STANDARD OPERATING PROCEDURE

Production Equipment Cleaning SOP

Document no.	SOP-MFG-011
Revision	1.0
Owner	Quality Manager
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Review cycle	Every 12 months

1. Purpose

To remove product residue and contamination from production equipment before the next run or changeover, protecting product quality and preventing cross-contamination between products.

2. Scope

Applies to scheduled and changeover-driven cleaning and sanitation of production equipment. General workstation tidiness under the 5S program is covered by a separate SOP.

Definitions

CIP	Clean-in-place. A cleaning method where cleaning solution circulates through the equipment without full disassembly.
COP	Clean-out-of-place. A cleaning method where parts are removed from the equipment and cleaned separately, such as in a wash sink or tank.
Dwell time	The amount of time a cleaning or sanitizing chemical must remain in contact with a surface to be effective.
Pre-operational inspection	A visual and, where applicable, swab-tested inspection performed after cleaning and before restart to confirm the equipment is clean.

3. Responsibilities

Cleaning Technician	Performs disassembly, cleaning, sanitizing and reassembly per the cleaning procedure for the equipment.
Maintenance Technician	Supports lockout/tagout and reassembly of components requiring tools or mechanical adjustment.
Quality Inspector	Performs the pre-operational inspection and approves the equipment for restart.
Production Supervisor	Schedules the cleaning window and confirms the equipment is released back to production.

RACI matrix

Activity	Cleaning Technician	Maintenance Technician	Quality Inspector	Production Supervisor
Lock out equipment before cleaning	R	R/A	-	I
Disassemble, clean and sanitize	R/A	C	I	-

Activity	Cleaning Technician	Maintenance Technician	Quality Inspector	Production Supervisor
Perform pre-operational inspection	I	-	R/A	I
Approve restart and release to production	I	I	A	R

R = Responsible, A = Accountable, C = Consulted, I = Informed

4. Materials and PPE

Materials, tools and systems

- Cleaning procedure specific to the equipment and product changeover type
- Approved cleaning and sanitizing chemicals with concentration guidance
- Lockout/tagout devices
- Cleaning tools (brushes, scrapers, hoses) dedicated to food or product contact surfaces where required
- Swab test kit or ATP test device where used
- Cleaning verification log or CIP/COP checklist

Personal protective equipment

- Chemical-resistant gloves
- Safety glasses or face shield
- Waterproof apron or coveralls
- Non-slip boots

5. Procedure

Step	Task	Owner	Done
5.1	**Review the cleaning schedule and method** Technician checks the cleaning schedule to confirm which method applies, such as a dry clean between similar products or a full wet clean for an allergen or major changeover.	Cleaning Technician	☐
5.2	**Lock out the equipment** Maintenance technician applies lockout/tagout to the equipment's energy sources per the site's lockout tagout procedure before any guard is removed. **Warning:** Do not remove guards or access covered areas of the equipment before lockout/tagout is fully applied and verified.	Maintenance Technician	☐
5.3	**Disassemble removable parts** Cleaning technician removes guards, covers and other removable parts specified in the cleaning procedure for cleaning out of place.	Cleaning Technician	☐
5.4	**Remove gross debris before washdown** Technician removes bulk product residue, packaging debris and loose material by hand or with a scraper before applying water or chemical.	Cleaning Technician	☐
5.5	**Apply cleaning chemical at the specified concentration** Technician mixes and applies the approved cleaning chemical at the concentration and dwell time specified in the cleaning procedure. **Warning:** Never mix cleaning chemicals that are not approved to be combined, and always use the concentration specified in the procedure.	Cleaning Technician	☐

Step	Task	Owner	Done
5.6	**Scrub or run the CIP cycle** Technician scrubs surfaces by hand per the defined cleaning method, or runs the CIP cycle for equipment cleaned in place, following the specified time and temperature.	Cleaning Technician	☐
5.7	**Rinse and inspect for residue** Technician rinses all cleaned surfaces thoroughly and inspects visually for remaining product residue or cleaning chemical film.	Cleaning Technician	☐
5.8	**Sanitize contact surfaces** Technician applies the approved sanitizer to product contact surfaces at the specified concentration and dwell time where the procedure requires sanitation.	Cleaning Technician	☐
5.9	**Allow equipment to dry** Technician allows the equipment to air dry or dries it per the procedure before reassembly, avoiding recontamination from a dirty cloth or airline.	Cleaning Technician	☐
5.10	**Reassemble guards and components** Maintenance technician reassembles guards and components removed during disassembly, confirming each is secured correctly.	Maintenance Technician	☐
5.11	**Perform the pre-operational inspection** Quality inspector performs a visual inspection and, where required, a swab test of product contact surfaces before approving the equipment for restart. **Checkpoint:** Pre-operational inspection passes visual and, where required, swab test criteria before the equipment restarts.	Quality Inspector	☐
5.12	**Complete and sign the cleaning log** Cleaning technician and quality inspector complete and sign the cleaning verification log, recording chemicals used, times and inspection results.	Cleaning Technician	☐
5.13	**Restore lockout and return to production** Maintenance technician removes lockout/tagout in the correct sequence, and the production supervisor confirms the equipment is released back to production.	Maintenance Technician	☐

6. Quality checks

- Pre-operational inspection is completed and passed before every restart after cleaning.
- Cleaning chemical concentration and dwell time match the written procedure, not an estimate.
- Cleaning verification logs are signed by both the cleaning technician and quality inspector.
- Swab or ATP test results, where used, meet the defined pass criteria before release.

7. Records

- Cleaning verification log or CIP/COP checklist
- Pre-operational inspection results
- Swab or ATP test results
- Lockout/tagout verification record

8. KPIs

- Pre-operational inspection pass rate on first check
- Cleaning cycle time against target
- Cross-contamination or allergen-related quality events

- Percentage of cleaning logs completed and signed same day

9. Common mistakes

- Restarting equipment before the pre-operational inspection is completed.
- Guessing at chemical concentration instead of measuring it per the procedure.
- Skipping lockout/tagout because the cleaning task seems low-risk.
- Not drying equipment fully before reassembly, allowing recontamination.
- Reusing cleaning tools across different products without following the dedicated tool procedure.

10. Revision history

Revision	Date	Description	Reviewed by
1.0	September 15, 2026	Initial release	Ilia Pirozhenko

Approval

Prepared by	Approved by	Date

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