media - Discharge Door & Chute - Spray Devices - Inner edge of manway
- Distillate Receivers - Mother Liquor Receivers - Decant Receivers (If product contact due to salvage operation only)	Rinsate	- Dome - Wall - Bottom Valve	- Dome and Nozzles - Interior of Bottom Valve - Wall
Process Piping	Rinsate	- Dead Legs - Transfer Manifolds - Nitrogen feed lines attached to bottom of reactor slurry lines.	- Dead Legs - Transfer Manifolds - Sanitary Piping - Nitrogen feed lines attached to bottom of reactor slurry and transfer lines.

Table 1 Cont.:

Equipment Use	Preferred Routine Release Method	Swab Locations for Validation	Visual Inspection Locations During Validation
Vacuum pumps used for distillations	None	None	None – not reasonably accessible
- Vacuum pumps used for drying operations - Compovac/Apovac (return loop to dryer)	Rinsate	None	Recommend installing sight glasses at Inlet and outlet piping of Vacuum. 1. Vac Inlet & Outlet Piping
Condenser & Vapor Column	Rinsate	None	1. Tube sheet* 2. Vapor Column 3. Spray Devices* *These locations should only be inspected if a qualified boroscope camera is available.
- Head tanks - Vessels used to store pure raw materials/reactants	Rinsate	1. Dome 2. Wall 3. Bottom Valve If required by Table 1	1. Dome and Nozzles 2. Wall 3. Interior of Bottom Valve If required by Table 1
Centrifuges	Swab or rinse, depending on Centrifuge type	1. Dome 2. Sidewall 3. Bowl 4. Discharge Chute	1. Dome and Nozzles 2. Bowl 3. Discharge Chute 4. Wall 5. Agitator (if applicable) 6. Spray Devices
Tray Dryers	See Note 1 below	1. Walls 2. Door 3. Racks 4. Interior of Trays	1. Walls & Door 2. Racks 3. Trays
- Tumble Dryers - Totes & Bins - Hoppers	Rinse (Swab if rinse not possible)	1. Charging Valve or Portal 2. Discharge Valve or portal	1. All interior Surfaces 2. All interior Surfaces 3. Charging Valve or Portal 4. Discharge Valve or portal
Mills	See Note 1 below	1. Feed Auger or Hopper 2. Mill Blades or hammers 3. Blade Axel 4. Screen (if practical) 5. Discharge Chute	1. Complete Disassembly Of All Product Contact Parts – Inspect All Surfaces, including: A.) Feed Auger or Hopper B.) Mill Blades or hammers C.) Blade Axel D.) Screen (if practical) E.) Discharge Chute

Notes:

1. If the visual quantity is known then visual inspection is the preferred method for routine release. If the visual quantity can not be determined then Swab is the preferred method, however, in those rare instances that the equipment can hold a known rinse volume, rinsate testing is acceptable.