DECODING PHARMA

QUALITY ASSURANCE DEPARTMENT

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Hold Time Study of Products	**Effective Date:**
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1.0 PURPOSE

To define a procedure for establishing the simulated hold time period for products at different stages of manufacturing.

2.0 SCOPE

2.1 This procedure applies to all products manufactured ……...

3.0 REFERENCE(S) & ATTACHMENTS

3.1 References

3.1.1 SOP: “Protocol Numbering and Issuance System”

3.2 Attachments

3.2.1 Attachment- I : Product hold time study protocol and report

3.2.2 Attachment-II : Hold time sampling Register

3.2.3 Attachment-III : Hold time duration of Products

4.0 DEFINITION & ABBREVIATION(S)

4.1 Definitions

4.1.1 Nil

4.2 Abbreviations

4.2.1 MLT : Microbial limit test

4.2.2 DT : Disintegration test

4.2.3 LOD : Loss on drying

4.2.4 Approx. : Approximately

4.2.5 QA : Quality Assurance

4.2.6 SOP : Standard operating procedure

4.2.7 Doc. No. : Document Number

4.2.8 Sr. No. : Serial Number

4.2.9 QC : Quality Control

4.2.10 SS : Stainless steel

4.2.11 HDPE : High density polyethylene

4.2.12 A.R. No. : Analytical reference Number

4.2.13 g : gram

4.2.14	hrs.	: Hours
4.2.15	MFG.	: Manufacturing
4.2.16	EXP.	: Expiry
4.2.17	IPQA	: In-process quality assurance
4.2.18	OOS	: Out of Specification
4.2.19	API	: Active pharmaceutical ingredient

5.0 RESPONSIBILITY:

5.1 QA Department Person:

5.1.1 To Prepare, execute and review Hold Time Study Protocol and Report.

5.1.2 Sampling of samples as per approved Hold time study protocol.

5.1.3 To monitor the simulated storage conditions of product.

5.1.4 To be a part of study team.

5.2 Production/ Engineering Department:

5.2.1 To provide the necessary requirements for the execution of study.

5.2.2 To be a part of study team.

5.3 Quality Control Department:

5.3.1 Testing the hold time study samples as per the protocol.

5.3.2 To provide the analytical test report to Quality Assurance.

5.3.3 To be a part of study team.

5.4 Quality Assurance Head:

5.4.1 To ensure implementation of the defined procedure.

5.4.2 To approve the product hold time study outcome.

5.5 Plant Head:

5.5.1 To ensure implementation of the defined procedure.

6.0 Distribution:

I. Quality Assurance

II. Quality Control

III. Production

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7.0 PROCEDURE:

7.1 Simulated hold time studies shall be conducted on first three batches of all the products.

7.2 Quality Assurance (QA) person shall prepare the protocol and blank report for performing hold time studies.

7.2.1 Each protocol shall have the following information:

- Hold time study procedure
- Selection of hold samples
- Storage conditions
- Sample size/Quantity
- Frequency of analysis
- Test parameters to be evaluated
- Acceptance criteria

7.3 QA shall sample the required samples and submit the sample to Quality Control (QC) for analysis.

7.4 QC person shall analyze the samples and submit the results to QA.

7.5 QA person shall compile the results and review the results.

7.6 Based on the results, QA shall establish the hold time for each product.

7.7 Selection of batches for Hold Time studies

7.7.1 Three consecutive batches of a new product shall be placed for hold time study.

7.7.2 Hold time study can also be initiated on single batch in case of major change in Formula, Process, API source and environmental conditions of the area.

7.8 Storage of Hold Time samples

7.8.1 Dispensed raw material shall be stored under simulated conditions in double-layered poly bags closed tightly with nylon string

7.8.2 Lubricated granules shall be stored under simulated conditions in double-layered poly bags closed tightly with nylon string and kept in SS316 container with lid.

7.8.3 Core and coated tablets shall be stored under simulated conditions in double-layered poly bags closed tightly with nylon string and kept in SS316 container with lid.

7.8.4 Filled capsules shall be stored under simulated conditions in double-layered poly bags closed tightly with nylon string and kept in SS316 container with lid.

7.8.5 Binder solution and coating solution shall be stored in glass container with lid.

7.9 Sampling procedure for hold time study:

7.9.1 Use clean accessories (spatula/spoon/sampling rod) during sampling of lubricated blend.

7.9.2 Wear hand gloves while sampling

7.9.3 Sampling at different interval of hold time shall be done in the storage area and at the time of sampling it shall be ensured that all the other containers in the storage area are in closed condition except the one from which the sample is to be withdrawn.

NOTE: For sampling of microbiological test sample:

- Use Clean accessories (spatula/spoon/sampling rod) during sampling.
- Wear sterile hand gloves during sampling.

7.10 Sample Size for Hold Time studies:

7.10.1 **Dispensed Raw Material/Lubricated granules:** Approx. _____ g for dispensed raw material and approx. _____ g for lubricated granules (or as per requirement for a specific product as per approved specifications).

7.10.2 **Core tablets, Coated tablets and Filled capsules:** Approximately _____ numbers (or as per requirement for a specific product as per approved specifications).

7.11 Frequency of Analysis:

7.11.1 **Dispensed Raw Material:**

The raw material used in the manufacturing of the Hold Time Study batch shall be sampled, analyzed and approved before use in the production as per their respective approved specifications. Details of the raw material shall be recorded in the report as shown below in the table.

Sr. No.	Item Name	A.R No.	Item Code	Qty. taken for Hold time Study

NOTE:

1. Raw material shall be selected based on its nature and scientific rationale.

Sampling Plan for Dispensed Raw Material Hold Time Study				
S.No.	**Storage Time**	**Test Parameters**	**Quantity of Sample**	**Acceptance Criteria**
1	Initial (0)	a) Appearance b) Water Content /LOD (wherever applicable) c) Assay (wherever applicable) d) MLT	As per requirement	As per specification
2	7th Day	a) Appearance		

Sampling Plan for Dispensed Raw Material Hold Time Study				
S.No.	**Storage Time**	**Test Parameters**	**Quantity of Sample**	**Acceptance Criteria**
		b) Water Content /LOD (wherever applicable) c) Assay (wherever applicable) d) MLT		
3	14th Day	a) Appearance b) Water Content /LOD (wherever applicable) c) Assay (wherever applicable) d) MLT		

7.11.1 **Lubricated Granules:**

Sampling Plan for Lubricated Granules Hold Time Study					
S.No.	**Storage Time**	**Test Parameters**	**Location**	**Quantity of Sample**	**Acceptance Criteria**
1	*Initial (0)	a) Appearance b) LOD c) Water Content (if applicable) d) Bulk density e) Tapped Density f) Assay g) Related Substance h) particle size distribution i) MLT	Composite sample from Blender	As per product requirement	As per specification
2	5th day	a) Appearance b) LOD c) Water Content (if applicable) d) Bulk density e) Tapped Density f) Assay g) MLT	Composite sample from Blender	As per product requirement	As per specification
3	10th day	a) Appearance b) LOD c) Water Content (if applicable) d) Bulk density e) Tapped Density f) Assay g) MLT	Composite sample from Blender	As per product requirement	As per specification
4	21th day	a) Appearance b) LOD c) Water Content (if applicable) d) Bulk density e) Tapped Density f) Assay g) Related Substance h) particle size distribution i) MLT	Composite sample from Blender	As per product requirement	As per specification

7.11.2 **Binder Solution for granulation:**

Sampling Plan for Binder Solution Hold Time Study

S.No.	Storage Time	Test Parameters	Quantity of Sample	Acceptance Criteria
1	*Initial (0)	a) Physical appearance b) Viscosity (wherever applicable) c) Bio-burden	As per product requirement	As per specification
2	2 hrs	a) Physical appearance b) Viscosity (wherever applicable)	As per product requirement	As per specification
3	4 hrs	a) Physical appearance b) Viscosity (wherever applicable)	As per product requirement	As per specification
4	6 hrs	a) Physical appearance b) Viscosity (wherever applicable)	As per product requirement	As per specification
5	8 hrs	a) Physical appearance b) Viscosity (wherever applicable) c) Bioburden **(for Starch binder only)**	As per product requirement	As per specification
6	12 hrs	a) Physical appearance b) Viscosity (wherever applicable)	As per product requirement	As per specification
7	24 hrs	a) Physical appearance b) Viscosity (wherever applicable) c) Bioburden	As per product requirement	As per specification

7.11.3 **Uncoated Tablets:**

Sampling Plan for Uncoated Tablets Hold Time Study

S.No.	Storage Time	Test Parameters	Location	Quantity of Sample	Acceptance Criteria
1	*Initial (0)	a) Description b) Hardness c) Thickness d) Friability e) Disintegration Time f) Water Content/ LOD g) Dissolution (wherever applicable) h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Content Uniformity (wherever applicable) l) Bioburden	Composite sample	As per product requirement	As per specification
2	10^{th} day	a) Description b) Hardness c) Thickness d) Friability e) Disintegration Time f) Water Content/ LOD g) Dissolution (wherever applicable) h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Bioburden	Composite sample	As per product requirement	As per specification
3	20^{th} day	a) Description b) Hardness c) Thickness d) Friability e) Disintegration Time f) Water Content/ LOD g) Dissolution h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Bioburden	Composite sample	As per product requirement	As per specification
4	40^{th} day	a) Description b) Hardness c) Thickness d) Friability	Composite sample	As per product requirement	As per specification

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Sampling Plan for Uncoated Tablets Hold Time Study

S.No.	Storage Time	Test Parameters	Location	Quantity of Sample	Acceptance Criteria
		e) Disintegration Time f) Water Content/ LOD g) Dissolution (wherever applicable) h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Content Uniformity (wherever applicable) l) Bioburden			
5	60^{th} day	a) Description b) Hardness c) Thickness d) Friability e) Disintegration Time f) Water Content/ LOD g) Dissolution (wherever applicable) h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Content Uniformity (wherever applicable) l) Bioburden	Composite sample	As per product requirement	As per specification

7.11.4 **Coated Tablets:**

Sampling Plan for Coated Tablets Hold Time Study

S.No.	Storage Time	Test Parameters	Location	Quantity of Sample	Acceptance Criteria
1	*Initial (0)	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) f) Impurities/ Related Substances (wherever applicable) g) Bioburden	Composite sample	As per product requirement	As per specification
2	10th day	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) f) Impurities/ Related Substances (wherever applicable) g) Bioburden	Composite sample	As per product requirement	As per specification
3	20th day	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) f) Impurities/ Related Substances (wherever applicable) g) Bioburden	Composite sample	As per product requirement	As per specification
4	40th day	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) f) Impurities/ Related Substances (wherever applicable) g) Bioburden	Composite sample	As per product requirement	As per specification
5	60th day	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) e) Assay			

Sampling Plan for Coated Tablets Hold Time Study					
S.No.	**Storage Time**	**Test Parameters**	**Location**	**Quantity of Sample**	**Acceptance Criteria**
		f) Impurities/ Related Substances (wherever applicable) g) Bioburden			

7.11.5 **Coating Solution:**

Sampling Plan for Coating Solution Hold Time Study				
S.No.	**Storage Time**	**Test Parameters**	**Quantity of Sample**	**Acceptance Criteria**
1	*Initial (0)	a) Physical appearance b) pH c) Redispersibility d) Bioburden	As per product requirement	As per specification
2	6 hrs	a) Physical appearance b) pH c) Redispersibility d) Bioburden	As per product requirement	As per specification
3	12 hrs	a) Physical appearance b) pH c) Redispersibility d) Bioburden	As per product requirement	As per specification
4	18 hrs	a) Physical appearance b) pH c) Redispersibility d) Bioburden	As per product requirement	As per specification
5	24 hrs	a) Physical appearance b) pH c) Redispersibility d) Bioburden	As per product requirement	As per specification
6	36 hrs	a) Physical appearance b) pH c) Redispersibility d) Bioburden	As per product requirement	As per specification
7	48 hrs	a) Physical appearance b) pH c) Redispersibility d) Bioburden	As per product requirement	As per specification

7.11.6 **Filled Hard Gelatin Capsules:**

Sampling Plan for Coated Tablets Hold Time Study

Sr. No.	Storage Time	Test Parameters	Location	Quantity of Sample	Acceptance Criteria
1	*Initial (0)	a) Description b) Net filled content per capsule c) Disintegration Time d) Water Content/ LOD e) Dissolution f) Assay g) Related Substances (wherever applicable) h) Bioburden	Composite sample	As per product requirement	As per specification
2	5th day	a) Description b) Net filled content per capsule c) Disintegration Time d) Water Content/ LOD e) Dissolution f) Assay g) Related Substances (wherever applicable) h) Bioburden	Composite sample	As per product requirement	As per specification
3	10th day	a) Description b) Net filled content per capsule c) Disintegration Time d) Water Content/ LOD e) Dissolution f) Assay g) Related Substances (wherever applicable) h) Bioburden	Composite sample	As per product requirement	As per specification
4	14th day	a) Description b) Net filled content per capsule c) Disintegration Time d) Water Content/ LOD e) Dissolution f) Assay g) Related Substances (wherever applicable) h) Bioburden	Composite sample	As per product requirement	As per specification

NOTE:

1. * Initial (0) sample for hold time study shall not be sent to QC. Analysis of Initial (0) day shall be done on the in-process and bulk finish sample.

2. All the physical tests in case of uncoated tablet/ coated tablet/ filled capsule such as thickness, hardness, disintegration time, friability as applicable shall be tested by IPQA person and the result shall be recorded in the respective report.

7.12 Samples withdrawn shall preferably be analyzed on the same day. If there is delay in the analysis, then samples shall be maintained at the cold temperature i.e. 4 to 8 °C till the analysis is performed.

7.13 Acceptance Criteria:

7.13.1 Acceptance criteria for each product shall be as per the specification for individual product.

7.14 Report shall be prepared based on the results.

7.15 If the validated Hold time storage period of any product crosses before filling or packaging then re-sampling of the product shall be done and retested. Based on the Retesting analytical results, QA Head shall decide for further action plan. Required quantity of filled or packed Sample to be kept for stability study from the same batch.

7.16 Hold time study Protocol Numbering System:

Numbering of Hold time study protocol and report shall be done as per SOP titled “Protocol Numbering and Issuance System”

8.0 REVISION HISTORY

Version No.	00	Effective Date	
Details of revision: New SOP Prepared			

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Attachment-I

	HOLD TIME STUDY OF PRODUCT (PROTOCOL CUM REPORT)		
Product Name			
Product Code		**Protocol No.**	
Batch Size		**Revision No.**	
Shelf Life		**Page No.**	x of y

HOLD TIME STUDY OF PRODUCT

PRODUCT NAME:

PRODUCT CODE:

Label Claim:

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1.0 Pre-approval Protocol:

This document has been developed and the individuals listed below have reviewed the document and agree with its content and with their signature grant approval for its execution.

Functional area	Name	Designation	Signature	Date
PREPARED BY				
Validation QA				
REVIEWED BY				
Production Head				
Quality Control Head				
Engineering Head				
Quality Assurance				
APPROVED BY				
QA Head				
Plant Head				

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2.0 OBJECTIVE:

Objective of hold time study is to establish the hold time study of the respective product with documented evidence.

3.0 SCOPE:

This protocol is applicable for hold time study of Tablets, Capsules, Binder solution and Coating solution manufactured in ……...

4.0 RESPONSIBILITY:

QUALITY ASSURANCE:

- Preparation, Execution & reviewing the protocol.
- Collection of the samples as specified in protocol.

QUALITY CONTROL:

- Reviewing of hold time study protocol.
- Analyzing the hold time study samples as per this protocol.

PRODUCTION:

- Reviewing of protocol.
- To intimate the collection of hold time study sample.

ENGINEERING:

- Reviewing of protocol.
- Maintaining the required environmental condition.

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5.0 VALIDATION TEAM TRAINING DETAILS:

Availability of training status and training record of all personnel involved in the validation/assessment exercise should be recorded.

DEPARTMENT	NAME	TRAINING STATUS	SIGNATURE
Quality Assurance			
Quality Control			
Production			
Engineering			

6.0 VERIFICATION OF INSTRUMENTS FOR CALIBRATION:

S.No.	Instrument Name	Instrument Code	Calibration done on	Calibration due on	Checked by Sign/Date

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7.0 REFERENCE OF STANDARD OPERATING PROCEDURE/ DOCUMENTS:

S. No.	SOP/ Document Name	SOP/ Doc. No.	Checked by/Date

8.0 Validated Analytical Methods of intermediates for estimation of active ingredient (Reference Analytical Validation protocol number to be recorded).

Reference QC Specification: _____

Test	Analytical Method Validation Protocol No. / QC specification number	Checked by

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9.0 HOLD TIME STUDY PROCEDURE:

9.1 Selection of batches:

First three process validation batches of a new product shall be placed for hold time study.

9.2 Environmental Conditions:

Environmental conditions such as Temperature and Relative Humidity shall be monitored and recorded as per SOP: “Recording of Temperature and Relative humidity”.

9.3 Dispensed Raw Material:

Dispensed raw material shall be stored under simulated conditions in double-layered poly bags closed tightly with nylon string.

9.4 Lubricated granules:

Granules shall be stored under simulated conditions in double-layered poly bags closed tightly with nylon string and kept in SS316/ HDPE container with lid.

9.5 Core and coated tablets:

For core and coated tablets hold time study sampled tablets shall be stored under simulated conditions in double-layered poly bags closed tightly and kept in SS316/ HDPE container with lid.

9.6 Filled capsules:

For Filled capsules hold time study sampled capsules shall be stored under simulated conditions in double-layered poly bags closed tightly and kept in SS316/ HDPE container with lid.

9.7 Dispensed Raw Material Details:

The raw material used in the manufacturing of the Hold Time Study batch shall be tested, analyzed and approved before use in the production as per their respective approved specifications. Details of the raw material shall be recorded in the report as shown below in the table.

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Batch No.: _____

S.No.	Item Code	Item Name	A.R No.	Name of Vendor	Qty. taken for Hold time Study

NOTE: Raw material shall be selected based on its nature and scientific rationale.

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Batch No.: _____

S.No.	Item Code	Item Name	A.R No.	Name of Vendor	Qty. taken for Hold time Study

NOTE: Raw material shall be selected based on its nature and scientific rationale.

Batch No.: _____

S.No.	Item Code	Item Name	A.R No.	Name of Vendor	Qty. taken for Hold time Study

NOTE: Raw material shall be selected based on its nature and scientific rationale.

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10.0 SAMPLING SIZE, PLAN AND FREQUENCY:

Hold time study samples of granules, tablets and Capsules shall be collected as composite as per below mentioned quantity:

10.1 Dispensed Raw Material/ Lubricated granules: Approx. _____ g for dispensed raw material and approx. _____ g for lubricated granules (or as per requirement for a specific product as per approved specifications).

10.2 Core tablets, Coated tablets and Filled capsules: Approximately _____ numbers (or as per requirement for a specific product as per approved specifications).

Sampling Plan for Dispensed Raw Material Hold Time Study

S.No.	Storage Time	Test Parameters	Quantity of Sample	Acceptance Criteria
1	Initial (0)	a) Appearance b) Water Content /LOD (wherever applicable) c) Assay (wherever applicable) d) MLT	As per requirement	As per specification
2	7th Day	a) Appearance b) Water Content /LOD (wherever applicable) c) Assay (wherever applicable) d) MLT	As per requirement	As per specification
3	14th Day	a) Appearance b) Water Content /LOD (wherever applicable) c) Assay (wherever applicable) d) MLT	As per requirement	As per specification

10.3 Lubricated granules:

Sampling Plan for Lubricated Granules Hold Time Study

S.No.	Storage Time	Test Parameters	Location	Quantity of Sample	Acceptance Criteria
1	*Initial (0)	a) Appearance b) LOD c) Water Content (wherever applicable) d) Bulk density e) Tapped Density f) Assay g) Related Substance h) particle size distribution i) MLT	Composite sample from Blender	As per product requirement	As per specification
2	5th day	a) Appearance b) LOD c) Water Content (wherever applicable) d) Bulk density e) Tapped Density f) Assay g) MLT	Composite sample from Blender	As per product requirement	As per specification
3	10th day	a) Appearance b) LOD c) Water Content (wherever applicable) d) Bulk density e) Tapped Density f) Assay g) MLT	Composite sample from Blender	As per product requirement	As per specification
4	21th day	a) Appearance b) LOD c) Water Content ((wherever applicable) d) Bulk density e) Tapped Density f) Assay g) Related Substance h) particle size distribution i) MLT	Composite sample from Blender	As per product requirement	As per specification

10.4 Binder Solution for granulation:

Sampling Plan for Binder Solution Hold Time Study				
S.No.	**Storage Time**	**Test Parameters**	**Quantity of Sample**	**Acceptance Criteria**
1	Initial (0)	d) Physical appearance e) Viscosity (wherever applicable) f) Bioburden	As per product requirement	As per specification
2	2 hrs	c) Physical appearance d) Viscosity (wherever applicable)	As per product requirement	As per specification
3	4 hrs	c) Physical appearance d) Viscosity (wherever applicable)	As per product requirement	As per specification
4	6 hrs	c) Physical appearance d) Viscosity (wherever applicable)	As per product requirement	As per specification
5	8 hrs	d) Physical appearance e) Viscosity (wherever applicable) f) Bioburden **(for Starch binder only)**	As per product requirement	As per specification
6	12 hrs	c) Physical appearance d) Viscosity (wherever applicable)	As per product requirement	As per specification
7	24 hrs	d) Physical appearance e) Viscosity (wherever applicable) f) Bioburden	As per product requirement	As per specification

10.5 Uncoated tablets:

Sampling Plan for Uncoated Tablets Hold Time Study

S.No.	Storage Time	Test Parameters	Location	Quantity of Sample	Acceptance Criteria
1	*Initial (0)	a) Description b) Hardness c) Thickness d) Friability e) Disintegration Time f) Water Content/ LOD g) Dissolution (wherever applicable) h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Content Uniformity (wherever applicable) l) Bioburden	Composite sample	As per product requirement	As per specification
2	10th day	a) Description b) Hardness c) Thickness d) Friability e) Disintegration Time f) Water Content/ LOD g) Dissolution (wherever applicable) h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Bioburden	Composite sample	As per product requirement	As per specification
3	20th day	a) Description b) Hardness c) Thickness d) Friability e) Disintegration Time f) Water Content/ LOD g) Dissolution h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Bioburden	Composite sample	As per product requirement	As per specification
4	40th day	a) Description b) Hardness c) Thickness	Composite sample	As per product requirement	As per specification

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Sampling Plan for Uncoated Tablets Hold Time Study

S.No.	Storage Time	Test Parameters	Location	Quantity of Sample	Acceptance Criteria
		d) Friability e) Disintegration Time f) Water Content/ LOD g) Dissolution (wherever applicable) h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Content Uniformity (wherever applicable) l) Bioburden			
5	60^{th} day	) Description b) Hardness c) Thickness d) Friability e) Disintegration Time f) Water Content/ LOD g) Dissolution (wherever applicable) h) Impurities/ Related Substances i) Assay j) Dispersion Time (wherever applicable) k) Content Uniformity (wherever applicable) l) Bioburden	Composite sample	As per product requirement	As per specification

10.6 Coated tablets:

Sampling Plan for Coated Tablets Hold Time Study

S.No.	Storage Time	Test Parameters	Location	Quantity of Sample	Acceptance Criteria
1	*Initial (0)	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) f) Impurities/ Related Substances (wherever applicable) g) Bioburden	Composite sample	As per product requirement	As per specification
2	10th day	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) f) Impurities/ Related Substances (wherever applicable) g) Bioburden	Composite sample	As per product requirement	As per specification
3	20th day	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) f) Impurities/ Related Substances (wherever applicable) g) Bioburden	Composite sample	As per product requirement	As per specification
4	40th day	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) f) Impurities/ Related Substances (wherever applicable) g) Bioburden	Composite sample	As per product requirement	As per specification
5	60th day	a) Description b) Disintegration Time (wherever applicable) c) Water Content/ LOD d) Dissolution (wherever applicable) e) Assay	Composite sample	As per product requirement	As per specification

Sampling Plan for Coated Tablets Hold Time Study					
S.No.	**Storage Time**	**Test Parameters**	**Location**	**Quantity of Sample**	**Acceptance Criteria**
		f) Impurities/ Related Substances (wherever applicable) g) Bioburden			

10.7 Coating Solution:

Sampling Plan for Coating Solution Hold Time Study				
S.No.	**Storage Time**	**Test Parameters**	**Quantity of Sample**	**Acceptance Criteria**
1	Initial (0)	e) Physical appearance f) pH g) Redispersibility h) Bioburden	As per product requirement	As per specification
2	6 hrs	e) Physical appearance f) pH g) Redispersibility h) Bioburden)	As per product requirement	As per specification
3	12 hrs	e) Physical appearance f) pH g) Redispersibility h) Bioburden	As per product requirement	As per specification
4	18 hrs	e) Physical appearance f) pH g) Redispersibility h) Bioburden	As per product requirement	As per specification
5	24 hrs	e) Physical appearance f) pH g) Redispersibility h) Bioburden	As per product requirement	As per specification
6	36 hrs	e) Physical appearance f) pH g) Redispersibility h) Bioburden	As per product requirement	As per specification
7	48 hrs	e) Physical appearance f) pH g) Redispersibility h) Bioburden	As per product requirement	As per specification

10.8 Filled Hard Gelatin Capsules:

Sampling Plan for Coated Tablets Hold Time Study

S.No.	Storage Time	Test Parameters	Location	Quantity of Sample	Acceptance Criteria
1	*Initial (0)	a) Description b) Net filled content per capsule c) Disintegration Time d) Water Content/ LOD e) Dissolution f) Assay g) Related Substances (wherever applicable) h) Bioburden	Composite sample	As per product requirement	As per specification
2	5th day	a) Description b) Net filled content per capsule c) Disintegration Time d) Water Content/ LOD e) Dissolution f) Assay g) Related Substances (wherever applicable) h) Bioburden	Composite sample	As per product requirement	As per specification
3	10th day	a) Description b) Net filled content per capsule c) Disintegration Time d) Water Content/ LOD e) Dissolution f) Assay g) Related Substances (wherever applicable) h) Bioburden	Composite sample	As per product requirement	As per specification
4	14th day	a) Description b) Net filled content per capsule c) Disintegration Time d) Water Content/ LOD e) Dissolution f) Assay g) Related Substances (wherever applicable) h) Bioburden	Composite sample	As per product requirement	As per specification

Note: 1. * Sample not to be sent to QC. All the required tests shall be carried out on the in-process and bulk finish sample.

2. All the physical tests in case of uncoated tablet/coated tablet/filled capsule such as thickness, hardness, disintegration time, friability as applicable shall be tested by IPQA person and the result shall be recorded in the respective report.

11.0 RESULTS/OBSERVATIONS:

A) Product Details under Hold Time Study:

S.No.	Product Name	Batch No.	Batch Size	MFG. Date	EXP. Date
1					
2					
3					

B) IPQA (Physical Test) Results:

Batch No.: _____

Test Parameters ⇒ / **Time (Day) Interval** ⇩					
0					
Limit ⇒					

DECODING PHARMA

QUALITY ASSURANCE DEPARTMENT

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Hold Time Study of Products	**Effective Date:**
Supersedes: Nil	**Review Date:**
Issue Date:	**Page No.:**

Batch No.: _____

Test Parameters ⇒ / **Time (Day) Interval** ⇩					
0					
Limit ⇒					

Batch No.: _____

Test Parameters ⇒ / **Time (Day) Interval** ⇩					
0					
Limit ⇒					

C) QC RESULT (Chemical and Microbiological):

Batch No.: _____

Test Parameters ⇒ / **Time (Day) Interval** ⇩					
0					
Limit ⇒					

Batch No.: _____

Test Parameters ⇒ / **Time (Day) Interval** ⇩					
0					
Limit ⇒					

DECODING PHARMA

QUALITY ASSURANCE DEPARTMENT

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
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Supersedes: Nil	**Review Date:**
Issue Date:	**Page No.:**

Batch No.: _____

Test Parameters ⇨ / **Time (Day) Interval** ⇩					
0					
Limit ⇨					

12.0 Acceptance criteria:

Acceptance criteria for each product shall be as per the respective Quality Control specification for individual product.

13.0 Details of Deviation/Non Compliance/OOS:

Details of Out of Specifications (OOS)/Deviations/Non conformances if any should be recorded below.

14.0 Frequency/Reason of study:

Frequency/Reason	Tick mark the applicable option	No. of Batches to be kept under study	Justification for No. of batches selected if less than 3 batches.
New product (New/ Transferred)			
Change in formulation			
Change in batch size (10 folds or more than 10 folds)			
Change in process / process parameter			
Change in API Manufacturer			
Change in route of synthesis/ manufacturing process of API			
Periodic verification (every 3 years 1 batch verification)			
Change in Storage condition			
Others (if any):			

15.0 Risk management study (if any):

Details of the reference document of risk management should be mentioned below.

16.0 Summary of the study activity:

Record the summary of the study with special emphasis on physical parameters, chemical parameters and Microbiological parameters evaluation of the data obtained.

17.0 Recommendation:

Record the recommendations or suggestions based on the interpretation of the results and reference documents below.

18.0 Attachments:

Mention the list of attached documents to the study protocol/report below.

19.0 Abbreviations:

Mention the list of abbreviations used in the study protocol/report below.

20.0 Reference Documents:

Description	Document References No.	Verified By	Date
Batch Manufacturing Record			
SOP of Handling of Hold Time Samples			
SOP of Incident/ Deviation Reporting and Investigation			
SOP of Risk Management Study			
SOP of OOS			
QC Specification			

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21.0 Review and Post approval:

Functional area	Name	Designation	Signature	Date
PERFORMED BY				
Validation QA				
Quality Control				
Production				
Engineering				
APPROVED BY				
QA Head				
Plant Head				

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Attachment-II

HOLD TIME SAMPLING REGISTER

S. No.	Date	Product Name	Batch No.	Mfg. Date	Exp. Date	Stage	Quantity sampled	Sampled By QA (Sign/ Date)	Received By QC (Sign/ Date)	Remarks

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Attachment-III

HOLD TIME DURATION OF PRODUCTS

Product Name	Product Code	Strength	Hold Time Duration							
			Shelf Life	Dispensed Material (In Days)	Binder Solution (In Hrs.)	Lubricated Granules (In Days)	Uncoated Tablets (In Days)	Coated Tablets (In Days)	Coating Solution (In Hrs.)	Filled Hard Gelatin Capsule (In Days)