PROCESS VALIDATION PROTOCOL

FOR PACKING OF

FERROUS ASCORBATE, FOLIC ACID AND CYANOCOBALAMIN

Protocol No : .....

Effective Date : ----------

TABLE OF CONTENTS

1.0 PROTOCOL APPROVAL:

	Department	**Name**	**Signature**	**Date**
Prepared By	Quality Assurance			
Reviewed By	Production			
	Quality Control			
	Engineering			
Approved By	Head-Production			
	Head-QA			

2.0 BATCHES UNDER VALIDATION :

S.No.	Batch No.	Batch Size	Pack Style	Mfg. Date	Exp. Date
1					
2					
3					

3.0 VALIDATION TEAM

Department	Name	Designation	Signature	Date
Production				
Quality Control				
Quality Assurance				
Engineering				

4.0 INTRODUCTION:

Ferrous Ascorbate, Folic Acid and Cyanocobalamin Tablets has been developed using the Wet Granulation Technology. The batches conducted during the validation trials shall be setup for stability study and other parameters monitored periodically and shall be reviewed by the validation task force. It has also been analyzed that Ferrous Ascorbate, Folic Acid and Cyanocobalamin Tablets will be manufactured as per the formula set up by the R & D. The analytical methods transferred from the Analytical Research group to the plant shall be utilized.

5.0 OBJECTIVE:

The objective of this exercise is to develop an upgraded validation protocol as per the SOP in order to have documented evidence to ensure that critical process variables established and are checked during validation. The validation shall be carried out for the entire packing process.

6.0 SCOPE:

This protocol for the Process validation of Ferrous Ascorbate, Folic Acid and Cyanocobalamin Tablets formulation defines the procedural aspects to be followed while carrying out Packing Process validation activity that includes prerequisites before commencing the actual work like, Master formula and process, approved vendors and characteristics of packing materials. Also it defines the acceptance criteria, re-validation criteria and justification for critical process parameters.

7.0 REASON FOR VALIDATION:

Introduction of new product in ……Location.

8.0 VALIDATION CRITERIA:

The packing process validation shall be carried out for the 3 consecutive batches for each pack style / types.

The packing process validation protocol and report shall be carried out based on the MPC / PPS received from PPIC department and BPR for the product.

9.0 REVALIDATION CRITERIA:

Packing re-validation shall be carried in following cases;

Changes in Primary Packing style

Change in primary packing material

Change in critical component in equipment

Change in Packing site or location

10.0 RESPONSIBILITIES OF VALIDATION TASK FORCE:

The Formulation & Development, Production, QA/QC, Technical support department are responsible for the overall adherence to the protocol. Specific duties will include the following:

11.0 Monitoring protocol completeness, accuracy, technical content and applicability.

12.0 Scheduling and carrying out the Validation activity.

13.0 Data Review

14.0 Preparation of the Validation report

15.0 Approval of the report and / or recommendations of further work required.

The responsibilities of Formulation & Development, Production and QA/QC are

a. To facilitate the timely execution of this protocol by provision of personnel, equipment and materials as required.

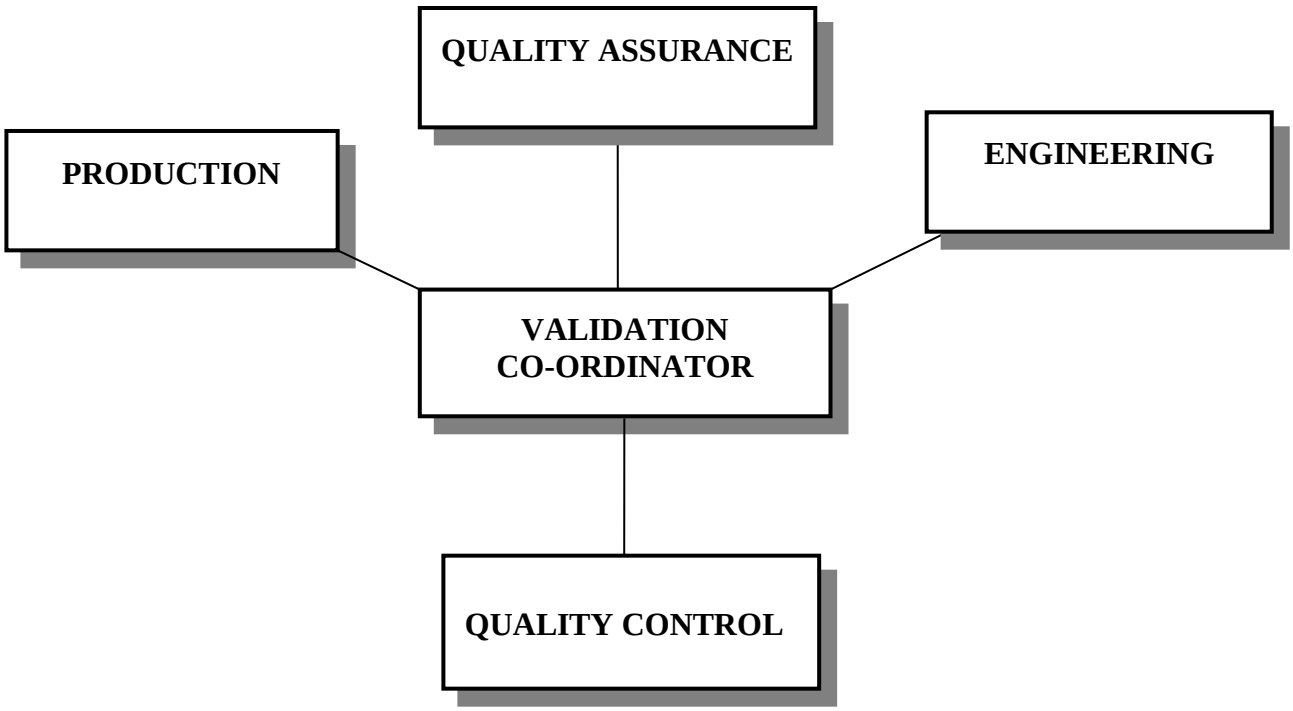
16.0 Ensure compliance with cGMP and in house SOPs.

It is the responsibility of QA / QC Departments to record all results for the Validation exercise in the form of reports at each step of operation.

Note: All work carried out shall be in accordance with SOPs and in accordance to the Finished Product Specification.

It is responsibility of the Validation team to review test results and documentation and determine the success of the Validation execution. A member of the Validation team or QA/QC as appropriate shall check all cross-referencing and numerical results. To ensure complete scale up, validation of the process each step of the protocol shall pass the acceptance criteria. Where problems occur with analytical results, SOP on repeat test procedures shall be followed. Any problem that occurs during the manufacturing process shall be documented using an Unplanned Deviation Report. Any deviations or deficiencies, which occurred when carrying out of the validation testing, shall be documented. All deficiencies and deviations shall be addressed before completing the Validation Report.

11.0 VALIDATION TASK FORCE:



17.0 PRODUCT PROFILE:

Name of the product: Ferrous Ascorbate, Folic Acid and Cyanocobalamin

Composition : Each uncoated tablet contains

Ferrous Ascorbate equivalent to elemental Iron …100 mg

Folic Acid IP……..1.5 mg

Cyanocobalamin triturate equivalent to

Cyanocobalamin I.P. ..... 7.5 mcg

Appropriate overages of vitamins added

Colours :Lake Ponceau 4R , Lake Erythrosine & Titanium dioxide I.P.

Shelf Life : 36 Months

Appearance : Pink coloured capsule shaped biconvex film coated tablets with plain surface on both side.

Storage Condition : Store in a cool, dry place. Protect from light.

Pack Style : 3 X 1 x 10 Tablets

18.0 REFERENCE DOCUMENTS PROFILE:

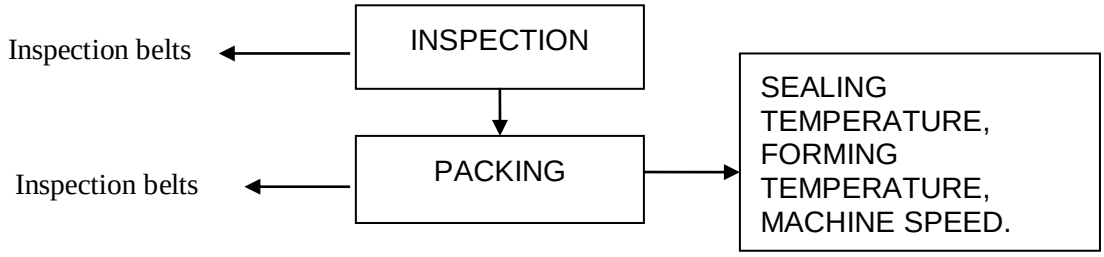
Batch No.	PPS No.	BPR No.	Finished product specification no. *

*** Current version to be used**

Finished Product Specification: The Reference copy of the Finished Product specification is attached with the protocol**.**

19.0 PROCESS FLOW DIAGRAM:

EQUIPMENTS PROCESS FLOW DIAGRAM CRITICAL STEPS



NOTE: Upto Inspection Stage Reference Protocol No.: **……..**

20.0 PACKING DETAILS:

1 Pack one strip of 10 tablets. Put the batch details on the strip.

2 Pack such 1 strip in a mono carton (1x 10) & put batch details on it.

3 Pack such 3 mono cartons in an outer carton (3 x 1 x 10). Put the batch details & seal the carton with cello tape.

4 Pack such 80 cartons in a 5 ply printed brown shipper.

5 Seal the shipper with 72 mm brown BOPP tape printed with Company Name & Logo in Red along the length only.

6 Number of cartons in a shipper: 10 x 2 x 4 : 80 Numbers.

21.0 RISK ANALYSIS:

S.No.	Potential Failure mode	Potential Effect (Process / end users) or consequences	S	Potential causes	O	Current control measures	D	RPN (SXOX D)	Proposed Action Plan
1	Strip leak test.	Stability of product will be affected. Market complaint . Regulatory non-compliance.	9	Pin holes in strip pack	2	Packing material checked randomly for presence of any pin holes.	1	9x2x1=18	RPN no. obtained is 18 and detect ability is almost certain. Hence Current control measures are adequate to minimize risk.
2	Batch details printing on label or improper and wrong details.	Market complaint. Regulatory non-compliance. Batch recall if wrong details are printed.	8	Printing drum is not aligned properly.	3	Alignment of printing drum is checked.	1	8 x 3x 1=24	RPN no. obtained is 24 and detect ability is almost certain. Hence Current control measures are adequate to minimize risk.
3	Less or more Tablets in pocket	Less or more yield market complaint	8	Less or more tablets filled in pocket during manual operation.	2	If less or more tablets are passes through check weighed and any shortage or excess will get rejected. Operators are trained to carryout manual packing.	1	8 x 2 x 1 = 16	RPN no. obtained is 16 and detect ability is almost certain. Hence Current control measures are adequate to minimize risk.
4	Broken tables are packed.	Market complaint.	8	Improper tablet inspection. Soft or friable tab. Height adjustment between hopper bottom neck and	2	Tablet inspection operators are trained periodically. Compression and coating operations are	1	8 x 2 x 1 =16	RPN no. obtained is 16 and detect ability is almost certain. Hence Current control measures are adequate to minimize risk.

S.No.	Potential Failure mode	Potential Effect (Process / end users) or consequences	S	Potential causes	O	Current control measures	D	RPN (SXOX D)	Proposed Action Plan
				bowl dish. Tablets getting damaged during compression or while passing through metal detector.		validated. Less gap is present in hopper neck and bowl dish. Compression operations are validated.			
5	Improper material flow.	Can led to mix up and contamination.	9	Improper design and layout. Improper training to the persons. Personal negligence.	2	Separate entry for final and primary packaging material. Separate man material entry and exit. Persons are trained for proper material handling procedures. Duly labeled dispensed packaging material is transferred to packing department under lock and key.	1	9 x 2 x 1 = 18	RPN no. obtained is 18 and detect ability is almost certain. Hence Current control measures are adequate to minimize risk.
6	Improper sealing of tablet.	Stability of product will be affected. Market complaint Regulatory noncompliance.	9	speed of The conveyor is improper. Improper distance between sealing	2	Speed of conveyor is set at the starting of packing activity. Operators are trained to carry out machine	1	9x2x1 =18	RPN no. obtained is 18 and detect ability is almost certain. Hence Current control measures adequate to minimize risk .

PACKING PROCESS VALIDATION PROTOCOL FOR STRIP (FERROUS ASCORBATE, FOLIC ACID AND CYANOCOBALAMIN TABLETS)

Batch Size: 1000000 Tablets	**BMR No.: XXX/PRO/BMR/ZZ-00**
Protocol No.: XXX/BBB/PPV/ZZ-00	**Page No.: 3 of 3**

S.No.	Potential Failure mode	Potential Effect (Process / end users) or consequences	S	Potential causes	O	Current control measures	D	RPN (SXOX D)	Proposed Action Plan
				roller.		setting.			

22.0 SAMPLING PROCEDURES:

1. All validation samples shall be taken from In-process containers properly labeled with correct product / batch number and batch details as follows:

   Product : B. Size :

   Batch No.: Lot No.:

   MFG Date : EXP Date :

   Stage :

   Sampled By/ Date:

2. **INPROCESS SAMPLE:**

   These samples shall be taken in accordance with SOP for **'Procedure for sampling of intermediates and finished products".**

   The samples shall be placed in container or sampling poly bag and labeled as follows:

   Product : B. Size :

   Batch No.: Lot No.:

   MFG Date : EXP Date :

   Stage :

   Sampled By/ Date:

23.0 SAMPLE SUMMARY

Stage	Location	Sample Size	Sample Type	Frequency	Tests	Acceptance Criteria
Packing	From strip packing machine	As per BPR	Individual Strip	Low Temperature (Minimum and Maximum speed)	Physical appearance and knurling, Batch coding, Leak test, Appearance	As per BPR
				High Temperature (Minimum and Maximum speed)		
				Optimum Temp (Optimum speed)		
		40 Tablets*	Individual Strip	High Temperature Low Speed*	Assay * Appearance*	As Per Finished Product Specification
		100 Tablets* + 10 g*	Composite sample*	End of Packing	Complete Analysis*	As Per Finished Product Specification
					MLT*	As per GTP

* - To be sent to QC for testing along with intimation slip

24.0 CALIBRATION / QUALIFICATION:

All Instrument / equipment utilized in conducting the Validation activity shall be within calibration/ qualification.

Calibration / Qualification shall be conducted in-house in accordance with approved SOP's or by an external body. All standards used in calibration shall be traceable to a national standard and shall remain within calibration for the duration of the Validation exercise.

METHODOLOGY FOR PROCESS VALIDATION:

Details of the testing to be carried out are included in Packing:

I) High temperature and low speed

II) MLT

ACCEPTANCE CRITERIA:

The overall criteria by which the efficiency of the packing procedure shall be judged is based on the following:

A validation scale up batch shall be considered acceptable if all In-process results, finished product results and additional validation testing meets the acceptance criteria as outlined in 'Sample Summary.

20.0 SUMMARY, CONCLUSION AND APPROVAL:

Record the summary of the validation study with special emphasis on physical parameter, chemical parameter and evaluation of data obtained in validation report. Details of out of specification / deviation if any, should be recorded in validation report. Record the recommendations or suggestions based on the implementations of the results in validation report should include the approval of quality assurance, quality control and production head.

21.0 ABBREVIATIONS:

SSF : Small scale facility

QA : Quality Assurance

QC : Quality control

OOS : Out of specification

SOP : Standard operating procedure

BPR : Batch Packing record

PPS : Product Packing Specification

PPIC : Production Planning and Inventory Control

REVISION CARD

S.No.	PPV No.	Reason for Revision	Change Control No.
1		New	-----