	PSG Department	SOP Standard Operating Procedure

UVA & MULTILANE START-UP & SHUT-DOWN

SOP #:	Issuance Date:	As at Last Signature	
UCL/IBDPSG/CD/Q/06.0	Revision Date:	Maximum 2 years from effective date	
	Effective Date:	20 Days from the Issuance Day	Page 1 of 13

PURPOSE

- To define a standard procedure for shutting down the machine and starting up after days off and holidays.

SCOPE

- This SOP is to be adhered to whenever it is required to shut-down for more than 24 hours. For periods less than 24 hours, machine should be left on and all "if down do" activities executed. The Line/Department Manager's verbal alignment must be sought for any deviation from the above.

RESPONSIBILITY

- **Shift/Line Operator:** Responsible for carrying out the steps outlined in this procedure except power panel start-up and shut down.
- **Shift E&I:** Responsible for starting up and shutting down all power panels.
- **Team Leader:** Responsible for overall supervision of the procedure of the Startup and shutdown checklist (an addendum of the SOP) and filling of the checklist.

POTENTIAL RISKS

- Eye contact with powder
- Inhalation of powder dust
- Hand injury (cuts/burns)

PPE REQUIRED

- 3M Nose Mask.
- Polyester hand glove / Cotton gloves
- Safety Glasses
- Safety Shoes
- Voltage rated glove
- Untreated cotton shirt

PROCEDURE

POWER PANEL START-UP

1. Switch on the fused isolators of packing panels 1, 2 and 3 on the PC panel in the MSG control room and packing panel 4 on the PC panel in the new control room.

SOP OWNER	QA APPROVAL	HS&E APPROVAL	AUTHORISATION
Awodoye Omobolarin	Alawode Olujide	Adebiyi Adedoyin	Ogunrinde Adebayo
Date: 11/02/2022	Date: 11-02-2022	Date: 11th Feb, 2022	Date: 15th Feb, 2022

2. Switch on the main breakers of packing panels 1, 2, 3 & 4 on the packing floor.
3. Confirm that the voltage indicator (R, S, and T) lamps on packing panels 1, 2, 3 and 4 are on.
4. Confirm that the power-meter on packing panel 3 & 4 display voltage or current readings for example, 230volts (±5%) for each phase.
5. Only qualified personnel should perform steps 1 – 4 above. The shift electrician must wear untreated cotton shirt and 1000 voltage rated gloves for these steps

UVA START-UP

1. Power on the UVA machine from the main packing electrical panel. Power on the UPS for each line. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment.
2. Confirm that CVC is powered up and working
3. Switch on the electrical, heat-seal and pneumatic disconnects.
4. Load and Web the film on the machine.
5. Inspect the main hopper, auger screw and funnel, Clean if powder build up is observed using PVC, IVAC or CVC, Nose mask, cotton gloves and cotton towel. Switch off and lock out electrical disconnect when carrying out the inspection. Use a multi-lock if more than 1 person would be working on the equipment at a time. All individuals must apply his personal lock. Press F1 on the machine HMI to be sure it's fully de-energized. Wear 3M Nose mask, cotton gloves and safety glasses. Clean the forming set and pulling belts using the forming set brush and a cotton rag respectively. Wear the 3M Nose mask, safety glasses and cotton gloves
6. Clean the knife, cross-seal and long-seal jaws using a wire brush. Wear polyester hand glove. Clean up powder spillages using PVC or CVC. Wear the 3M Nose mask, polyester gloves and safety glasses.
7. Up-date/ check the code on the MARKEM S18i printer. Wear cotton gloves.
8. Use the process audit sheet and the Julian date sheet to verify that all process settings and production codes are correct and that start-up procedures are executed.
9. Remove all locks and test machines then start production. Utter a warning "hand-off" shout before starting the machine.
10. Confirm all auto detection system is working. Perform 2D no read and 2D no match test following 2D camera SOP.
11. Confirm End of line contractors are available and ready to pack before producing.

UVA SHUT-DOWN

1. Close the buggy on the buggy dump station and cover the dump spots.
2. Continue production until powder runs out from buggy hoppers and the machine hopper.
3. Segregate all product produce during runout (when tapping the hopper) and perform 100% sorting before packing into polywooven.
4. Stop production by pressing the "F1" button on the HMI.
5. Suckout powder from the buggy hoppers and machine hoppers for process failure and breakdown on machines that have not been resolved after 24hrs and during shutdown.
6. Switch off the electrical, heat-seal and pneumatic disconnects. Lock and tag out machine. Use a multi-lock if more than 1 person would be working on the machine at a time. Each person must apply his safety locks. Press F1 on the machine HMI to be sure it's fully de-energized.
7. Close the sifter slide-gate.

8. Clean the sifter unit with PVC, IVAC or CVC. Switch off and lock out the electrical. Use a multi-lock if more than 1 person would be working on the machine at a time. Each person must apply his safety locks.
9. Clean the main hopper, auger screw and funnel using PVC, IVAC or CVC and cotton towel. The operator must wear the 3M nose mask, safety glasses and cotton gloves.
10. Clean the forming set and pulling belts using the forming set brush and a cotton rag respectively. Wear the 3M600 nose mask safety glasses and cotton gloves.
11. Clean the long-seal jaw, cross-seal jaws and knife using a wire brush. Wear polyester hand gloves
12. Clean the out-feed conveyor/slide gate of any powder using a cotton towel. Wear polyester hand gloves
13. Clean up powder spillages using the PVC or CVC. Wear the 3M6000 nose mask safety glasses and cotton gloves.
14. Power off the UVA from the main panel if shut down would exceed 24 hours. Also, power off the UPS for each line. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment.
15. Remove your safety lock.
16. Perform Long shut down on Image/Domino (secondary coding machine) when shutting down for more than 24 hours and close the gutter.

MULTILANE START-UP

1. Switch on the main electrical Packing Panels 3 & 4. Power on the UPS for each line. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment.
2. Switch on the breakers to the conveyors, sifters, DCS, multilane electrical panels, extraction belts, scissors lift, scales, Imajes and stretch wrappers. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment.
3. Switch on disconnects to the sifters, conveyors, extraction belts, scissors lift, scales, Imajes, stretch wrappers and DCS. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment.
4. Power on the multi-lane electrical panel main breaker. Power on the UPS for each panel, only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment
5. Switch on the main circuit breakers to each of the lane of the machine. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment.
6. Stop the machine by pressing the stop button, Lock out the machine. Make sure you use multi-lock if more than one person will work on the machine. Restart the machine to ensure it is fully de-energized.
7. Inspect main buggy hoppers, auger screws, sifters, triverters , extraction belts and clean if powder or build up is observed using PVC or CVC and cotton rag. Wear cotton gloves, safety glasses and 3M6000 nose mask.
8. Clean the forming sets and pulling belts using wet cotton rag.
9. Clean the vertical (long-seal) jaws, Horizontal (cross-seal) jaws and knives with wire brush. Wear polyester hand gloves
10. Remove lock out.
11. Switch on the electrical, heat-seal and pneumatic disconnects. Use dry hands when handling electrical equipment.
12. Load the new film and prepare the lanes for operation. Use film trolley to raise film to position. Film IPMS no. must be checked before loading the film (following SOP No. PSG 1014.2) if 2D camera is non-functional and deviation obtained from Quality Leader.

13. Close all doors and check that all emergency stop buttons are de-activated.
14. Enable systems on each lane of the machine by pressing the enable button that appears on the HMI.
15. Power on the Markem S18i printers for each lane and allow them to calibrate. Up-date/ check the code on the MARKEM S18i printer.
16. Activate the low-level sensors on the hoppers of each lane on the HMI.
17. Upload the process parameters that match the SKU to be run.
18. Confirm auto all detection system is working. Perform 2D no read and 2D no match test following 2D camera SOP.
19. Inspect scissors lift using the Scissors lift inspection checklist and confirm if SAFE or UNSAFE to use.
20. Test lanes to ensure bags meet all quality attributes and start production.
21. Start all conveyors by pressing the start buttons on the electrical packing panel 3. Select 'Auto mode' on Packing panel 4 HMI to synchronize all equipments on line 4. Warn the operator to keep safe distance.

MULTILANE SHUT-DOWN

1. Close the buggy on the buggy dump station and close the dump spots.
2. Run out powder from extraction belt, sifter, triverter and dosing hopper.
3. Manually de-activate the low-level sensors on the hoppers of each lane of the machine on the HMI.
4. Run out powder from the machine hoppers and from the surge bin on extraction belts for line 3 & 4 on production mode.
5. Segregate all product produce during runout (when tapping the hopper) and perform 100% sorting before packing into polywoven
6. Suckout powder from the buggy hoppers and machine hoppers for process failure and breakdown on machines that have not been resolved after 24hrs / during shutdown.
7. Stop the machine by pressing the stop button on each lane of the machine.
8. Switch off the electrical, heat-seal and pneumatic disconnects for all lanes of the machine. Lock out the machine. Make sure you use multi-lock if more than one person will work on the machine. Restart the machine to ensure it is fully de-energized.
9. Stop the main, inclined, S and packing conveyors by pressing the stop button on the HMI of the packing panels.
10. Stop all scrapping operation at the reject cabinet.
11. Clean the main hoppers, auger screws, sifters and extraction belts using the PVC or CVC and cotton cloth. Wear Enzyme gloves, safety glasses and 3M6000 nose mask.
12. Remove all packing material on the machine, stretch wrap and move them out of the line to the new staging area using packing material trolley and store with the right material tag. Cutoff pre-coded part rolls of films from the real. Move packing trolley by pushing with one person each at both ends of the trolley.
13. Clean the forming sets, and pulling belts using wet cotton rag. Wear cotton gloves, and safety glasses.
14. Clean the long-seal jaws, cross-seal jaws and knives with wire brush. Wear cotton gloves.
15. Clean the out-feed conveyors of powder using PVC or CVC. Wear cotton gloves, safety glasses and 3M6000 nose mask.
16. Switch off main electrical circuit breakers to each lane of the machine. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment.

17. Power off the multi-lane electrical panel main breaker. Power off the UPS for each panel. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment.
18. Switch on the DCS, rotary airlock and pulse unit. Ensure the system runs for at least 15mins after the last scrapping the last bag at the reject cabinet. Warn the operators to keep off the moving part.
19. Switch off disconnects to the sifters, conveyors, extraction belts, scissors lift and DCS. Lock out the machine. Make sure you use multi-lock if more than one person will work on the machine.
20. Switch off the breakers to the conveyors, sifters, DCS, extraction belts, scissors lift, scales, Imajes and stretch wrappers. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment.
21. Switch off the Packing Panel 3 & 4 breakers. Lock out the machine. Make sure you use multi-lock if more than one person will work on the machine. Power off the UPS for each packing line. Only qualified personnel should operate the electrical panel. Use dry hands when handling electrical equipment
22. Remove safety lock.
23. Perform Long shut down on Image/Domino when shutting down for more than 24 hours and close the gutter.

POWER PANEL SHUT-DOWN

1. Switch off the main breaker of packing panels 1, 2, 3 & 4 on the packing floor.
2. Confirm that the voltage indicators on the packing panels 1 and 2 are off.
3. Confirm that the packing panels 3 & 4 power-meters are off.
4. Switch off the fused isolator of packing panels 1, 2 & 3 on the PC panel in the MSG control room and the main breaker of the packing panel 4 on the PC panel in the new HHC Control room.
5. Only qualified personnel should perform steps 1 – 4 above. The shift electrician must wear untreated cotton shirt and 1000 voltage rated gloves for these steps

POWER CHANGE-OVER FROM GENERATOR TO PHCN OR VICE VERSA.

1. Stop production by pressing 'F1' on UVA HMI and 'stop button' on ML HMIs.
2. Switch off the Main disconnect and heat-seal disconnects.
3. Switch off the F10 breakers in the UVA electrical panels and main breakers in the ML electrical panels.
4. Stop conveyors by pressing the stop buttons and switch off all disconnect to each conveyor on both UVA and Multilane lines.
5. Switch off disconnects to all extraction belt on Multilane line.
6. Stop the DCS for each line by pressing the stop button from the packing panels.
7. Switch the main breaker of packing panels 1, 2, 3 & 4 on the packing floor.
8. Confirm the UPS is on and working.
9. Switch off the UPS for each line (when switching to Generator)
10. Change power source from generator to PHCN or vice versa.
11. Start up the line following the start-up procedure for each line.
12. Only qualified personnel should perform steps 2 – 6 above. The shift electrician must wear untreated cotton shirt and 1000 voltage rated gloves for these steps

GENERATOR SHUT-DOWN

1. Shut down the generator at MCC room by cool down stop
2. After the generator have shut down on cool down stop (180secs)
3. Move down to generator area to switch off the battery key on Gen 6 and Gen 12

4. Remove one of the battery cables that connect to generator on the gen 12 (Yellow Gen.)

REASON FOR UPDATE: New SOP

END OF PROCEDURE

SOP RELATED ATTACHMENTS

ATTACHMENT 1 -	SOP Qualification
ATTACHMENT 2-	Model Answers
ATTACHMENT 3 -	Startup checklist and Shutdown Checklist
ATTACHMENT 4-	2D Camera Functionality Sheet

ATTACHMENT 1

UGEE CHEMICALS

UVA & MULTILANE START-UP & SHUT-DOWN
Training & Qualification Sheet

Trainee Name:		Trainer Name:	
Training Date:		Qualifier Name:	

Question # 1: During Power Change over, it is required to switch off both main & heating disconnects for each machine?

Answer # 1: **[True] or [False]**

Question # 2: Why is it necessary to use the startup & shutdown checklist?

Answer # 2:

Question # 3: Why is it required to close the slide gate before removing the hopper funnel & screw for cleaning?

Answer # 3:

Question # 4: Why is it required to attempt to restart equipment after lock out?

Answer # 4:

Question # 5: What system is used to track all failures during operation?

Answer # 5:

Question # 6: Who is responsible for powering up the Power panels?

Answer # 6:

Question # 7: When should scissors lift inspection be done, during start-up or shut down?

Answer # 7:

Question # 8: What PPE's is required when powering up Power panels?

Answer # 8:

SOP OWNER	QA APPROVAL	HS&E APPROVAL	AUTHORISATION
Awodoye Omobolarin	Alawode Olujide	Adebiyi Adedoyin	Ogunrinde Adebayo
Date: 11/02/2022	Date: 11-02-2022	Date: 11th FEB, 2022	Date: 15th Feb, 2022

Question # 9: Is it required to double check Markem S18 code before starting up the equipment?

Answer # 9: **[Yes] or [No]**

Question # 10: Perform long shutdown on imaje/domino coding for shutdown greater than 24hrs ?

Answer # 10: **[Yes] or [No]**

Answer # 10:

The person is considered passed if he scores 100 % in the above test.

Training Results: _____ (tick as appropriate) Succeeded: ☐

Qualifier 's Sign/Date: _____

Fill if re-qualification is needed:

Date of re-qualification : _____

SOP OWNER	QA APPROVAL	HS&E APPROVAL	AUTHORISATION
Awodoye Omobolarin	Alawode Olujide	Adebiyi Adedoyin	Ogunrinde Adebayo
Date: 14/02/2022	Date: 11-02-2022	Date: 11th Feb, 2022	Date: 15th Feb, 2022

ATTACHMENT 2

UGEE CHEMICALS

UVA & MULTILANE START-UP & SHUT-DOWN MODEL ANSWERS

Trainee Name:		Trainer Name:	
Training Date:		Qualifier Name:	

Question # 1: During Power Change over, it is required to switch off both main & heating disconnects for each machine?

Answer # 1: **[True]**

Question # 2: Why is it necessary to use the startup & shutdown checklist?

Answer # 2: **To make certain that all critical processes have been put in place as captured in the check list**

Question # 3: Why is it required to close the slide gate before removing the hopper funnel & screw for cleaning?

Answer # 3: **To prevent accidental powder spillage**

Question # 4: Why is it required to attempt to restart equipment after lock out?

Answer # 4: **To ensure that the equipment is completely de-energized/ isolated**

Question # 5: What system is used to track all failures during operation?

Answer # 5: **Proficy**

Question # 6: Who is responsible for powering up the Power panels?

Answer # 6: **Shift E & I**

Question # 7: When should scissors lift inspection be done, during start-up or shut down?

Answer # 7: **During Start-up**

Question # 8: What PPE's is required when powering up Power panels?

Answer # 8: **Untreated cotton shirt & Voltage rated gloves**

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Awodoye Omobolarin	Alawode Olujide	Adebiyi Adedoyin	Ogunrinde Adebayo
Date: 11/02/2022	Date: 11-02-2022	Date: 11th Feb, 2022	Date: 15th Feb, 2022

Question # 9: Is it required to double check Markem S18 code before starting up the equipment?

Answer # 9: **[Yes]**

Question # 10: Perform long shutdown on imaje / Domino coding for shutdown greater than 24?

Answer # 10: **Yes**

SOP OWNER	QA APPROVAL	HS&E APPROVAL	AUTHORISATION
Awodoye Omobolarin	Alawode Olujide	Adebiyi Adedoyin	Ogunrinde Adebayo
Date: 11/02/2022	Date: 11-02-2022	Date: 11th Feb, 2022	Date: 15th feb, 2022

UGEE CHEMICALS

UVA & ML Shut-down Checklist

Date: / / Shift: ..... Name: ..... Team:

S/N	Steps	Timing	Yes	No	Responsibility	Name	Comments
	SHUT-DOWN						
1	All Buggies have been closed and moved to buggy storage with the proper label on it	10			Equipment /Line owners		
2	Clean out powder from surge bin of extraction belts on Multilane machines, The powder is emptied into the blue bag.	15			Equipment /Line owners		
3	All machine Buggy dump spots have been emptied and covered with their lids	5			Equipment /Line owners		
4	Powder to be recycled has been put into bags, labeled, sealed and moved to remelt / reblend spot	5			Team leader		
5	Housekeeping has been done according to 5S standard	10			Shift QA Leader		
6	All product produce during hopper tapping (Powder runout)had been seggregated and 100% sorted before packing into polywooven.Bagged products have either been put in polywoven or scraped as applicable	10			Equipment /Line owners		
7	All packing materials have been stretch wrapped, 4 eye-check done to aviod mix up, mis pack and returned to the end of line.	10			Shift QA Leader		
8	All powder in mateer head has been emptied/used up	10			Equipment /Line owners		
9	Reject Cabinet is clean (completely empty of dust/ accumulated powder)	5			Equipment /Line owners		
10	Sifter unit is clean (completely empty of dust/powder)	10			Equipment /Line owners		
11	Fischbein machines has been powered off	5			Shift E&I		
12	All scrap bins have been emptied	10			Equipment /Line owners		
13	All UPS & Imaje Coder has been Properly Shut-down for long time option.	10			Equipment /Line owners		
14	The funnel screw and conveyor belts have been cleaned according to the CIL standard	10			Equipment /Line owners		
15	All conveyors have been powered off from the main breaker	5			Shift E&I		
16	All machines (UVA & ML) have been powered off from the main breaker	2			Shift E&I		
17	The main control centre panel has been turned off	2			Shift E&I		
18	The washroom is clean and all air and water have been turned off	2			Team leader		
19	Proficy had been completely updated and all watch out area captured in the log Book	5			Equipment /Line owners		
20	All po has been closed on Q proficy	5			Shift QA leader		
21	All cases have been stacked, counted, written on the stacker report and moved to the FP storage area	10			Shift QA Leader		
22	Shutdown generator and transformer according to shutdown procedure	5			Shift E&I		

*The team leader delegates the responsibilities of the tasks to the individuals for easy accountability.

Shift Leader: .....

SOP OWNER	QA APPROVAL	HS&E APPROVAL	AUTHORISATION
Awodoye Omobolarin	Alawode Olujide	Adebiyi Adedoyin	Ogunrinde Adebayo
Date: 11/02/2022	Date: 11-02-2022	Date: 11th Feb, 2022	Date: 11th Feb, 2022

UGEE CHEMICALS

UVA & ML Start-up Checklist

Date: / / Shift: ..... Name: ..... Team:

S/N	Steps	Timing	Yes	No	Responsibility	Name	Comments
	START-UP						
1	Utilities are switched on (Generator, compressor, air fans, CVC)	5			Team leader		
2	DCS fan is switch on from the electrical panel	5			Line Owners		
3	All UPS & Imaje / Domino Coder has been Started-up and confirmed for no jet Error. The Imaje gutter is cleaned up and code print is tested with polywoven sample.	20			Shift E&I		
4	Clean out DCS powder from machine hoppers and the surge bin (Applicable - for shut down greater than 6 hours on ML machines)	15			Equipment /Line owners		
5	Check the triverter pneumatic disconnect for ON position.	2			ML Equipment/Line owners		
6	Removal of all Film of the previous SKU from the lane	10			Equipment /Line owners		
7	Confirm production on SAP and review of incoming packing materials according to PDR checklist	10			Shift QA Leader		
8	Packing material is loaded on the machines, tested with the right code on the pack material.	10			Equipment /Line owners		
9	Powder and buggy status is confirmed. Buggy is placed on dumping station	2			Team leader		
10	Buggy card is present on the buggy and matches the SKU to be run	2			Team leader		
11	Fischbein machines has been powered on and RLS executed to standard.	5			Shift QA Leader		
12	Removal of all finished product of the previous SKU from the lane	5			Shift QA Leader		
13	All powder and packing material bins have been emptied	5			Shift QA Leader		
14	Reject Cabinet is clean (completely empty of dust/powder)	5			Shift QA Leader		
15	Verification of code structure on the machine and imaje coder for correctness.	10			Shift QA Leader		
16	The machines have been adjusted to the centerline and correct size and speed has been selected	5			Equipment /Line owners		
17	The packing floor has been cleaned and according to 5S standard	10			Team Leader		
18	Dosing unit inspects for cake powder in the dosng hopper, on auger screw,funnel and Spinner plate	10			Equipment /Line owners		
19	Scissors lift Inspection has been done before the commencement of production	5			Team Leader		
20	Perform 2D No match functionality test following 2D camera SOP and record the outcome of test on the 2D camera functionality sheet	5			Equipment /Line owners		
21	Confirm All Auto detection system are working (2D camera, photocell sensor,powder level sensor ,manufacturer splice sensor, RFID sensor and buggy (tag reader)	10			Equipment /Line owners		
22	Line clearance and startup is completed and signed off by team	5			Equipment /Line owners		
23	Line clearance and startup is completed and signed off by team leader	5			Teamleader		

*The team leader delegates the responsibilities of the tasks to the individuals for easy accountability.

Shift Leader: .....

SOP OWNER	QA APPROVAL	HS&E APPROVAL	AUTHORISATION
Awodoye Omobolanle	Alawode Olujide	Adebiyi Adedoyin	Ogunrinde Adebayo
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UGEE CHEMICALS

2D NO READ AND MATCH FUNCTIONALITY SHEET

Name: Date: Shift: Team:

MACHINE	NO READ STATUS	NO MATCH STATUS	COMMENT

SOP OWNER	QA APPROVAL	HS&E APPROVAL	AUTHORISATION
Awodoye Omobolarin	Alawode Olujide	Adebiyi Adedoyin	Ogunriade Adebayo
Date: 11/02/2022	Date: 11-02-2022	Date: 11th FEB, 2022	Date: 15th Feb, 2022