Happy Pharma

Standard Operating Procedure

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Document Title	Completing Product Inspection		
Prepared By	XX		
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Purpose

The purpose of this SOP is to describe the requirements for inspecting product to identify product defects for all manufactured product from the Happy Pharma Hong Kong facility.

Scope

The scope of this SOP includes:

- Semi-automatic visual inspection of filled product
- Manual inspection

Out of scope

The following are out of scope for this procedure:

- Packing and labelling processes – refer to **SOP-223344: Labelling and Packing Product**
- Maintenance of inspection machines during interventions or change-overs
- Operator qualifications for inspecting product – refer to **SOP-349821: Operator Qualification for Inspection**

Roles and responsibilities

The following roles are associated with this SOP.

Roles	Responsibility
Packing Manager (or delegate)	• Ensures all inspection procedures are followed at all times • Ensures operators are appropriately qualified to complete inspection activities • Assembles monthly inspection report data
Packing Operator	Completes all activities according to the requirements of this SOP.
Quality Assurance (QA)	Notifies the Packing Department when additional or manual inspection is required

Procedural overview

The following table provides an overview of the main sections of this SOP.

Section	Description
1	Determine the type of inspection activity
2	Complete preliminary operations
3	Inspect product
4	Complete in-process checks
5	Review inspection results
6	Complete reconciliation
7	Clear the line and finalising the batch

Procedure

1.0 Determine the type of inspection activity

The Packing Operator determines the type of activity required for the batch using the information in the Master Packing Instructions and Batch Record.

The following inspection activities may be completed by the Packing Department.

Activity	Description
100% Semi-automated inspection	Completed using a semi-automated Seidenader inspection machine. A complete re-inspection of all units may be requested by QA – all criteria and limits apply.
Manual inspection	Completed in a dedicated manual inspection area with white and black background for inspection of: • in-process checks • batch rejects • request from QA in response (e.g. in response to a reject type or product non-conformance, incident, deviation, etc.) The number of units to be manually inspected will be dependent on the type or size of the incident. Criteria and Acceptable Quality Limits (AQL) should be defined as per Section 5 of this SOP.

2.0 Complete preliminary operations

The Packing Operator completes the following preliminary operations in sequential order for any inspection activity.

Activity	Requirements
Perform a line clearance	Line clearance must be completed by two independent, qualified staff before any other task, including removing printed material from cages. Refer to **SOP-466700: Completing Line Clearance**. Packing material and product from previous runs must be cleared from all: • floors • machines • bins.
Set up the inspection machine	Set up the Seidenader according to the machine and security settings in the Master Packing Instructions and **SOP-278800: Product Inspection on Seidenader Machines** Document that the line setup within the batch record.
Introduce the product to the line	Locate the batch to be inspected. Confirm that the following details are the same on the batch record instruction and **FRM-138200: Product Storage**: • Product name • Vial size • Process Order • Item / Material Number • Batch Number • Quantity Collect the batch and transfer, in its entirety, to the inspection area. **Important:** Only one batch can be inspected at a time. All other batches must remain segregated and be secured to prevent product mix-ups.
Cool room products	Cool room batches should be allowed to stand at room temperature to allow condensation to evaporate from the containers. This will be determined by bottle size and quantity but should be no more than 24 hours. A visual inspection of the batch containers should be completed prior to inspection to confirm that containers are acceptable. Record on the relevant batch record the time the product spends out of the cold room (2-8ºC) as soon as the batch is taken in / out of the cool room.
Verification	When all preliminary operations are satisfactorily completed, one Packing Operator and the Production Coordinator: • Verifies the correct product type and amount of product that is on the line • Documents within the batch record.

3.0 Inspect product

This section of the SOP is comprised of the following sub-sections:

- Complete semi-automatic inspection
- Complete manual inspection
- Categorise product defects
- Manage containers required for investigation
- Requirements for operators, stoppages and interventions

3.1 Complete semi-automatic inspection

All inspections are completed using 100% semi-automated inspection with the Seidenader inspection machines according to **SOP-278823: Product Inspection on Seidenader Machines**.

Packing Operators must inspect each container for product defects (as listed in Section 3.3 of this SOP). Identify any defects:

- Circle the position of the defect on the product container using a permanent marker (when container size allows)
- Indicate the type of reject and the operator's initials on the product container using a permanent marker (when container size allows)
- Place the reject in the reject station on the Seidenader machine.

All inspections must include in-process checks according to Section 4 of this SOP.

3.2 Complete manual inspection

Containers may be inspected manually for (but not limited to):

- Re-inspection requested by QA
- Inspection of rejects
- Inspection of in-process samples

Manual inspection is completed according to the following requirements:

- Label the work area with **FRM-129300: Display Sheet for Packing Line 1 and 2**
- Unpack the containers and line them up for inspection
- Inspect each container one at a time - invert slowly while passing it from a white to black background. Ensure each bottle is examined for at least 5 seconds against both backgrounds.

3.3 Categorise product defects

The product inspection process identifies container defects that are then categorised using a risk-based approach (critical, major and minor).

Category	Summary of the Defect
Critical	**Definition** Any defect that has the potential to alter the final concentration, purity, sterility, efficacy or integrity of the product and thus could present a hazard to health.
	Integrity related defects • Missing cap • Missing stopper • Product on stopper (lyophilised product) above 2nd notch of stopper • Air bubbles in Glass (> 2.5mm) • Bottle cracked or chipped • Structural deformed bottle • Inclusion of foreign particles on internal surface of vial
	Process related defects • Glass particles in product • Metal particles in product • Fill volume • Empty bottle • Cap not crimped properly (cap not sealed properly when crimped, cap has roller damage)
	Particulate related defects • White flakes which do not dissolve into solution after swirling • Granular sedimentation • Shrunken appearance of plug (Lyophilised products) • Frothy bubbled appearance of plug (Lyophilised products) • Cloudy/hazy appearance • Discolouration • Fibrous material (Intrinsic- proteinaceous fibre or Extrinsic- synthetic fibre/hair) • Product on bottles

Category	Summary of the Defect
Major	**Definition** Any defect that does not affect the final concentration, purity, sterility, efficacy or integrity of the product but is a deviation from normal product appearance.
	Vial related defects Bubbles in glass Glass mould defects (swirl marks, surface chips)
	Non-Vial related defects • Abnormal appearance of stopper • Dents in Cap • Missing Flip-off Cap • Product below second notch on stopper
Minor	**Definition** Any minor imperfection in the container that does not affect the use or function of the product but is evidence of poor workmanship
	• Cosmetic related defects • Scratches on bottle surface • Imperfections on surface of cap/flip-off top

3.4 Manage containers required for investigation

In the event that a damaged or faulty container which has contained product is to be kept for investigation, then:

- Decant the contents into a biohazard bucket.
- Rinse the container with a cleaning solution and water to ensure that all the fluids are disposed of in a biohazard bucket.

Reject containers must be separated from acceptable containers and be 100% reconciled and recorded on the appropriate batch record.

3.5 Requirements for operators, stoppages and interventions

Packing Operators completing inspection:

- must have completed **TRN-173800: Visual Inspection Operator Certification**
- should not inspect product for more than 20 minutes at a time without an approved break (approved breaks should be a minimum of 20 minutes)
- who wear prescription glasses must wear these glasses at all times during inspection of product.

A batch must not be partially inspected and then returned to storage to allow another batch to be inspected.

All remaining units loaded onto the inspection line must be inspected before an operator can stop and/or leave the line.

All units on the inspection line during an intervention must be reinspected after maintenance has been completed. Units may be removed from the line prior to maintenance if required.

4.0 Complete in-process checks

To verify the effectiveness of the product inspection process, in-process product samples are re-inspected manually (that is, not using the Seidenader machines) according to Section 3.4 of this SOP.

The number of in-process inspections to be performed is dependent on the number of containers per batch according to the following table.

Normal Sampling Plan				
Batch size	**Critical AQL XX**		**Major AQL XX**	**Minor AQL XX**
	Sample Size	**Limit**	**Limit**	**Limit**
0 - 3200	X	X	X	X
3201 – 10,000	X	X	X	X
10,001 – 35,000	X	X	X	X
Tightened Sampling Plan				
Batch size	**Critical AQL XX**		**Major AQL XX**	**Minor AQL XX**
	Sample Size	**Limit**	**Limit**	**Limit**
0 - 3200	X	X	X	X
3201 – 10,000	X	X	X	X
10,001 – 35,000	X	X	X	X

Footnotes: The following apply to the sampling plans:

- Summarised from **AS1199.1: Sampling Procedures for Inspection by Attributes**
- The normal sampling plan adopts the AS1199.1 General Inspection Level II
- The tightened sample plan adopts the AS1199.1 General Inspection level III
- The greatest sample size per relevant batch size is adopted for each AQL to simplify the operational in-process testing execution and satisfy the minimum sample size requirement as per AS1199.1.
- In the event the sample size for the relevant batch size is increased, the total number of allowable rejects shown in the tables above cannot be increased.
- In the event there is a breach in critical rejects, a tightened in-process check (IPC) will need to be completed. This sampling plan is treated as a separate test from 'Normal'. The amount listed in the tightened sampling plan will need to be randomly gathered depending on batch size and inspected manually.

5.0 Review inspection results

Analysis of product inspection results is based on a combination of:

- Overall batch reject %
- Reject% for critical rejects
- In-process checking results

At the conclusion of the inspection process the Packing Coordinator analyses the results using the following first and second inspection tables (flowchart and reject decision matrix)

When the batch is:

- **Within the reject limits** - then the batch may continue for further processing.
- **Not within the reject limits** – then the required actions listed in the first and second inspection tables (below) must be resolved before continuing with any further processing.

6.0 Complete reconciliation

Reconciliation for inspection is completed:

Type	Reconciliation requirements
As part of a packing run	When inspection and packing are a single event, then reconciliation occurs at the end of the packing run. Refer to **SOP-123450: Labelling and Packing Product**.
After inspection	When inspection is not included with a packing event, then reconciliation must be completed after inspection.

When reconciliation is required after inspection, then complete a 100% reconciliation of all rejects, samples and good product and document in the batch record. Send all samples to QC for testing according to the batch record requirements.

All rejected units must be labelled with the following:

- Product name
- Item/material number
- Lot/batch number
- Date of inspection
- Storage conditions

Bag the rejects, label the bag with the batch/lot number and product name, and transfer to the locked allocated reject area.

Important: Do not use any rejects as QC samples.

7.0 Clear the line and finalising the batch

Product that has passed inspection and is satisfactory for further processing is either:

- locked in security cages in the storage area, or
- progressed to labelling and packing.

Once product has been removed from the inspection line (either as an independent inspection event or at the end of a packing episode) then:

- Shut down the Seidenader according to **SOP-278834: Product Inspection on Seidenader Machines**
- Complete a line clearance to remove any materials, glass, dirt or dust (refer to **SOP-464223: Line Clearance**).
- Complete all equipment and usage logs and finalise the batch documentation.

Definitions and abbreviations

Term / Abbreviation	Definition
AQL	Acceptable quality limit
batch record	Batch processing sheet
FOT	Flip off top
IPC	In-process check
MPI	Master packing instruction
QA	Quality Assurance
QC	Quality Control

References

External documents

Document	Title / Clause
AS1199.1	Sampling Procedures for Inspection by Attribute

Referenced Happy Pharma documents

Document ID	Title
SOP-445600	Line Clearance
SOP-278800	Product Inspection on Seidenader Machines
FRM-138201	Display Sheet for Product Storage

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Change History

This change history page may be removed from hardcopies if required.

Edition	Date	CC No.	Brief Description of Change
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