

PROTOCOL No.:

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1.0 PROTOCOL APPROVAL:

Signing of this approval page of reports indicates agreement with the qualification approach described in this document. If modification to the qualification approach becomes necessary, an addendum shall be prepared and approved. The report cannot be used for execution unless approved by the following authorities.

This Performance Qualification report of Soft Gelatin Encapsulation Machine has been reviewed and approved by the following persons:

This Performance Qualification protocol of Soft Gelatin Encapsulation Machine has been reviewed and approved by the following signatories:

FUNCTION	NAME	DESIGNATION	DEPARTMENT	SIGNATURE	DATE
PREPARED BY			QUALITY ASSURANCE		
			QUALITY ASSURANCE		
REVIEWED			ENGINEERING		
BY			QUALITY CONTROL		
			PRODUCTION		
APPROVED			HEAD OPERATION		
BY			QUALITY ASSURANCE		

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PERFORMANCE QUALIFICATION FOR SOFT GELATIN ENCAPSULATION MACHINE

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2.0 OVERVIEW:

2.1 **OBJECTIVE:**

The objective of developing and executing this protocol is to check and document the performance of equipment in the established/predetermined operating ranges.

2.2 PURPOSE:

The purpose of this protocol is to provide the documented evidence that the functions of the equipment, which affect the product quality, integrity and safety of operating and maintenance personnel is taken into consideration.

2.3 SCOPE:

The scope of protocol shall define the test procedures, documentation and acceptance criteria to establish that the performance of Soft Gelatin Encapsulation Machine installed in soft gel area of

2.4 **RESPONSIBILITY:**

In accordance with protocol, following functions shall be responsible for the qualification of system.

Execution Team (Comprising members from Production, Quality control, Engineering and Quality Assurance) and their responsibilities are following:

- > Prepares the qualification protocol.
- Ensures that the protocol is in compliance with current policies and procedures on system Qualification.
- ➤ Distributes the finalized protocol for review and approval signatures.
- > Execution of Qualification protocol.
- Review of protocol, the completed qualification data package, and the final report.
- The analysis of sample shall be carried out by quality control department (wherever applicable).
- Engineering department shall support for execution.
- ➤ The production operator / supervisor shall carry out the cleaning and operation of machine.

Head – Quality control / Production / Engineering:



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- ➤ Review of protocol, the completed qualification data package, and the final report.
- Assist in the resolution of validation deficiencies.

Head – Operation and Quality Assurance:

➤ Review and approval of protocol, the completed qualification data package, and the final report.

2.5 EXECUTION TEAM:

The satisfactory operation of the Soft Gelatin Encapsulation Machine shall be verified by executing the performance qualification studies described in this report of the Soft Gelatin Encapsulation Machine. The successfully execution of the instructions mentioned in the report of the Soft Gelatin Encapsulation Machine documents that the Soft Gelatin Encapsulation Machine is operational and is satisfactorily working.

Execution team is responsible for the execution of performance qualification of the Soft Gelatin Encapsulation Machine.

NAME	DESIGNATION	DEPARTMENT	SIGNATURE	DATE



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3.0 GENERAL CONSIDERATION/PREREQUISITE

- 3.1 Approved Standard operating procedure of the Soft Gelatin Encapsulation Machine shall be available.
- 3.2 The installation and operational qualification of the equipment shall be successfully completed before the execution of the performance qualification.
- 3.3 All the deficiencies and discrepancies related to the equipment which affect the product quality and corrective action taken shall be recorded in the appropriate section of the protocol.
- 3.4 After completion of PQ activities, equipment shall be cleaned as per respective cleaning SOP's and released for manufacturing.

4.0 REVALIDATION CRITERIA:

The machine shall be re-qualified if

- There are any major changes, which affect the performance of the equipment.
- After major breakdown maintenance is carried out.
- As per re-validation date and schedule

5.0 PERFORMANCE QUALIFICATION PROCEDURE

5.1 EQUIPMENT DESCRIPTION:

General Description:

The Automatic Rotary Die Soft Gelatin Encapsulation Machine is designed to perform the process of Encapsulation with different fill weights in different shape and sizes of capsules.

The production capacity of the machine is 20520 to 37800 capsules per hour @ 3.0 rpm. The capsules are manufactured by passing the gelatin film of uniform thickness over two rotating die rolls of cylindrical form with cavities on periphery. A metering pump forces premeasured injection of fill material through a heated feeder segment placed between two gelatin films into matching die roll cavities. The filled capsules are formed between the two die rolls. Through pressure and heat sealing, the two halves of ribbon get effectively fused. Freshly formed soft gelatin capsules discharged from the machine and pass along a transfer conveyor into Tumbler Drier. On completion of the tumbling, the

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PERFORMANCE QUALIFICATION FOR SOFT GELATIN ENCAPSULATION MACHINE

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capsules are placed on trays which are then stacked and transferred into the capsule Drying Room for further drying.

5.2 RISK ANALYSIS

- (a) The Automatic Rotary Die Soft Gelatin Encapsulation Machine is designed to perform the process of Encapsulation with different fill weights in different shape and sizes of capsules.
- (b) In the event of power failure the system is designed to unload the pressure.
- (c) The segment lifting system is pneumatically controlled through the PLC. In the event of an emergency it is designed to automatically lift up the segment system.
- (d) Thermostats and temperature controllers are installed at each spreader box for temperature regulation and controlled by PLC.
- (e) In case of breaking of ribbon the machine will stop and an alarm appeared on the PLC.
- (f) Empty medicament tank shall be acknowledged by a message displayed on the PLC and by the glowing of tower lamp.
- (g) Injection of the medicament in the shell in regulated by the six miniature dosing pump to avoid the weight variation and controlled by separate VFD.

Risk identified	Control measures
Power failure	The machine shall unload the pressure.
In case of an emergency stop	The machine shall automatically lift up the segment
	system.
Temperature fluctuation	Thermostats and temperature controllers are installed at
	each spreader box for temperature regulation
Unavailability of ribbon	The machine will stop and an alarm appeared on the
	PLC
Empty medicament tank	A message displayed on the PLC and by the glowing of
	tower lamp

EVALUTION & CONCLUSION:

All the risks associated with Soft Gelatin Encapsulation Machine have been evaluated and control/preventive measures have been taken.



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5.3 METHODOLOGY:

Methodology of the encapsulation process is as follows:

- Maintain the encapsulation area temperature at 18°C±3°C and Humidity 35±5%.
- Check the all gaskets and Change Parts.
- PQ batches of minimum and maximum batch sizes shall be encapsulated with all available Die Rolls which shall be used in different products.
- Details of the PQ batches and Die Roll details shall be mentioned under the heading of "Product Details".
- Challenge run mentioned in the Sampling Plan shall be performed with all Die Roll change parts individually and shall be record under the heading of "Observations and Results of Challenge Tests".
- Transfer the Gelatin Holding Tank to Gelatin Feeding Room and connect the feed pipe from Gelatin Holding Tank to spreader box and connect the feed pipe from gelatin holding tank to gelatin Spreader box.
- Maintain gelatin holding tank temperature 60°C± 5°C, Spreader box temperature at 55°C ± 5°C, Segment temperature at 40°C ± 5°C and cool drum temperature at 10°C ± 3°C.
- Transfer the Medicament tank to Gelatin Feeding Room and connect the feed pipe to the encapsulation machine as per standard procedure and set the parameter as per in process specifications.
- Start the encapsulation process as per the BMR.
- Transfer capsules to tumbler drier and tumble the capsules to strengthening then unload into Ddegreasing pan.



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5.4 PRODUCT DETAILS:

Product details of minimum and maximum batch size shall be verified from the BMR of the product and record in the following section:

<i>5</i>	Drug drugt Dot-11 -6341	was Datah Sima.
5.4.1	Product Detail of Minimu	
	Product Name	:
	Product Code:	
	Batch Number	:
	Batch Size	:
	Mfg. Date	:
	Exp. Date	:
	BMR Number	:
5.4.2	Product Detail of Maxim	um Batch Size:
	Product Name	:
	Product Code:	
	Batch Number	:
	Batch Size	:
	Mfg. Date	:
	Exp. Date	:
	BMR Number	:
Infer	ence:	
	ewed By	
Sign	& Date	



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5.4.3 Die Roll (Capsulator) Details:

S.No.	Die Number	Size of Dies	Number of cavities in a row	Numbers of row in a roll	Done By (Sign. & Date)
					(======================================

Inference:				

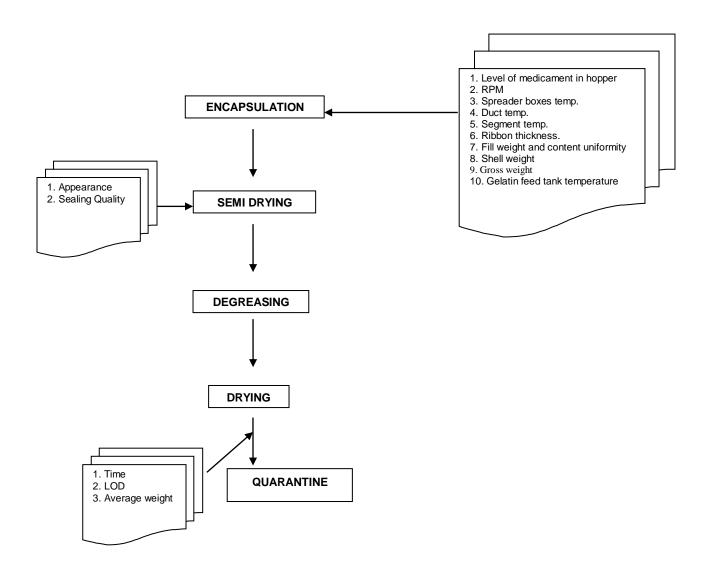
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5.5 PROCESS FLOW DIAGRAM WITH QUALIFICATION PARAMETERS OF SOFT GELATIN ENCAPSULATION MACHINE (CAP-X-8):

Process flow diagram of Soft Gelatin Encapsulation Machine is mentioned below:





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5.6 SAMPLING PLAN:

Parameter	Stage/ Time of Sampling	Sample Quantity	Test Required	Responsibility
Speed	Minimum	100 Caps.	Appearance, Gross wt.,	IPQA
	Maximum	100 Caps.	Gelatin Shell Weight,	
	Maximum	100 Caps.	Average Fill Weight,	
			Ribbon Thickness	
Optimum	Full Hopper	100 Caps.	Appearance, Gross wt.,	IPQA
Speed	Half Hopper	100 Caps.	Gelatin Shell Weight,	
	End Hopper	100 Caps.	Average Fill Weight,	
			Ribbon Thickness	
Optimum	At initial stage	100 Caps.	Appearance, Gross wt.,	IPQA
Speed	At middle stage	100 Caps.	Gelatin Shell Weight,	
	At end stage	100 Caps.	Average Fill Weight,	
			Ribbon Thickness	
	At Regular	20 Caps.	Appearance, Gross wt.,	IPQA
	interval		Gelatin Shell Weight,	
	(every 2 hours)		Average Fill Weight,	
			Ribbon Thickness	
Tumbling of	After 30 minutes	20 Caps.		IPQA
Capsules	After 60 minutes	20 Caps.	Physical Appearance,	
	After 90 minutes	20 Caps.	Sealing of Capsules	
	After 120 minutes	20 Caps.		
Drying	As per BMR	20 Caps.	LOD	IPQA & Q. C.
		20 Caps.		



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5.7 SET PARAMETERS:

Die Roll	No.:	

S.No.	Parameters	Limits
1.	Description	Orange Opaque coloured,
		Oblong shaped soft gelatin
		capsules containing oily paste.
2.	Ribbon thickness	0.75 ± 0.05 mm
2.		(0.70 mm to 0.80 mm)
3.	Gelatin Shell Weight	$300 \text{ mg} \pm 30 \text{ mg}$
5.		(270 – 330 mg)
4.	Weight Variation of Net Content (Individual fill weight)	800 mg ± 5.0 %
4.	`	(760 to 840 mg)
5.	Gross weight of the Capsule (Individual)	1100± 7.5% mg
<i>J</i> .	1 \	(1017.5 to 1182.5 mg)
6.	Room Temperature	18 ± 3°C
7.	Segment Temperature	40 ± 5°C
8.	Spreader Box Temperature	55 ± 5°C
9.	Cooling Drum Temperature	10 ± 3°C
10.	Relative Humidity (%)	35 ± 5 %

Inference:			

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Die Roll No.:	
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S.No.	Parameters	Limits
1.	Description	Orange Opaque coloured
		Oblong shaped soft gelatin
		capsules containing oily paste.
2.	Ribbon thickness	$0.85 \pm 0.05 \text{ mm}$
		(0.80 mm to 0.90 mm)
3.	Gelatin Shell Weight	$620 \text{ mg} \pm 40 \text{ mg}$
	-	(580 mg to 660 mg)
4.	Weight Variation of Net Content (Individual fill weight)	$1170 \text{ mg} \pm 5.0\%$
		(1111.5 – 1228.5 mg)
5.	Gross weight of the Capsule (Individual)	1790 mg ± 7.5%
<i>J</i> .	1 \ ,	(1655.75 to 1924.25mg)
6.	Room Temperature	18 ± 3°C
7.	Segment Temperature	40 ± 5°C
8.	Spreader Box Temperature	55 ± 5 °C
9.	Cooling drum Temperature	10 ± 3°C
		25 500
10.	Relative Humidity (%)	35 ± 5 °C

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5.8 ACCEPTANCE CRITERIA:

The test will be considered failed if the actual test results do not correspond to the expected results as following:

- > Description should be match with the specification.
- ➤ Ribbon thickness should be within the specified limit as mentioned in respective Die Roll Set Parameter.
- ➤ Gelatin Shell Weight should be within the specified limit as mentioned in respective Die Roll Set Parameter.
- ➤ Individual fill Weight should be within the specified limit as mentioned in respective Die Roll Set Parameter.
- ➤ Gross weight of the Capsule should be within the specified limit as mentioned in respective Die Roll Set Parameter.
- > Segment Temperature should be $40 \pm 5^{\circ}$ C.
- > Spreader Box Temperature should be $55 \pm 5^{\circ}$ C.
- \triangleright Cooling drum Temperature should be $10 \pm 3^{\circ}$ C.

5.9 RECORDING OF SAMPLING:

S.No.	Date	Batch No.	Die No.	Stage Details	Quantity	Sampled By (Sign. & Date)

Inference:			
			

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5.10 OBSERVATIONS AND RESULTS OF CHALLENGE TESTS:

Observations and results of challenge tests of minimum and maximum batch size are as follows:

	OBS	ERVATION						
Batch Number:	Die Ro	Die Roll Change Part No.:						
Stage of Sampling:	Minim	num Speed:	F	RPM				
TESTS	RESU	LTS						
Appearance								
Spreader Box temperature (°C)	Left:			Right:				
Ribbon Thickness (From ribbon continuously formed) (mm)	Left:			Right:				
Cooling Drum temperature (°C)								
Gelatin Holding Tank temperatur (°C)	е							
Segment temperature (°C)								
Average Gross Weight Capsules (mg)								
	Weights of	10 Capsules (m	g)		Avg. Net weight			
Gross Wt.								
Shell Wt.								
Net Wt.								
Done By:				Date: _				
Inference:								
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Batch Num	ber:				Die	Roll	Change	Part N	o.:			
Stage of Sa	mpling	•			Max	ximuı	m Spee	d]	_ RPM		
TESTS					RES	SULT	S					
Appearance												
Spreader Box temperature (°C)				Left	:				Right:			
Ribbon Thickness (From ribbon continuously formed) (mm)				Left	:				Right:			
Cooling Dr	um tem	peratur	re (°C)									
Gelatin Fee	d Tank	tempe	rature (°	C)								
Segment temperature (°C)												
Average Gross Weight Capsules (mg)												
		Indi	vidual V	/eig	ghts of 10 Capsules (mg)					Avg. Net weight		
Gross Wt.												
Shell Wt.												
Net Wt.												
Done By: _										D)ate:	
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		OBSERVATIO	N								
Speed of Encapsul	ation Machine	Optimum Speed:	RPM								
Batch Number:		Die Roll Change Part No.:									
Stage of Sampling	:	Full Hopper	Full Hopper								
TESTS		RESULTS									
Appearance											
Spreader Box temp	perature (°C)	Left:	Right:								
Ribbon Thickness continuously form		Left:	Right:								
Cooling Drum tem	perature (°C)										
Gelatin Holding Ta (°C)	ank temperature										
Segment temperatu	ıre (°C)										
Average Gross We (mg)	eight Capsules										
	Individual We	ights of 10 Capsules	ghts of 10 Capsules (mg)								
Gross Wt.											
Shell Wt.											
Net Wt.											
Done By:			Date: _								
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Speed of Encapsulation Machine	e	Optimu	m Spee	d:		RF	PM		
Batch Number:		Die Roll Change Part No.:							
Stage of Sampling:		Half Hopper							
TESTS		RESUL	TS						
Appearance									
Spreader Box temperature (°C)		Left:				Right:			
Ribbon Thickness (From ribbon continuously formed) (mm)		Left:				Right:			
Cooling Drum temperature (°C)									
Gelatin Holding Tank temperatu (°C)	ire								
Segment temperature (°C)									
Average Gross Weight Capsules (mg)	3								
Individual	Weig	ights of 10 Capsules (mg)						Avg. Net weight	
Gross Wt.									
Shell Wt.									
Net Wt.									
Done By:	_					D	ate:		
Inference:									
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Speed of Encapsulation Machine	Opt	imun	n Speed	l:		RP	M		
Batch Number:	Die	Roll	Change	Part N	o.:				
Stage of Sampling:	End	End Hopper							
TESTS	RES	SULT	r S						
Appearance									
Spreader Box temperature (°C)	Left	:				Right:			
Ribbon Thickness (From ribbon continuously formed) (mm)	Left	:				Right:			
Cooling Drum temperature (°C)									
Gelatin Holding Tank temperatur (°C)	e								
Segment temperature (°C)									
Average Gross Weight Capsules (mg)									
Individual V	Weights	ights of 10 Capsules (mg)						Avg. Net weight	
Gross Wt.									
Shell Wt.									
Net Wt.									
Done By:						Da	ate:	 	
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Speed of Encapsulation Machin	ie	Optimu	m Speed			RI	PM		
Batch Number:		Die Roll	Die Roll Change Part No.:						
Stage of Sampling:		Initial S	tage						
TESTS		RESUL							
Appearance									
Spreader Box temperature (°C)		Left:				Right:			
Ribbon Thickness (From ribbon continuously formed) (mm)	1	Left:				Right:			
Cooling Drum temperature (°C))								
Gelatin Holding Tank temperate (°C)	ure								
Segment temperature (°C)									
Average Gross Weight Capsule (mg)	S								
	Weig	ghts of 10 Capsules (mg)						Avg. Net weight	
Gross Wt.									
Shell Wt.									
Net Wt.									
Done By:				'		D	ate:		
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Speed of	Encaps	ulation	Machin	e	Optim	um Spee	ed:		RP	PM	
Batch Nu	mber:				Die Ro	ll Chang					
Stage of S	Samplir	ng:			Middle	e Stage					
TESTS					RESU	LTS					
Appearan	ice										
Spreader	Box ter	nperatu	re (°C)		Left:				Right:		
Ribbon T continuou					Left:						
Cooling I	Orum te	mperati	ıre (°C)								
Gelatin H (°C)	olding	Tank te	mperatu	ire							
Segment	tempera	ature (°	C)								
Average (mg)	Gross V	Veight (Capsules	S							
		Inc	dividual	Wei	ghts of 10 Capsules (mg)						Avg. Net weight
Gross Wt.											
Shell Wt.											
Net Wt.											
Done By:	!			_						Date: _	
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Speed of Encapsulation Machine	,	Optimum	Speed:			RP	M			
Batch Number:		Die Roll Change Part No.:								
Stage of Sampling:		End Stage								
TESTS		RESULTS								
Appearance										
Spreader Box temperature (°C)		Left:				Right:				
Ribbon Thickness (From ribbon continuously formed) (mm)		Left:				Right:				
Cooling Drum temperature (°C)										
Gelatin Holding Tank temperatur (°C)	re									
Segment temperature (°C)										
Average Gross Weight Capsules (mg)										
Individual '	Weig	ghts of 10 Capsules (mg)						Avg. Net weight		
Gross Wt.										
Shell Wt.										
Net Wt.										
Done By:	-					Da	ate:			
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						OBSE	RVAT	ION				
Batch Number:						e Roll	Chang	e Part N	o.:			
Stage of S	Samplin	g:			Minimum Speed]	_ RPM			
TESTS					RI	ESUL	ΓS					
Appearan	ice											
Spreader Box temperature (°C)				Le	ft:				Right:			
Ribbon Thickness (From ribbon continuously formed) (mm)				Le	ft:				Right:			
Cooling Drum temperature (°C)												
Gelatin Holding Tank temperature (°C)												
Segment temperature (°C)												
Average (mg)	Gross W	eight C	apsules	}								
		Ind	lividual	Wei	ghts	s of 10	Capsu	les (mg))			Avg. Net weight
Gross Wt.												
Shell Wt.												
Net Wt.												
Done By:	:			_						I	Date:	
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Batch Number		Die R	oll Chan	ge Part N	Vo.:					
Stage of Samp	ing:		Maxi	Maximum Speed RPM						
TESTS			RESU	JLTS						
Appearance										
Spreader Box temperature (°C)			Left:				Right:			
Ribbon Thickness (From ribbon continuously formed) (mm)			Left:				Right:			
Cooling Drum	_									
Gelatin Holdin (°C)	g Tank te									
Segment tempe	erature (°C									
Average Gross (mg)	Weight (Capsules								
	Inc	dividual We	eights of	10 Caps	ules (mg	g)			Avg. Net weight	
Gross Wt.										
Shell Wt.										
Net Wt.										
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Speed of Encaps	ulation I	Machine	Optim	Optimum Speed: RPM						
Batch Number:			Die Ro	Die Roll Change Part No.:						
Stage of Samplin	ıg:		Full H	Full Hopper						
TESTS			RESU	LTS						
Appearance										
Spragdor Day tar	nnorotur	a (°C)	Left:				Dight			
Spreader Box ter	Leit.				Right:					
Ribbon Thickness continuously for	Left:				Right:					
Cooling Drum te	mperatu									
Gelatin Holding (°C)	Tank ter	nperature								
Segment tempera	iture (°C	<u>.</u>)								
Average Gross V (mg)	Veight C	apsules								
	Ind	ividual We	eights of 1	0 Capsu	Avg. Net weight					
Gross Wt.										
Shell Wt.										
Net Wt.										
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Speed of Encapsulation Machin	ne	Optimu	m Speed	l:		RPM	1		
Batch Number:		Die Roll	Die Roll Change Part No.:						
Stage of Sampling:		Half Ho	pper						
TESTS		RESUL	TS						
Appearance									
Spreader Box temperature (°C)	Left:				Right:				
Ribbon Thickness (From ribbo continuously formed) (mm)	Left:				Right:				
Cooling Drum temperature (°C)								
Gelatin Holding Tank temperat									
Segment temperature (°C)									
Average Gross Weight Capsule (mg)	es								
Individu	al We	ights of 10 Capsules (mg)						Avg. Net weight	
Gross Wt.								J	
Shell Wt.									
Net Wt.									
Done By: Inference:						Dat	te:		
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					OBS	ERVATI	ON					
Speed of E	Speed of Encapsulation Machine					Optimum Speed: RPM						
Batch Nun	nber:				Die Roll Change Part No.:							
Stage of Sampling:					End H	opper						
TESTS					RESUI	LTS						
Appearance	e											
Spreader Box temperature (°C)					Left:				Right:			
Ribbon Thickness (From ribbon continuously formed) (mm)				Left:				Right:				
Cooling Drum temperature (°C)												
Gelatin Holding Tank temperature (°C)												
Segment to	Segment temperature (°C)											
Average G (mg)	ross V	Veight (Capsule	S								
		Inc	dividua	l Wei	ghts of 1	0 Capsulo	es (mg))			Avg. Net weight	
Gross Wt.												
Shell Wt.												
Net Wt.												
Done By:									D	ate:		
Inference	:											
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Reviewed By Sign & Date



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		OBSE	RVATIO	N				
Speed of Encapsulation Machin	e	Optimum Speed:RPM						
Batch Number:		Die Roll Change Part No.:						
Stage of Sampling:		Initial S	tage					
TESTS		RESUL	ΓS					
Appearance								
		T 0			D. 1			
Spreader Box temperature (°C)		Left:			Right:			
Ribbon Thickness (From ribbon continuously formed) (mm)	l	Left:			Right:			
Cooling Drum temperature (°C)								
Gelatin Holding Tank temperatu (°C)	ıre							
Segment temperature (°C)								
Average Gross Weight Capsules (mg)	S							
Individua	l Wei	ghts of 10	Capsule	s (mg)		Avg. Net weight		
Gross Wt.								
Shell Wt.								
Net Wt.								
Done By:	_				Da	ate:		
Inference:								
Reviewed By								

Reviewed By Sign & Date



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Speed of Encapsulation Machine Batch Number: Die Roll Change Part No.: Stage of Sampling: Middle Stage TESTS RESULTS Appearance Spreader Box temperature (°C) Ribbon Thickness (From ribbon continuously formed) (mm) Cooling Drum temperature (°C) Gelatin Holding Tank temperature (°C) Segment temperature (°C) Average Gross Weight Capsules (mg) Individual Weights of 10 Capsules (mg) Gross Wt. Shell Wt.	
Stage of Sampling: Middle Stage RESULTS Appearance Spreader Box temperature (°C)	
TESTS Appearance Spreader Box temperature (°C) Ribbon Thickness (From ribbon continuously formed) (mm) Cooling Drum temperature (°C) Gelatin Holding Tank temperature (°C) Segment temperature (°C) Average Gross Weight Capsules (mg) Individual Weights of 10 Capsules (mg) Gross Wt.	
Appearance Spreader Box temperature (°C)	
Spreader Box temperature (°C) Ribbon Thickness (From ribbon continuously formed) (mm) Cooling Drum temperature (°C) Gelatin Holding Tank temperature (°C) Segment temperature (°C) Average Gross Weight Capsules (mg) Individual Weights of 10 Capsules (mg) Gross Wt.	
Ribbon Thickness (From ribbon continuously formed) (mm) Cooling Drum temperature (°C) Gelatin Holding Tank temperature (°C) Segment temperature (°C) Average Gross Weight Capsules (mg) Individual Weights of 10 Capsules (mg) Gross Wt.	
Cooling Drum temperature (°C) Gelatin Holding Tank temperature (°C) Segment temperature (°C) Average Gross Weight Capsules (mg) Individual Weights of 10 Capsules (mg) Gross Wt.	
Gelatin Holding Tank temperature (°C) Segment temperature (°C) Average Gross Weight Capsules (mg) Individual Weights of 10 Capsules (mg) Gross Wt.	
(°C) Segment temperature (°C) Average Gross Weight Capsules (mg) Individual Weights of 10 Capsules (mg) Gross Wt.	
Average Gross Weight Capsules (mg) Individual Weights of 10 Capsules (mg) Gross Wt.	
(mg) Individual Weights of 10 Capsules (mg) Gross Wt.	
Gross Wt.	
	Avg. Net weight
Shell Wt	
Net Wt.	
Done By: Date:	
Inference:	

Reviewed By Sign & Date



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Speed of Encapsulation Machine	Optimum S	Speed:	RI	PM		
Batch Number:	Die Roll Ch	ange Part No	.:			
Stage of Sampling:	End Stage					
TESTS	RESULTS					
Appearance						
Spreader Box temperature (°C)	Left:		Right:			
Ribbon Thickness (From ribbon continuously formed) (mm)	Left:		Right:			
Cooling Drum temperature (°C)						
Gelatin Holding Tank temperature (°C)	;					
Segment temperature (°C)						
Average Gross Weight Capsules (mg)						
Individual V	Veights of 10 Ca	ghts of 10 Capsules (mg)				
Gross Wt.						
Shell Wt.						
Net Wt.						
Done By:		Date:				
Inference:						
Reviewed By Sign & Date						



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5.11 TUMBLING OF CAPSULES:

	MINIMUM BATCH SIZE										
		Compling	Resul								
S.No.	Die No.	Sampling Time	Sample Quantity	Physical Appearance	Sealing of Capsules	Done By					

	MAXIMUM BATCH SIZE										
		Campling	Comple	Res							
S.No.		Sample Quantity	Physical Appearance	Sealing of Capsules	Done By						

Inference:		

Reviewed By Sign & Date



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5.12 DRYING OF CAPSULES:

	MINIMUM BATCH SIZE										
S.No.	Sampling Time	Sample Quantity	Result	Compiled By							

	MAXIMUM BATCH SIZE										
S.No.	Sampling Time	Sample Quantity	Result	Compiled By							

Inference:			

Reviewed By Sign & Date



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5.13 PROCESS CHECKS DURING ENCAPSULATION (AT OPTIMUM SPEED):

Batch No.:					Machine Speed: RPM			
Date	Time	Change Part No.	Appearance	Gross weight (mg)	Gelatin Shell Weight (mg)	Fill Weight (mg)	Ribbon Thickness (mm)	
Inferer	200		-					
Review Sign &	ved By Date							



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Batch No.:	Machine Speed:	RPM
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Date	Time	Change Part No.	Appearance	Gross weight (mg)	Gelatin Shell Weight (mg)	Fill Weight (mg)	Ribbon Thickness (mm)

Inference:			
Reviewed By Sign & Date			



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D-4-	T:	Batch	T(0C)	Relative Humidity	D l
Date	Time	Number	Temperature(°C)	(%)	Remarks
ference:					



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Date	Time	Batch	Temperature(°C)	Relative Humidity	Remarks
		Number	P	(%)	
Inference:					
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6.0 DEFICIENCY AND CORRECTIVE ACTION(S) REPORT(S)

Following deficiency was verified and corrective actions taken.
Description of deficiency:
Corrective action(s) taken :

Deviation accepted by (Sign/Date)

Deviation Approved by Sign/Date)



PROTOCOL No.:

7.0	PERFORMATION QUALIFICATION FINAL REPORT:
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7.1 **SUMMARY:**

7.2 CONCLUSION:

Prepared By Sign/Date

Checked By Sign/Date



PROTOCOL No.:

7.3 FINAL REPORT APPROVAL

The final report shall be signed after verifying that all the tests required in the qualification report of Soft Gelatin Encapsulation Machine are completed, reconciled and attached to the Qualification report or included in the qualification summary report and also verified that all amendments and discrepancies are documented, approved and attached to respective report (If applicable).

Signature in the block below indicate that all items in the qualification report of Soft Gelatin Encapsulation Machine have been reviewed and found to be acceptable and that all variations or discrepancies (if any) have been satisfactorily resolved.

FUNCTION	NAME	DESIGNATION	DEPARTMENT	SIGNATURE	DATE
REVIEWED BY			QUALITY ASSURANCE		
			PROJECTS / ENGINEERING		
			QUALITY CONTROL		
			PRODUCTION		
APPROVED BY			HEAD OPERATION		
			QUALITY ASSURANCE		