PHARMA DEVILS

QUALITY ASSURANCE DEPARTMENT

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Stability Study Policy	**Effective Date:**
Supersedes: Nil	**Review Date:**
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1.0 OBJECTIVE:

To lay down a Procedure for Stability Study Policy.

2.0 SCOPE:

This SOP is applicable to all the manufacturing sites.

3.0 RESPONSIBILITY:

CQA (Officer/ Executive)	**:**	Preparation, Distribution (To Plant-QA), Revision, Retrieval and Destruction of this SOP.
CQA (Operating Manager)	**:**	Review, Training (To Plant-QA) and Effective implementation of this SOP.
Plant QA (Officer/ Executive)	**:**	Preparation of Plant SOP in accordance with this SOP and Retrieval of this SOP.
Plant QA (Officer/Executive)	**:**	Distribution of this SOP (to concern Departments). Preparation of Stability Study Data Summary Report. Preparation of Stability Samples Discontinuation and Destruction Record.
Plant QA (Operating Manager)	**:**	Training and Effective Implementation of this SOP to all concerned Department of Plant. Review of Stability Study Data Summary Report. Review of Stability Samples Discontinuation and Destruction Record.
Plant QC (Operating Manager)	**:**	Preparation of Field Alert Report.
Head QC	**:**	Training and Effective Implementation of this SOP. Review of Stability Study Data Summary Report. Review of Stability Samples Discontinuation and Destruction Record.
Head Production	**:**	Review of Stability Samples Discontinuation and Destruction Record
DRA (Operating Manager)	**:**	Review the Field Alert Report for US Market.

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4.0 ACCOUNTABILITY:

Head CQA : Approval, Authorization, ensure Training and effective Implementation of this SOP .

Head QA : Training and Effective Implementation of this SOP.
Approval of Stability Study Data Summary Report
Approval of Field Alert Report.
Approval of Stability Samples Discontinuation and Destruction Record.

Head DRA : Review and Submission of Field Alert Report for US Market.

5.0 ABBREVIATION:

ACC	Accelerated Controlled Condition
ANDA	Abbreviated New Drug Application
API	Active Pharmaceutical Ingredients
BET	Bacteriological Endotoxin Test
Dept.	Department
DRA	Drug Regulatory Affairs
FAR	Field Alert Report
IPQA	In Process Quality Assurance
MAH	Marketing Authorization Holder
NDA	New Drug Application
NMT	Not More Than
NLT	Not Less Than
QP	Qualified Person
R&D	Research & Development
LDPE	Low Density Poly Ethylene
MLT	Microbial Limit Test
LT	Long Term
mg	Milli gram
ml	Milli liters
nm	Nanometer
No.	Number
OOS	Out of Specification
QA	Quality Assurance
QC	Quality Control
RA	Regulatory Affairs
RH	Relative Humidity
RLD	Reference Listed Drug
^{0}C	Degree Centigrade
%	Percentage

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6.0 PROCEDURE:

6.1 DEFINITIONS:

6.1.1 **Accelerated Testing:** Studies designed to increase the rate of chemical degradation or physical change of a Drug Substance or drug product by using exaggerated storage conditions as part of the Formal Stability Studies.

6.1.2 **Acceptance Criteria:** Numerical Limits, Ranges or other suitable measures for acceptance of test results.

6.1.3 **Bracketing:** The design of a stability schedule such that only samples on the extremes of certain design factors (e.g., strength, package size) are tested at all time points as in a full design. The design assumes that the stability of any intermediate levels is represented by the stability of the extremes tested.

6.1.4 **Climatic Zones:** The four zones in the world that are distinguished by their characteristic, prevalent annual climatic conditions.

6.1.5 **Intermediate Testing:** Studies conducted at 30°C/65% RH and designed to moderately increase the rate of chemical degradation or physical changes for a drug substance or drug product intended to be stored long-term at 25°C.

6.1.6 **Matrixing:** The design of a stability schedule such that a selected subset of the total number of possible samples for all factor combinations is tested at a specified time point. At a subsequent time point, another subset of samples for all factor combinations is tested.

6.1.7 **Out of Trend:** An analytical alert is observed when a single result is aberrant but within specification Limits (i.e. outside normal analytical or sampling variation and normal change over time).

6.1.8 **Semipermeable:** Containers that allow the passage of solvent, usually water, while preventing solute loss. The mechanism for solvent transport occurs by absorption into one container surface, diffusion through the bulk of the container material, and desorption from the other surface. Transport is driven by a partial-pressure gradient.

6.1.9 **Shelf-Life or Expiry Date:** Shelf-Life or Expiry of a Drug Product is defined as the time interval that a drug product is expected to remain within an approved shelf-life specification, provided that it is stored according to Label Storage Conditions and that it is in the original Container Closure System.

6.1.10 Specification: A Specification is defined as a list of Tests, References to Analytical Procedures, and appropriate Acceptance Criteria which are Numerical Limits, Ranges, or other criteria for the tests described.

6.1.11 Stability: Long-term and accelerated (and intermediate) studies undertaken on primary and/or commitment batches according to a prescribed stability protocol to establish or confirm the re-test period or the shelf-life of a FPP.

6.2 STABILITY STUDIES SHALL BE PERFORMED IN THE FOLLOWING CASES:

6.2.1 Selection of Batches: Unless specified, otherwise in stability protocol the following types of batches are required to be taken for stability studies.

6.2.1.1 Exhibit Batches: This is an ANDA batch and also the Bio-study batch made based on the formulation recommended by R & D. The data of this batch to be submitted to Regulatory markets and the stability study to be carried out as per stability protocol. For New Product launch the Accelerated and Real Time (Wherever Applicable) Stability Study shall be performed. The Batches produced as Exhibit, for Registration purpose shall be kept on Stability Study.

6.2.1.2 Validation Batches: These are the first three commercial validation batches and validation batches of product due to change in API source, change in formulation, change in batch size, change in machine, change in closure system or change in primary packing material. Accelerated and Real Time Stability Study shall be carried out for three successful Validation Batches of a Product during Stability Study Program & Photo-Stability Study shall be carried out only for one batch or as per Customer / Regulatory requirement.

6.2.1.3 Commercial Batches: These are the regular commercial batches and sample shall be collected for stability studies preferably first production batch per year for each marketed product. In case of bottle pack bracketing shall be followed (Lowest count and highest count) for loading depending on production plan.

6.2.1.4 Ongoing Stability Study: The study carried out by the manufacturer on production batches according to a predetermined schedule in order to monitor, confirm and extend the projected re-test period (or shelf-life) of the API, or confirm or extend the shelf-life of the FPP.

6.2.1.1 Development Phase: This is the Phase in which the Manufacturer selects an Optimum Formulation, Manufacturing Process and Packing for the Product. Accelerated Stability Study shall be carried out to determine the tentative shelf life and storage condition of the product. Real Time Studies shall be started at the same time to substantiate the claimed Shelf Life.

6.2.1.2 The placebo samples shall also be charged on stability studies whenever applicable.

6.2.1.3 First Three Batches (i.e. the Product Manufactured First Time or New Products) shall be subjected to Stability Study at Long Term, Accelerated and Intermediate condition or as per the requirement of customer.

6.2.1.4 If Product is manufactured under different Brand Names but the Formulation, Strength and Manufacturing Process and Primary Packing remain same, then the samples of any one Generic or Brand Name shall be collected for Stability Study. An annexure shall be prepared to demonstrate the applicability of stability studies.

6.2.1.5 Addition of New Strength of the Product.

6.2.1.6 Change in critical manufacturing equipments.

6.2.1.7 Change in source of API.

6.2.1.8 Change in Batch Size.

6.2.1.9 Change in the existing product's Formulation / Process which is significant to Product Quality, Purity and Stability.

6.2.1.10 Change in Primary Packaging Material.

6.2.1.11 Change in Manufacturing Site.

6.2.1.12 After Technology Transfer from Customer / Manufacturing Site / R&D.

6.2.1.13 In case of Rework/ Reprocess of Finished Product.

6.2.1.14 In case if Finished Product is repacked in different type of container.

6.2.1.15 In case any major changes / deviation / incident occurred during batch manufacturing having the quality impact on product shall be charged to stability (Long term / ACC) based on decision.

6.2.1.16 The stability studies on various type of batches shall be performed as per following **Table No.-01.**

Note: Based on the nature of the molecule (e.g. thermolabile) / R&D recommendations, stability storage conditions shall be decided.

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Table No. 01 (Specimen)

S.No.	Type of Batches	No. of batches on Stability Studies	Storage Condition
1	*Exhibit	Each type of container proposed for marketing	40 ± 2ºC /75 ± 5% RH 25 ± 2ºC /60 ± 5% RH 30 ± 2ºC /65 ± 5% RH 30 ± 2ºC /75 ± 5% RH# 1.2 million lux hours at λ: 350 – 370 nm, 200 watt hrs / square meter and Temperature 25 ± 2° C.
2	*First three validation	Three batches	40 ± 2ºC /75 ± 5% RH 25 ± 2ºC /60 ± 5% RH 30 ± 2ºC /65 ± 5% RH 30 ± 2ºC /75 ± 5% RH# 1.2 million lux hours at λ: 350 – 370 nm, 200 watt hrs / square meter and Temperature 25 ± 2° C if required
3	*Annual addition	One batch per year	25 ± 2ºC /60 ± 5% RH 30 ± 2ºC /65 ± 5% RH 30 ± 2ºC /75 ± 5% RH#
4	*Batch size change	One batch	25 ± 2ºC /60 ± 5% RH 30 ± 2ºC /65 ± 5% RH 30 ± 2ºC /75 ± 5% RH#
5	*Change in API Source	One batch	40 ± 2ºC /75 ± 5% RH 25 ± 2ºC /60 ± 5% RH 30 ± 2ºC /65 ± 5% RH 30 ± 2ºC /75 ± 5% RH#
6	*Change in machine	One batch	25 ± 2ºC /60 ± 5% RH 30 ± 2ºC /65 ± 5% RH 30 ± 2ºC /75 ± 5% RH#
7	*Change in primary packing	One batch	25 ± 2ºC /60 ± 5% RH 30 ± 2ºC /65 ± 5% RH 30 ± 2ºC /75 ± 5% RH#
8	*Reprocess batch	Respective batch	Decision shall be taken based on criticality#
9	*Rework batch	Respective batch	Decision shall be taken based on criticality#

Note: **i.** ***The storage conditions for different type of batches mentioned above are as per the guidelines.***

The stability protocol for respective product shall be applicable for stability studies.

ii. #As per regulatory guidance or customer requirements.

iii. For annual addition, batch size change, change in API source, change in machine and change in primary packing or other reason, sample to be charged as per required storage condition which shall be mentioned in protocol.

iv. *Stability condition shall depend based upon product storage condition.

6.3 INTENDED MARKET:

The Climatic Conditions of the Place where the Products are to be marketed shall be considered while designing Stability Studies. For this, the world has been divided in four different zones as per the general prevalent Climatic Conditions.

Climatic Zone	Climatic Condition	Test Condition
Zone-I	Temparate Climate	21 °C / 45 % RH
Zone-II	Subtropical and Mediterranean Climate	25 °C / 60 % RH
Zone-III	Hot and Dry Climate	30 °C / 35 % RH
Zone-IVA	Hot and Humid Climate	30 °C / 65 % RH
Zone-IV B	Hot and Very Humid Climate	30 °C / 75 % RH

6.4 STORAGE / TEST CONDITIONS:

6.4.1 Real Time / Long Term Stability Study:

If recommended Storage Condition for formulated Product is **"In cool Place"**, Long Term Stability Studies shall carried out (at Temperature 25° C ± 2°C and % RH 60% ± 5%, 30° C ± 2°C and % RH 65% ± 5% , 30° C ± 2°C and % RH 75% ± 5% or depending upon the requirement of Concerned Climatic Zone or 5° C ± 3°C in case of cold chain products).

6.4.2 Intermediate Stability Study:

If recommended Storage Condition for Formulated Product is " In Cool Place", Intermediate Stability Studies shall be carried out (at Temperature 30°C ± 2°C and % RH 65% ± 5% or depending upon the requirement of Concerned Climatic Zone).

6.4.3 Accelerated Stability Study:

If Recommended Storage Condition for Formulated Product is "In cool Place", Accelerated Stability Studies shall carried out (at Temperature 40^0C ± 2°C and % RH 75% ± 5%, or depending upon the Climatic Zone or 25^0C ± 2°C and % RH 60%± 5% in case of cold chain products).

6.5 STABILITY INTERVAL:

The stability condition and Matrix "X" i.e. testing shall be performed as per below following **Table No. 02.**

Table No. 02

Storage Condition	Time in Months									
	0*	1	2	3	6	9	12	18	24	36**
25 ± 2° C/ 60 ± 5% RH	X			X	X	X	X	X	X	X
30 ± 2° C/ 65 ± 5% RH	X			X	X	X	X			
40 ± 2° C/ 75 ± 5% RH	X	X^+	X^+	X	X					
30 ± 2° C/ 75 ± 5% RH#	X			X	X	X	X	X	X	X

Note: **The initial results shall be considered as 0 month stability study for all three conditions.*
*** The stability study of exhibit batches can be extended to 36 months or as per Regulatory/Customer requirements through amendment in Stability Protocol.*
 # As per Regulatory or Customer Requirements.
+Condition varies as per product to product.

6.5.1 The testing frequency to be followed for Long term stability, Accelerated and Intermediate study has been described below:

6.5.1.1 **Real Time/ Long Term Stability:** It is a Real Time Testing carried out for a sufficient time to cover Shelf life testing under the defined long-term conditions shall be every 03 months over the first year, every 06 months over the second year, and then annually or as per respective Stability Study Protocol.

6.5.1.2 The test for Sterility /MLT and BET shall be carried out initially, annually and at the end of shelf life or as per respective Stability Study Protocol.

6.5.1.3 An appropriate container and closure system integrity test shall be conducted annually and at expiration, or as otherwise required by applicable regulations.

6.5.2 **Intermediate Stability**:

6.5.2.1 Intermediate Stability shall be carried out minimum for 6 months & maximum for 12 months the testing frequency shall be Initial, 03, 06, 09 and 12 months. The test for Sterility / MLT and BET shall be carried out initially and at the end of the Stability Studies.

6.5.3 **Accelerated stability:**

6.5.3.1 Accelerated stability study shall be carried for 06 months the testing frequency shall be followed as per matrix given in Table No.- 02.

6.5.3.2 The test for Sterility /MLT and BET shall be carried out initially and at the end of shelf life.

6.5.3.3 In case at any testing point, the results are OOS or there is a significant change in Assay (more than 5% from initial value), further testing under Accelerated studies shall be terminated. Under such situation intermediate studies shall be carried out upto 12 months.

6.6 SAMPLING CONSIDERATIONS:

6.6.1 For new Product Test Samples shall be taken in its Marketable Packs from Consecutive Production / Pilot Plant Batches (as per concerned Regulatory requirement). For ongoing Stability Study, Test Samples from one Batch every year (First Batch of the year) shall be taken.

6.6.2 The protocol for the ongoing stability program can be different from that of the initial long-term stability study as submitted in the marketing authorization dossier provided that this is justified and documented in the protocol (for example, the frequency of testing, or when updating to meet revised recommendations).

6.6.3 Sampling shall be carried out by respective location IPQA Personnel.

6.6.4 The Selection of Sample Unit from the Batches selected for Stability Study shall be carried out so as to ensure that the Samples chosen represent the Whole Batch.

6.6.5 Sample quantity shall be calculated based on the test specification for minimum two analysis of each test to be performed throughout the stability studies or as per the stability study protocol design.

Note: In a special case stability sample quantity shall be calculated as per country specific requirements.

6.7 CONTAINER ORIENTATIONS:

6.7.1 In case of Injectable Products in Vials and Liquid Oral Dosage Product in Bottles, the same shall be kept in inverted and upright position throughout the Stability Study period and orientation shall be mentioned in Stability Study Protocol. (Need to be performed in both i.e. inverted and upright position with alternate time point to evaluate the both position impact).

6.8 TEST CRITERIA AND TEST PROCEDURES:

6.8.1 The testing shall cover those features susceptible to change during storage and likely to influence Quality, Safety, and/or Efficacy.

6.8.2 Stability information shall cover as necessary the Physical, Chemical, Preservative Efficacy Test, Microbial Limit Test & other Microbiological Test (Whichever Applicable).

Note: In case the specification/ testing procedure during stability studies is revised based on the Pharmacopoeial / In house revision / change of method, a single batch whenever produced shall be charged on stability based on revised specification/method. If these changes are prior to Process validation batches then all three process validation batches shall be charged with revised specifications/method on stability studies.

6.9 SPECIFICATIONS:

6.9.1 Limits of Acceptance shall be related to the Release Limit (Where Applicable), to be derived from consideration of all the available Stability Information. The Shelf Life Specification could allow acceptable justifiable deviations from the release Specifications based on the Stability Evaluation and the changes observed during Storage.

6.9.2 In general the product on stability shall meet the claimed specifications for the tests applicable for stability which shall be defined in individual Protocol.

6.9.3 The product batch shall meet the release specifications during batch release or initial time zero; however the same Product Batch shall meet the shelf life Specifications during its complete Shelf Life.

6.9.4 Any differences between the release and shelf life acceptance criteria for antimicrobial preservative content shall be supported by a validated correlation of chemical content and preservative effectiveness demonstrated during drug development on the product in its final formulation (except for preservative concentration) intended for marketing.

6.9.5 A single primary stability batch of the drug product shall be tested for antimicrobial preservative effectiveness (in addition to preservative content) at the end of proposed shelf life for verification purposes, regardless of whether there is a difference between the release and shelf life acceptance criteria for preservative content.

6.10 SIGNIFICANT CHANGE:

6.10.1 A ≥ 5% potency loss from the Initial Assay Value of a Product Batch or failure to meet the acceptance criteria for potency when using biological or immunological procedure.
(**Note:** Other value may be applied if proper rationale is available as in case of Multivitamins and herbal preparations.)

6.10.2 Any Specified degradation Products exceeding its Specification Limit.

6.10.3 Failure to meet the acceptance criteria for Appearance, Physical Attributes, and Functionality Test (e.g. Color, Phase Separation, Re-suspendability, Caking, Hardness, Dose delivery per actuation); however, some changes in Physical Attributes (e.g., Softening of Suppositories, melting of creams) may be expected under accelerated conditions.

6.10.4 Failure to meet Specifications for pH / Microbial Limit Test etc.

6.10.5 Failure to meet the acceptance criteria for dissolution for 12 dosage units.

6.10.6 A 5% loss in water from its initial value is considered a significant change for a product packaged in a semi-permeable container after an equivalent of three months' storage at 40°C not more than (NMT) 25% RH.

6.10.7 However, for small containers (1 ml or less) or unit-dose products, a water loss of 5% or more after an equivalent of three months' storage at 40°C/NMT 25% RH may be appropriate, if justified.

6.11 TESTING FREQUENCY:

6.11.1 Frequency of Testing shall be sufficient to establish the Stability Characteristics of the product.

6.11.2 Upon release of batch, stability sample shall be charged within 10 working days according to the country / specific region. In case, for any reasons if the sample could not be charged within 30 calendar days, retesting shall be performed. Results obtained from the retesting shall be considered as zero day / initial data.

6.11.3 A deviation shall be filled for delay in charging of samples into the stability chambers along with the justification if the samples were charged after 10 working days of release of batch. Retesing shall not be performed and analytical data used for release of batch shall be considered as zero day / initial data.

6.11.4 To initiate retesting, a deviation shall be filled along with the reason for delay.

6.11.5 The initial Test Result for batch release shall be considered as Initial Analysis.

6.11.6 The withdrawal of sample shall be carried out within + 7 working days from the planned pull date at Accelerated condition.

6.11.7 The withdrawal of sample shall be carried out within + 10 working days from the planned pull date for both the study i.e. Intermediate and Long Term Storage Conditions. However stability testing shall be completed within 28 calendar days after withdrawing samples from the stability chamber.

6.11.8 In case testing is not completed within defined period than a deviation shall be initiated as per CQA SOP "**Handling of Deviations**" along with justification for delay and CAPA for the same shall be initiated.

6.11.9 After withdrawal, in case testing of stability samples is not initiated, samples shall be stored between 2 to 8°C wherever applicable (Except for sensitive products like moisture sensitive, hygroscopic, heat sensitive etc.)

6.11.10 The withdrawal samples shall not be stored between 2 to 8°C for which storage condition recommended as "**Do not Freeze**".

6.12 STABILITY STUDY FAILURE:

6.12.1 In case, if any stability failure is observed during stability studies of the product(s) report shall be issued to R&D (if applicable) and Regulatory Affairs Department for necessary action through Field Alert Report as per format shown in **Annexure-I "Field Alert Report for Stability Study Failure"**.

6.12.2 For products that are the subject of approved full or abbreviated new drug applications, regulations require submitting a Field Alert Report within 3 working days if the initial OOS results cannot be invalidated.

6.12.3 When an aberrant OOS result is obtained during testing of a distributed batch (stability testing), the Head of QC immediately report the failure to the Head of Quality Assurance and Regulatory Affairs.

6.12.4 An initial FAR is to be submitted by RA, unless the OOS result on the distributed batch is found to be invalid, within 3 working days.

6.12.5 OOS results shall be investigated as per **CQA SOP "Handling of Out of Specification Results"**.

6.12.6 Follow-up FAR shall be submitted by RA when the Investigation is concluded by both Quality Control and Quality Assurance.

6.12.7 RA shall intimate to respective customer/QP/MAH/Regulatory agencies about the initial FAR and follow-up FAR (if applicable).

6.12.8 Corrective and Preventive actions shall be taken to prevent the re-occurrence of the similar test results as per **CQA SOP "Corrective Action and Preventive Action (CAPA)"**.

6.13 DRUG PRODUCTS PACKAGED IN SEMI-PERMEABLE CONTAINERS:

6.13.1 Aqueous-based products packaged in semi-permeable containers shall be evaluated for potential water loss in addition to physical, chemical, biological, and microbiological stability.

6.13.2 This evaluation shall be carried out under conditions of low relative humidity. It shall be evaluated for aqueous-based drug products stored in semi-permeable containers can withstand low relative humidity environments.

6.13.3 Other comparable approaches shall be developed and reported for non-aqueous, solvent-based products as per below conditions:

Study	Storage condition	Minimum time period covered by data at submission
Long term*	25°C ± 2°C/40% RH ± 5% RH or 30°C ± 2°C/35% RH ± 5% RH	12 months
Intermediate**	30°C ± 2°C/65% RH ± 5% RH	6 months
Accelerated	40°C ± 2°C/ Not More Than (NMT) 25% RH	6 months

* It is up to the applicant to decide whether long term stability studies shall be performed at 25±2°C/40% RH ±5% RH or 30°C ±2°C/35% RH ±5% RH.

** If 30°C ±2°C/35% RH ±5% RH is the long-term condition, there is no intermediate condition.

6.13.4 For long-term studies conducted at 25°C ± 2°C/40% RH ± 5% RH, additional testing at the intermediate storage condition shall be performed as described under the general case to evaluate the temperature effect at 30°C if significant change other than water loss occurs during the 6 months' testing at the accelerated storage condition.

6.13.5 A significant change in water loss alone at the accelerated storage condition does not necessitate testing at the intermediate storage condition. However, data shall be provided to demonstrate that the drug product shall not have significant water loss throughout the proposed shelf life if stored at 25°C and the reference relative humidity of 40% RH.

6.13.6 5% loss in water from its initial value is considered a significant change for a product packaged in a semi-permeable container after an equivalent of 3 months' storage at 40°C / NMT 25% RH. However, for small containers (1 mL or less) or unit-dose products, a water loss of 5% or more after an equivalent of 3 months' storage at 40°C/NMT 25% RH shall be appropriate based on justification.

6.13.7 An alternative approach to studying at the reference relative humidity as recommended in the table above (for either long term or accelerated testing) is performing the stability

studies under higher relative humidity and deriving the water loss at the reference relative humidity through calculation.

6.13.8 This shall be achieved by experimentally determining the permeation coefficient for the container closure system or, as shown in the example below, using the calculated ratio of water loss rates between the two humidity conditions at the same temperature.

6.13.9 The permeation coefficient for a container closure system shall be experimentally determined by using the worst case scenario (e.g., the most diluted of a series of concentrations) for the proposed drug product.

6.13.10 **Example of an approach for determining water loss**: For a product in a given container closure system, container size, and fill, an appropriate approach for deriving the water loss rate at the reference relative humidity is to multiply the water loss rate measured at an alternative relative humidity at the same temperature by a water loss rate ratio shown in the as per **Table No.-03**.

6.13.11 A linear water loss rate at the alternative relative humidity over the storage period shall be demonstrated.

6.13.12 For example, at a given temperature, e.g., 40°C, the calculated water loss rate during storage at NMT 25% RH is the water loss rate measured at 75% RH multiplied by 3.0, the corresponding water loss rate ratio.

Table No. – 03

Low-humidity testing conditions	Alternative testing condition	Ratio of water loss rates	Calculation
25°C/40% RH	25°C/60% RH	1.5	(100-40)/(100-60)
30°C/35% RH	30°C/65% RH	1.9	(100-35)/(100-65)
30°C/35% RH	30°C/75% RH	2.6	(100-35)/(100-75)
40°C/NMT 25% RH	40°C/75% RH	3.0	(100-25)/(100-75)

6.13.13 Valid water loss rate ratios at relative humidity conditions other than those shown in the **Table** No. 03 shall also be used.

6.13.14 Drug Products intended for storage in a refrigerator:

Study	Storage condition	Minimum time period covered by data at submission
Long term	5°C ± 3°C	12 months
Accelerated	25°C ± 2°C/60% RH ± 5% RH	6 months

6.13.14.1 If the drug product is packaged in a semi-permeable container, appropriate information shall be provided to assess the extent of water loss. Data from refrigerated storage shall be assessed according to the evaluation section of this guideline, except where explicitly noted below.

6.13.14.2 If significant change occurs within the first 3 months testing at the accelerated storage condition, a discussion shall be provided to address the effect of short term excursions outside the label storage condition, e.g., during shipment and handling.

6.13.14.3 If significant change occurs between 3 and 6 months testing at the accelerated storage condition, the proposed shelf life shall be based on the Real Time data available from the long term storage condition.

6.13.14.4 This shall be supported, if appropriate, by further testing on a single batch of the drug product for a period shorter than 3 months but with more frequent testing than usual.

6.13.14.5 It shall be considered unnecessary to continue to test a product through 6 months when a significant change has occurred within the first 3 months.

6.13.15 Drug Products intended for storage in a freezer:

Study	Storage condition	Minimum time period covered by data at submission
Long term	- 20°C ± 5°C	12 Months

6.13.15.1 For drug products intended for storage in a freezer, the shelf life shall be based on the real time data obtained at the long term storage condition.

6.13.15.2 In the absence of an accelerated storage condition for drug products intended to be stored in a freezer, testing on a single batch at an elevated temperature (e.g., 5°C ± 3°C or 25°C ± 2°C) for an appropriate time period shall be conducted to address the effect of short term excursions outside the proposed label storage condition.

6.13.16 Drug Products intended for storage below -20°C:

6.13.16.1 Drug products intended for storage below -20°C shall be treated on a case-by-case basis.

6.14 STABILITY COMMITMENT:

For General Products:

Study	Storage Condition	Minimum Time Period covered by Data at submission
Long Term /Real Time*	25°C ± 2°C/60% RH ± 5% RH or 30°C ± 2°C/65% RH ± 5% RH or 30°C ± 2°C/75% RH ± 5% RH	12 months
Intermediate**	30°C ± 2°C/65% RH ± 5% RH	6 months
Accelerated	40°C ± 2°C/75% RH ± 5% RH	6 months

*If the Real Time / Long Term Stability Study is carried out at 25°C ± 2°C/60% RH ± 5%, the Intermediate Stability Study shall be performed at 30°C ± 2°C/65% RH ± 5%.
**If the Real Time / Long Term Stability Study is carried out at 30°C ± 2°C/65% RH ± 5%, then study at 30°C ± 2°C/75% RH ± 5% RH the intermediate stability study shall be not be performed.

6.14.1 In case available Long Term stability data on primary batches do not cover the proposed shelf life assigned at the time of approval, a commitment shall be made to continue the stability studies post approval in order to firmly establish the shelf life.

6.14.2 Wherever the submission includes long term stability data from three production batches covering the proposed shelf life, a post approval commitment shall be considered through one of the following commitments:

6.14.2.1 In case submission includes data from stability studies on at least three production batches, a commitment shall be made to continue the long term studies through the proposed shelf life and the accelerated studies for 6 months.

6.14.2.2 If the submission includes data from stability studies on fewer than three production batches, a commitment shall be made to continue the long term studies through the proposed shelf life and the accelerated studies for 6 months, and to place additional production batches, to a total of at least three, on long term stability studies through the proposed shelf life and on accelerated studies for 6 months.

6.14.2.3 If the submission does not include stability data on production batches, a commitment shall be made to place the first three production batches on long term stability studies through the proposed shelf life and on accelerated studies for 6 months.

6.14.2.4 The stability protocol used for studies on commitment batches shall be the same as that for the primary batches, unless otherwise scientifically justified.

6.14.2.5 Where intermediate testing is called for by a significant change at the accelerated storage condition for the primary batches, testing on the commitment batches shall be conducted at either the intermediate or the accelerated storage condition.

6.14.2.6 However, if significant change occurs at the accelerated storage condition on the commitment batches, testing at the intermediate storage condition shall also be conducted.

6.15 TEST PARAMETERS:

The test parameters shall be decided as per the product apart from drug assay and the analysis of which include Physical, Chemical and Microbiological characteristics of the Drug product.
Table No. - 04 shall be considered for the inclusion of test parameters:

Table No. 04

Dosage Form	Test Parameters*
Tablets	Appearance, Odour, Colour, Assay, Disintegration Time, Dissolution, Moisture Content, Hardness / Friability, Microbial Limit Test.
Capsules	**Hard Gelatin:** Appearance (including brittleness), Colour, and Odour of content, Assay, Dissolution, Related substances, moisture, Microbial Limit Test.
	Soft Gelatin: Appearance, Colour, and Odour of content, Assay, Dissolution, Related substances, Microbial Limit Test, pH, Leakage, and Pellicle Formation, the fill medium examined for Precipitation and Cloudiness.
Dry Syrup	Physical Appearance of Powder and Reconstituted suspension, Related Substance, pH of Reconstituted Suspension, Moisture Content, Microbial Limit Test, Assay of Active Ingredient in freshly prepared Suspension, Impurity Test and the stability of prepared suspension after 4 or 7 days (as applicable).
Injectable Products	**Small Volume:** Appearance, Colour, Clarity, pH, Assay/ Potency/ Strength, Preservative efficacy / content (if present), Related Substances, Particulate Matter, Sterility, Pyrogen / Endotoxin and Water Loss (When packaged in semi permeable container). **Large Volume:** Appearance, Colour, Clarity, pH, Assay/ Potency/ Strength, Preservative efficacy / content (if present), Related substances, Particulate Matter, Sterility, Pyrogen / Endotoxin, Clarity & Volume and Water Loss.
Emulsions	Appearance (including phase separation), Colour, Odour, Assay, Related substances, pH, Viscosity, Microbial Limits, Preservatives Contents, Mean Size & Distribution of Dispersed Globules.

Dosage Form	Test Parameters*
Oral Solution & Suspensions	Appearance (including Phase Separation), Colour, Odour, Assay, Related substances, pH, Viscosity, Microbial Limits, Preservatives Contents.
Topical & Ophthalmic Preparation (Included in this broad category are ointments, Creams, Lotions, Paste, Gel, Solutions for application to the Skin)	Appearance, Clarity, Colour, Homogeneity, Odour, pH, Re-suspendability (for lotions), Consistency, Viscosity, Particle Size Distribution (If applicable), Assay, Related substances, Preservative & Antioxidant Content (if present), Microbial Limits, Sterility and Water Loss (When packaged in semi permeable container).

*** Not Limited to or may vary depending upon Formulation / Customer / Regulatory Requirement.**

6.16 BRACKETING:

6.16.1 Bracketing shall be applied to different container sizes or different fills in the same container closure system. Where a range of strengths is to be tested, bracketing is applicable if the strengths are identical or very closely related in composition.

6.16.1.1 Bracketing shall be considered only for the different packs size where container closure is same within one product strength. Bracketing shall be applied with strengths of identical or closely related formulations.

6.16.1.2 Bracketing shall be applied with justification where the relative amounts of drug substance and Excipient change in a formulation.

6.16.1.3 Bracketing shall not be done for different strengths of new product stability.

6.16.1.4 It shall be done only for ongoing Stability Studies and shall be mentioned in the product specific protocols.

6.16.1.5 Design Example:
This example is based on a product available in three strengths and three container sizes. In this example, it shall be demonstrated that the 15 ml and 500 ml high-density polyethylene container sizes truly represent the extremes. The batches for each selected combination shall be tested at each time point as in a full design.

Strength		**50 mg**			**75 mg**			**100 mg**		
Batch		**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**
Container Size	**15 ml ***	**T**	**T**	**T**				**T**	**T**	**T**
	100ml *									
	500 ml *	**T**	**T**	**T**				**T**	**T**	**T**

Key: T = Sample tested. * Container closure is same as of other pack sizes.

6.17 MATRIXING:

6.17.1 Matrixing is the design of a stability schedule such that a selected subset of the total number of possible samples for all factor combinations shall be tested at a specified time point. At a subsequent time point, another subset of samples for all factor combinations shall be tested.

6.17.2 The design assumes that the stability of each subset of samples tested represents the stability of all samples at a given time point.

6.17.3 The differences in the samples for the same drug product shall be identified as, for example, covering different batches, different strengths, different sizes of the same container closure system, and in some cases for different container closure systems.

6.17.4 When a secondary packaging system contributes to the stability of the drug product, matrixing shall be performed across the packaging systems.

6.17.5 Matrixing shall be applied for the samples of same drug product covering different batches, different strengths, and different sizes of the same container closure system.

6.17.6 While designing bracketing and Matrixing ensure minimum three test points including initial analysis for all storage conditions on stability.

6.17.7 Matrixing design shall be balanced as far as possible so that each combination of factors is tested to the same extent over the intended duration of the study and through the last time point prior to submission.

6.17.8 In a design where time points are matrixed, all selected factor combinations shall be tested at the initial and final time points, while only certain fractions of the designated combinations shall be tested at each intermediate time point.

6.17.8.1 In case of full long-term data for the proposed shelf life shall not be available for review before approval, all selected combinations of batch, strength, container size, and fill, among other parameters, shall also be tested at 12 months or at the last time point prior to submission.

6.17.8.2 When a matrix on design factors is applied, if one strength or container size and/or fill is no longer intended for marketing, stability testing of that strength or container size and/or fill shall be continued to support the other strengths or container sizes and/or fills in the design.

6.17.8.3 When additionally, data from at least three time points, including initial, shall be available

for each selected combination through the first 12 months of the study.

6.17.8.4 For matrixing at an accelerated or intermediate storage condition, care shall be taken to ensure testing occurs at a minimum of three time points, including initial and final, for each selected combination of factors.

6.17.8.5 Design Examples:

Examples of Matrixing designs on time points for a product in two strengths (S1 and S2) are given. A **"One-Half Reduction"** initially eliminates one in every two time points from the full study design and a **"One-Third Reduction"** initially removes one in every three.

"One-Half Reduction"

Time Point (Months)			0	3	6	9	12	18	24	36
Strength	S1	Batch 1	T	T		T	T		T	T
		Batch 2	T	T		T	T	T		T
		Batch 3	T		T		T	T		T
	S2	Batch 1	T		T		T		T	T
		Batch 2	T	T		T	T	T		T
		Batch 3	T		T		T		T	T

Key: T = Sample tested

"One-Third Reduction"

Time Point (Months)			0	3	6	9	12	18	24	36
Strength	S1	Batch 1	T	T		T	T		T	T
		Batch 2	T	T	T		T	T		T
		Batch 3	T		T	T	T	T	T	T
	S2	Batch 1	T		T	T	T	T	T	T
		Batch 2	T	T		T	T		T	T
		Batch 3	T	T	T		T	T		T

Key: T = Sample tested

- Matrixing Designs for a Product with Three Strengths and Three Container Sizes are A, B, C:

6.17.8.6 Matrixing on Time Points:

Strength	S1			S2			S3		
Container Size	A	B	C	A	B	C	A	B	C
Batch 1	T1	T2	T3	T2	T3	T1	T3	T1	T2
Batch 2	T2	T3	T1	T3	T1	T2	T1	T2	T3

Batch 3	**T3**	**T1**	**T2**	**T1**	**T2**	**T3**	**T2**	**T3**	**T1**

6.17.8.7 Matrixing on Time Points and Factors:

Strength	**S1**			**S2**			**S3**		
Container size	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**
Batch 1	**T1**	**T2**		**T2**		**T1**		**T1**	**T2**
Batch 2		**T3**	**T1**	**T3**	**T1**		**T1**		**T3**
Batch 3	**T3**		**T2**		**T2**	**T3**	**T2**	**T3**	

Time Point (Months)	**0**	**3**	**6**	**9**	**12**	**18**	**24**	**36**
T1	**T**		**T**	**T**	**T**	**T**	**T**	**T**
T2	**T**	**T**		**T**	**T**		**T**	**T**
T3	**T**	**T**	**T**		**T**	**T**		**T**

Key: S1, S2, and S3 are different strengths A, B, and C are different container sizes.
T = Sample tested.

6.18 PHOTO STABILITY STUDY:

6.18.1 Photo Stability Study shall be carried out for New Product or New Primary Packaging Material depending on the Light Sensitivity of the Product. This shall be done in Photo Stability Chamber.

6.18.2 Photo Stability Testing shall be conducted on at least one primary batch of the drug product if appropriate.

6.18.3 Samples shall be exposed to light providing an overall illumination of not less than 1.2 million Lux hours (1200 Kilo Lux Hours) and an integrated near ultraviolet energy of not less than 200 Watthours/meter in Photo Stability Study.

6.18.4 The samples shall be exposed in Photo Stability and compare with unexposed sample. Exposure Period of a sample under visible light shall be calculated as per below mentioned formula:

6.18.5 Standard Exposure Time:

$$\frac{\text{Overall Illumination of Visible Light's Exposure in KL} \times 1000}{\text{AIVL}} = \frac{1200 \text{ KL} \times 1000}{5084.88}$$

≈236.02 hours ≅ 237 Hours

Where, Overall Illumination of Visible Light's Exposure in KL (as per ICH guidelines)

≈1.2 Million Lux Hours ≅1200 KL Hours ≅1200x1000 Lux Hours
AIVL=Average illumination of Visible Light by existing Photo Stability Chamber in Lux hr.

6.18.6 Exposure Period of a sample under UV light shall be calculated as per below mentioned formula:

6.18.7 **Standard Exposure Time:**

$$\frac{\text{Overall Illumination of UV Light's Exposure in Watt/Meter}^2}{\text{AIUV}}$$

$$= \frac{200\ \text{W} \times 1000000}{116.5 \times 10{,}000} \cong 171.68 \cong 172\ \text{Hours}$$

Where,
Overall Illumination of UV Light's Exposure in Watt/Meter^2 (as per ICH guidelines):
200 Watt $\cong 200 \times 10^6\ \mu$ Watt/CM^2 $\cong \frac{200 \times 1000000}{10000} = 20000\ \mu$ Watt/Cm^2
AIUV = Average illumination of UV light by existing Photo Stability Chamber in μ Watt/Cm^2

6.18.8 In case if the results of the confirmatory study are equivocal, testing of up to two additional batches shall be conducted.

6.18.9 **Analysis of samples:** At the end of the exposure period, the samples shall be examined for any changes in physical properties (e.g., appearance, clarity or color of solution, dissolution/disintegration for dosage forms such as capsules, etc.) and for assay and degradants by a method suitably validated for products likely to arise from photochemical degradation processes.

6.18.10 **Evaluation of Results:** When evaluating the results of Photostability studies to determine whether change due to exposure to light is acceptable, it is important to consider the results obtained from other formal stability studies in order to assure that the product shall be within proposed specifications during the shelf life.

6.18.11 One batch of product shall be tested during the development phase, and then the Photo stability characteristics shall be confirmed on a single exhibit / registration / process batch.

6.18.12 Nude samples shall be exposed for Photo Stability and its analytical result shall be compared with the initial analytical results of the unexposed samples.

6.18.13 Foil protected samples shall be exposed for photo stability and its complete analytical results shall be compared with the initial analytical results of the unexposed samples.

6.18.14 Marketable pack samples shall be exposed for photo stability and its complete analytical results shall be compared with the initial analytical results of the unexposed samples.

6.19 EVALUATION

6.19.1 A systematic approach shall be adopted in the presentation and evaluation of the stability information.

6.19.2 The stability information shall include results from the physical, chemical, biological, and microbiological tests, including those related to particular attributes of the dosage form (for example, dissolution rate for solid oral dosage forms). The adequacy of the mass balance shall be assessed.

6.19.3 Factors that shall cause an apparent lack of mass balance shall be considered, including, for example, the mechanisms of degradation and the stability-indicating capability and inherent variability of the analytical procedures.

6.19.4 The basic concepts of stability data evaluation shall be the same for single- versus multi-factor studies and for full-versus reduced-design studies. Data from formal stability studies and, as appropriate, supporting data shall be evaluated to determine the critical quality attributes likely to influence the quality and performance of the drug product.

6.19.5 Each attribute shall be assessed separately, and an overall assessment shall be made of the findings for the purpose of proposing a retest period or shelf life. The retest period or shelf life proposed shall not exceed that predicted for any single attribute.

6.20 STATEMENTS / LABELING:

6.20.1 A storage statement shall be established for the labeling in accordance with relevant national/regional requirements. The statement shall be based on the stability evaluation of the drug product.

6.20.2 Where applicable, specific instructions shall be provided, particularly for drug products that cannot tolerate freezing. Terms such as “ambient conditions” or “room temperature” shall be avoided.

6.20.3 There shall be a direct link between the label statement and the demonstrated stability characteristics of the drug product.

6.20.4 The storage conditions (temperature, light, humidity) indicated shall refer to the relevant national/regional requirements or following the recommendations below. The range shall be based on the stability evaluation of the drug product.

6.21 INVESTIGATION OF OOS / OOT AND ANY SIGNIFICANT CHANGES:

6.21.1 A Compliance alert defines a case in which an OOT result indicates the potential or likelihood for OOS results to occur before the expiration date within the same stability study (or for other studies) on the same product shall be investigated through Plant specific SOP. Historical data are needed to identify OOT alerts.

6.21.2 During Analytical Testing at any interval, if any OOS and any significant changes observed, it shall be addressed as per current version of **CQA SOP "Handling of Out of Specification Results"**.

6.21.3 Stability OOS situations shall be escalated as soon as the OOS result is found and Field Alert Report/Notifications shall be sent to regulatory agencies/ Customer within 3 working days shall be communicated.

6.21.4 In case the proposed results are found to be OOS within proposed shelf life then recall shall be initiated.

6.21.5 In case of confirm OOS in stability sample analysis, Head QA shall take decision of Product Recall in consultation with respective customer QA, Marketing Authorization and Management. Product Recall of marketed product shall be recalled as per **CQA SOP "Product Recall".**

6.22 PREPARATION OF STABILITY STUDY PROTOCOL AND SUMMARY REPORT:

6.22.1 A product specific Stability Study Protocol shall be prepared for each product and shall be followed for stability testing of the products.

6.22.2 For the Contract Manufacturing Product Stability Study shall be carried out as per customer requirement and Stability Study Protocol shall be prepared as per the customer requirement.

6.22.3 Stability study of all pharmaceutical formulations shall be done as per relevant product's Specification on specific Stability Study Protocol and shall be prepared as per respective Plant SOP.

6.22.4 Product and Batch wise Stability Study results shall be summarized along with conclusion as per format shown in **Annexure-II** "**Stability Study Data Summary Report"** and **Annexure-III "Photo Stability Study Data Summary Report"**.

6.22.5 The data of Stability Study Summary Report shall be compiled by QA personnel after report of analysis received from QC.

6.22.6 The Stability Summary Report shall be prepared by QA Officer/Executive, Reviewed by Operating Manager QA, Head QC and Approved by respective Plant Head QA.

6.23 CONCLUSION:

6.23.1 Based on the evaluation of the stability data, appropriate conclusion shall be concluded to support the expiration dating, product labeling and any other aspect of the product quality, which could be influenced based on the stability data.

6.23.2 A summarized report on stability Study shall be prepared to indicate the objective, methodology followed, compiled data and graphical representation of the data and final conclusions.

6.24 APPROVAL OF PROCEDURE FOR DISCONTINUATION AND DESTRUCTION OF STABILITY STUDY SAMPLES:

6.24.1 In case of Stability Study needs to discontinue, the record shall be raised by Officer/Executive QA and further, shall be reviewed by Operating Manager QA, Head QC, Head Production and Regulatory Affairs.

6.24.2 Information shall be shared to Customer / Regulatory Agency/ QP / MAH (If required), further the approval shall be taken from Head QA in format shown in **Annexure-IV "Stability Study Discontinuation and Destruction Record".**

6.24.3 After Approval remaining loaded Stability Samples shall be removed and destroyed as per respective Plant SOP by QA and Destruction details shall be filled in **Annexure-IV "Stability Study Discontinuation and Destruction Record".**

7.0 ANNEXURES:

ANNEXURE No.	TITLE OF ANNEXURE	FORMAT No.
Annexure-I	Field Alert Report for Stability Study Failure	
Annexure-II	Stability Study Data Summary Report	
Annexure-III	Photo Stability Study Data Summary Report	
Annexure-IV	Stability Study Discontinuation and Destruction Record	

8.0 DISTRIBUTION:

- Controlled Copy No. 01 Corporate Quality Assurance

9.0 REFERENCES:

- ICH Q1A (R2) Stability Testing of new Drug Substances and Products August 2003

- ICH Q1B (R2) Stability Testing of for Photostability Testing of New Drug Substances and Products November 1996.
- ICH Q1D Bracketing and Matrixing Design for Stability Testing of New Drug Substances and Products February 2002
- ICH Topic Q6A Specifications: Test Procedures and Acceptance Criteria for New Drug Substances and New Drug Products: Chemical Substances May 2000.
- Part 211- Current Good Manufacturing Practice for Finished Pharmaceuticals, Subpart I-- Laboratory Controls, Section 211.166 "Stability Testing".
- Part 211-Current Good Manufacturing Practice for Finished Pharmaceuticals, Subpart B – Applications, Section 314.81 "Other Post Marketing Reports".
- Guidance for Industry-Investigating Out Of Specification Test Results for Pharmaceutical Production; October 2006
- Guidance for Industry "Container and Closure System Integrity Testing in Lieu of Sterility Testing as a Component of the Stability Protocol for Sterile Products"; February 2008.
- MHRA Out of Specification Investigation – 2013.
- WHO Guideline WHO Technical Report Series, No. 953, 2009 Annex 2.
- WHO Guideline WHO Technical Report Series, No. 863, 1996 Annex 5.
- ASEAN Guideline on Stability of Drug Product; May 2013

10.0 REVISION HISTORY:

CHANGE HISTORY LOG

Revision No.	Change Control No.	Details of Changes	Reason for Change	Effective Date	Updated By

PHARMA DEVILS

QUALITY ASSURANCE DEPARTMENT

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Stability Study Policy	**Effective Date:**
Supersedes: Nil	**Review Date:**
Issue Date:	**Page No.:**

ANNEXURE-I (Specimen Copy)

LOGO	***X-----** **LOCATION **QUALITY ASSURANCE**
FIELD ALERT REPORT FOR STABILITY STUDY FAILURE	

To, (Name and Address of customer/Regulatory Agency)	
Stability Condition:	
1. Category of Product (NDA/ANDA):	
2. Generic Name of Drug Product	**3.** Trade / Brand Name of Drug Product
4. Dosage Form strength and Packaging Size:	
5. Batch/Lot Number:	**6.** Expiration Date:
7. Name and Address of Manufacturing Location:	
8. State Problem (Description):	
9. Date when notified about Problem or when Problem first became known to Manufacturer (Application Holder):	
10. Name of Person Notified:	
11. How was problem discovered:	
12. Reason for the Alert/Notification:	
13. Root Cause of Problem:	
14. Impact Assessment:	
15. Reference Documents:	
16. Corrective Action taken (if any) to Prevent recurrence of Problem:	
17. Remarks (If any): **Note :** Separate Reports may be attached if desired	

PHARMA DEVILS

QUALITY ASSURANCE DEPARTMENT

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

Prepared By Operating Manager QC:		
Name:	**Sign:**	**Date:**
Review Comments by Head QC:		
Name:	**Sign:**	**Date:**
Reviewed By Operating Manager QA:		
Name:	**Sign:**	**Date:**
Approved By Head QA:		
Name:	**Sign:**	**Date:**

REPORTING ESTABLISHMENT	
Name and Mailing Address (Include Zip/PIN code):	
Name and Designation of Authorized Person:	Telephone (Include Area Code):
Signature of Authorized Person:	Date Submitted:

***X = Plant Name (For Plant SOPs)**

**Location: It is the location of the plant and place.

PHARMA DEVILS

QUALITY ASSURANCE DEPARTMENT

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Stability Study Policy	**Effective Date:**
Supersedes: Nil	**Review Date:**
Issue Date:	**Page No.:**

ANNEXURE-II (SPECIMEN COPY)

LOGO	***X-----** **LOCATION **QUALITY ASSURANCE**
STABILITY STUDY DATA SUMMARY REPORT	

Stability Study Condition (Temp. ----- ºC ±------ºC & RH ------% ± ------ %)

Product Name :
Generic Name :
Batch No. :
Batch Size :
Mfg. Date :
Expiry Date :
STS No. :

Reason for Stability Study:
Strength :
Date of Sample Kept In :
Qty. Kept for Stability :
Pack Size :
Primary Packing :
STP No. :

Name of API Manufacturer:
Name of Primary Packaging Manufacturer:

Test ↓	Acceptance Criteria	Initial Testing	Time Period	Time Period	Time Period	Time Period	Time Period	Time Period
Date →								

CONCLUSION:

Prepared By:	Reviewed By:	Reviewed By:	Approved By:
QA (Officer/Executive)	Operating Manager QA	Head QC	Head QA
(Sign & Date)	(Sign & Date)	(Sign & Date)	(Sign & Date)

***X = Plant Name (For Plant SOPs)**
**Location: It is the location of the plant and place.

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Stability Study Policy	**Effective Date:**
Supersedes: Nil	**Review Date:**
Issue Date:	**Page No.:**

ANNEXURE-III (SPECIMEN COPY)

LOGO ***X-----**
**LOCATION
QUALITY ASSURANCE

PHOTO STABILITY STUDY DATA SUMMARY REPORT

(Overall Illumination of NLT 1.2 Million Lux Hours of Visible Light's Exposure and NLT 200 Watt/Meter^2 of UV Light's Exposure)

Product Name :
Generic Name :
Batch No. :
Batch Size :
Mfg. Date :
Expiry Date :
STS No. :
Reason for Stability Study :
Strength :
Date of Sample Kept In :
Qty. Kept for Stability :
Pack Size :
Primary Packing :
STP No. :
Name of API Manufacturer:
Name of Primary Packaging Manufacturer:

Sample Exposed Under	Sample Exposure Details				Total Exposure (Total in Hours)	Standard Time For Sample Exposure	Remarks
	Date of Exposure	Start Time	Date of Removal	Removal Time			
Visible light						NLT 1.2 million Lux hrs	
UV light						NLT 200W hrs/m2	

Summary Report:

Record of Test	Initial Testing	After Exposure for Photo-Stability	Remarks
Date			
Description			
Done By Analyst Name			
Verified By Operating Manager QC (Name)			

Prepared By:	Reviewed By:	Reviewed By:	Approved By:
QA (Officer/Executive) (Sign & Date)	Operating Manager QA (Sign & Date)	Head QC (Sign & Date)	Head QA (Sign & Date)

***X = Plant Name (For Plant SOPs)**
**Location: It is the location of the plant and place.

PHARMA DEVILS

QUALITY ASSURANCE DEPARTMENT

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Stability Study Policy	**Effective Date:**
Supersedes: Nil	**Review Date:**
Issue Date:	**Page No.:**

ANNEXURE-IV

LOGO ***X-----**

**LOCATION

QUALITY ASSURANCE

STABILITY STUDY DISCONTINUATION AND DESTRUCTION RECORD

Location: **Date:**

QA Reference No.:

Product Name: **Batch No.:**

Product of (Company Name):

Mfg. Date: **Exp. Date:**

Type of Stability Study: Long Term / Accelerated / Intermediate/ Photo Stability Study / Ongoing

Stage / Month:

Date of Stability Study Discontinuation:

Reason for Discontinuation:

Prepared By Officer / Executive QA:

Name: **Sign :** **Date:**

Review Comments by Operating Manager QA:

Name: **Sign :** **Date:**

Review Comments by Head QC:

Name: **Sign :** **Date:**

Review Comments by Head Production:

Name: **Sign :** **Date:**

Review Comments by Regulatory Affairs (If Applicable):

Name: **Sign :** **Date:**

Information to Customer/Regulatory Agency/QP/MAH (If Applicable) :

Name: **Sign :** **Date:**

Review and Approved By Head QA:

Name: **Sign :** **Date:**

Destruction Details

PHARMA DEVILS

QUALITY ASSURANCE DEPARTMENT

STANDARD OPERATING PROCEDURE	
Department: Quality Assurance	**SOP No.:**
Title: Stability Study Policy	**Effective Date:**
Supersedes: Nil	**Review Date:**
Issue Date:	**Page No.:**

Product Name:	**Batch No.:**
Mfg. Date:	**Exp. Date:**
Sample Qty. Destroyed:	**Destruction On:**
Destruction Done By: **Officer/Executive QA** **(Sign & Date)**	**Verified By:** **Operating Manager QA** **(Sign & Date)**

***X = Plant Name (For Plant SOPs)**

**Location: It is the location of the plant and place.