

LICENSING AND ENFORCEMENT DIVISION**PUBLIC cGMP INSPECTION REPORT OF PHARMACEUTICAL MANUFACTURER:****AstraZeneca Pharmaceutical Company Ltd****1.0 General information**

1.1 Name of Inspected company	AstraZeneca Pharmaceutical Company Ltd
1.2 Physical address	No.2 Huangshan Road, Wuxi, Jiangsu China
1.3 Corporate address	AstraZeneca PLC 1 Francis Crick Avenue Cambridge Biomedical Campus Cambridge, CB2 0AA United Kingdom
1.4 Summary of the main activities performed	Manufacture of lyophilized powder for injection packaged in vials.
1.5 Scope of Inspection	Product- based inspection to verify compliance to cGMP guidelines for the manufacture of lyophilized powder for injection packaged in vials.
1.6 Purpose of Inspection	To ascertain cGMP compliance for the products which have been submitted and those yet to be for registration with the Medicines Control Authority of Zimbabwe (MCAZ)
1.7 Inspectors	Mr. Shamiso C. Shambira – Lead Inspector Mr. Tendai Samkange - Co-inspector
1.8 Date of Inspection	19 th – 20 th June, 2025

2.0 Abbreviations List

Abbreviation	Expanded Form
cGMP	current Good Manufacturing Practices
GMP	Good Manufacturing Practices
MCAZ	Medicines Control Authority of Zimbabwe
PQR	Product Quality Review
HVAC	Heating, Ventilation and Air Conditioning
EM	Environmental Monitoring
EMS	Environmental Monitoring System
QC	Quality Control
API	Active Pharmaceutical Ingredient
PDE	Permissible Daily Exposure

LPC	Liquid Particle Count (context-based)
IV	Intravenous
WFI	Water for Injection
TOC	Total Organic Carbon
pH	Potential of Hydrogen
OOS	Out of Specification
MLT	Microbial Limit Test
ATCC	American Type Culture Collection
SOP	Standard Operating Procedure
e-BMR	Electronic Batch Manufacturing Record
LAF	Laminar Air Flow
HEPA	High-Efficiency Particulate Air
WHO	World Health Organization
TRS	Technical Report Series

3.0 Summary

3.1 Brief summary about the facility

Astrazeneca Pharmaceutical Company Ltd is located at No.2 Huangshan Road, Wuxi, Jiangsu, China. The site manufactures various dosage forms including General Oral Solid Dosage Forms and Sterile Lyophilized Powders for Suspension for Injection. The scope of the inspection was limited to the later.

3.2 General Information about the Company and the Site

This was an initial inspection of the site by the Medicines Control Authority of Zimbabwe (MCAZ) Inspectorate, to support registration of products in Zimbabwe. The inspection was product-based and focused on the product(s) that were intended for the Zimbabwean market, with registration statuses at the time of the inspection as listed below.

Product	Pack	Registration status
Esomeprazole Sodium 40mg lyophilized powder for suspension for injection	Single unit vials	Under evaluation for registration

Inspections over the past three years included: Japan, China, Brazil, Sweden, Saudi Arabia

3.3 Areas inspected (*Not exhaustive*)

- **Quality Management:** Product Quality Review (PQR), Quality Risk Management, Deviation control, finished product and starting material batch release, Contract agreements and Supplier approval.
- **Materials Management:** Receipt, handling, quarantine, sampling, release, reject, temperature (and humidity) monitoring and dispensing.

- **Good Practices in Production:** Production areas, production equipment, documentation and instructions, sanitation cleaning and maintenance, batch records, calibration, contamination control, in process controls.
- **Quality Control:** Review of test procedures and specifications.
- **Utilities:** HVAC, Purified Water,
- **Environmental Monitoring:** EM programme
- **Equipment qualification** and preventive maintenance

3.4 Utilities

- a. Water Purification system
- b. HVAC system
- c. Nitrogen Gas
- d. Compressed Air

3.5 Documentation reviewed (*Not exhaustive*)

As stated in the final report.

4.0 Systems Summary

PHARMACEUTICAL QUALITY SYSTEM

A documented pharmaceutical quality system (PQS) was established, with procedures in place covering key quality elements. The quality unit was responsible for oversight of quality assurance and quality control functions, and operations were defined in written procedures. Systems for product quality review, quality risk management, supplier qualification, and complaint handling were implemented and reviewed.

Product Quality Reviews

The SOP for Product Quality Review (SOP-0112401) and the Product Quality Review report for Nexium IV sterile product (REP-0466778) were examined, indicating consistent product performance with no batch rejections during the reporting period. Procedures for continued process verification (SOP-0088087) and supplier quality management (SOP-0112406) were also reviewed and found to be in place.

Product Recalls

A procedure for managing product quality issues and potential recalls (SOP-0033749) was in place. The system defined responsibilities, communication pathways, and regulatory reporting requirements.

No product recalls were reported during the inspection period.

Personnel

Personnel involved in manufacturing and quality operations were appropriately qualified and experienced. Roles and responsibilities were clearly defined within the organizational structure.

Key personnel were available to support the inspected operations, and staffing levels were considered adequate.

Training

Training programmes were established and implemented for all relevant personnel. Training needs were identified and documented, and records of training activities were maintained.

Personnel were trained on GMP requirements, operational procedures, and job-specific responsibilities.

Documentation

Documentation systems were established to support GMP compliance. Procedures for document control (SOP-0112416) and batch record management (WI-00107776) were implemented.

Self-inspection, Quality Audits and Supplier Audits

Systems for self-inspection and supplier qualification were established and implemented. Procedures were in place to conduct internal audits and evaluate supplier performance on a periodic basis.

Supplier qualification processes included risk assessments, quality agreements, and ongoing monitoring activities.

GOOD MANUFACTURING PRACTICES

Manufacturing operations for lyophilized powder for injection were generally conducted in accordance with approved procedures and cGMP requirements. Production processes were supported by automated systems and electronic batch manufacturing records, with defined process flows and controls.

The Production Master List (batch no. 60050572) and associated sterilization report (Report 8383) were reviewed and found to be generally acceptable. Personnel, equipment, and utilities were adequate to support current manufacturing activities.

The deficiencies raised in this section have been adequately addressed and will be verified during future MCAZ inspections.

Batch manufacturing records and supporting documentation were reviewed and generally found to be adequate.

Production – Walk through inspection

Production activities were conducted according to defined procedures and supported by appropriate controls. Manufacturing processes included vial washing, depyrogenation, filling, lyophilization, and packaging.

In-process controls and monitoring systems were implemented to ensure product quality throughout manufacturing.

Sanitation and Hygiene

Sanitation and hygiene practices were established and implemented across the facility. Cleaning and disinfection procedures were supported by validated disinfectant efficacy studies, which demonstrated acceptable microbial reduction.

Appropriate measures were in place for maintaining cleanliness of equipment and manufacturing areas. Hygiene practices for personnel and materials handling were generally adequate.

Personal Hygiene

Procedures for personal hygiene and gowning were in place and implemented. Personnel followed defined entry and exit procedures for controlled areas.

Gowning practices and hygiene controls were consistent with the requirements for sterile manufacturing environments.

Premises

The facility was designed and maintained to support sterile manufacturing operations. Production areas, storage areas, and utilities were organized to minimize the risk of contamination and cross-contamination.

Equipment

Equipment used in manufacturing and utilities was suitable for its intended purpose and appropriately maintained. Preventive maintenance and calibration programmes were implemented.

Equipment performance and operational parameters were monitored during manufacturing processes.

Contract Production, Analysis and Other Activities

Contracted activities were governed by quality agreements and relevant procedures. Supplier-related activities, including analytical testing and material sourcing, were supported by documented quality systems.

Oversight of contracted services was performed through defined qualification and monitoring processes.

UTILITIES

Heating, Ventilation and Air Conditioning (HVAC) System

The HVAC system was designed to provide appropriate environmental conditions for sterile manufacturing operations, with a combination of fresh and recirculated air passing through multiple filtration stages including terminal HEPA filters. Environmental parameters such as temperature, humidity, and pressure differentials were monitored using an Environmental Monitoring System (EMS).

Water Systems (Purified Water and Water for Injection)

The water system comprised purified water, water for injection, and pure steam, generated from pretreated municipal water and distributed through dedicated systems. Critical parameters TOC were monitored online.

The deficiencies raised in this section have been adequately addressed and will be verified during future MCAZ inspections.

Compressed Air and Nitrogen Gas Systems

Compressed air and nitrogen gas systems were used in manufacturing processes and were designed to supply clean, dry gases suitable for pharmaceutical use. Filtration systems were in place, and integrity testing of filters was performed with documented results. The systems were monitored and maintained according to established procedures to ensure consistent performance.

QUALIFICATIONS AND VALIDATIONS

Validation and qualification activities were conducted in accordance with documented procedures. The validation master plan was reviewed and found satisfactory.

Cleaning Validations

The cleaning validation programme (QBP11-1_S01) defined worst-case selection criteria and established cleaning limits based on product characteristics and toxicity.

Process Validations

Process validation studies for Nexium IV 40mg (PRO-0207900 and REP-0429197) were reviewed, demonstrating consistent process performance across validation batches.

Other qualifications

Other studies, including disinfectant efficacy (REP-0205020) and garment qualification (PRO-0210357 and REP-0447044), were also conducted and documented.

MATERIALS MANAGEMENT

Procedures for the receipt, storage, and handling of raw materials and packaging materials (WI-0010645) were in place. Materials were managed under defined conditions to ensure their quality and integrity.

Controls were implemented for material identification, traceability, and release for use in production.

The deficiencies raised in this section have been adequately addressed and will be verified during future MCAZ inspections.

GOOD PRACTICES IN QUALITY CONTROL

The Quality Control (QC) function was independent of production and operated in accordance with established procedures. The laboratories were adequately equipped to perform physicochemical and microbiological testing of raw materials, in-process samples, finished products, and stability samples. Systems for sample receipt, registration, and distribution were in place, ensuring traceability throughout the testing process.

Sample Management and Traceability

An access-controlled system for sample receipt and distribution was in place. Samples were registered upon receipt and assigned unique identifiers to ensure traceability throughout the testing lifecycle. Records reviewed demonstrated adequate control of sample handling and documentation.

Testing of Starting Materials and Finished Products

Specifications for Esomeprazole Sodium for Injection (SPEC-0140083) were reviewed. Analytical methods were implemented in accordance with approved specifications, and working standards were traceable to qualified reference standards.

Stability Studies

Stability studies were conducted under defined climatic conditions, including long-term, intermediate, and accelerated conditions. Stability chambers were available to support different storage requirements based on product distribution. Stability data were trended to monitor product quality over time.

OOS/OOT Management

A procedure for handling out-of-specification and out-of-trend results (WI-0010714) was in place. The system included provisions for hypothesis testing, laboratory investigation, and escalation to manufacturing investigations where required. Records reviewed indicated that investigations were conducted in line with established procedures.

Microbiology Laboratory

The microbiology laboratory operated under controlled environmental conditions with defined procedures for media preparation, sterilization, and testing. Microbiological testing supported both product release and environmental monitoring programmes.

Sterility Testing and Aseptic Controls

Sterility testing was performed in an isolator system located within a controlled environment. Procedures for aseptic handling and contamination control were implemented.

Environmental Monitoring

Environmental monitoring programmes were in place to assess viable and non-viable particulate levels in critical areas. Data were trended to ensure continued compliance with cleanroom classification requirements.

Instrumentation and Equipment

The laboratory was equipped with appropriate analytical instruments, and calibration and maintenance programmes were implemented. Equipment status was monitored, and records of calibration and usage were maintained.

3.0 Observations

As stated in the final report.

4.0 Conclusion

Based on the areas inspected, the people met, and the documents reviewed including the observations listed in the Inspection Report, **AstraZeneca Pharmaceutical Company Ltd** located at **No.2 Huangshan Road, Wuxi, Jiangsu, China** was considered to be operating at an acceptable level of compliance with WHO cGMP guidelines for the manufacture of lyophilized powder for injection packaged in vials.

All the non-compliances observed during the inspection listed in the full report were addressed by the manufacturer to a satisfactory level prior to the publication of the MCAZ PIR.

The site will be reinspected **4 years** from the date of the last inspection in line with the risk-based reinspection frequency determination.

5.0 References

1. WHO good manufacturing practices for pharmaceutical products: main principles. *WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Eight Report* Geneva, World Health Organization, 2014 (WHO Technical Report Series, No. 986), Annex 2

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2. WHO Good Manufacturing Practices: water for pharmaceutical use. *WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fourth-six Report*. Geneva, World Health Organization, 2012 (WHO Technical Report Series, No. 970), Annex 2
<http://www.who.int/medicines/publications/pharmprep/en/index.html>
3. WHO guidelines on good manufacturing practices for heating, ventilation and air-conditioning systems for non-sterile pharmaceutical dosage forms. *WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Fifth Report* Geneva, World Health Organization, 2011 (WHO Technical Report Series, No. 961), Annex 5, Annex 9
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4. Supplementary guidelines on good manufacturing practices: validation. *WHO Expert Committee on Specifications for Pharmaceutical Preparations. Fortieth Report*. Geneva, World Health Organization, 2006 (WHO Technical Report Series, No. 937), Annex 4
<http://www.who.int/medicines/publications/pharmprep/en/index.html>
5. WHO good practices for pharmaceutical microbiology laboratories. *WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Fifth Report*. Geneva, World Health Organization, 2011 (WHO Technical Report Series, No. 961), Annex 2 <http://www.who.int/medicines/publications/pharmprep/en/index.html>
6. Stability testing of active pharmaceutical ingredients and finished pharmaceutical products. *WHO Expert Committee on specifications for pharmaceutical preparations. Forty-third report*. Geneva, World Health Organization, 2009. (WHO Technical Report Series, No. 953), Annex 2 <http://www.who.int/medicines/publications/pharmprep/en/index.html>
7. WHO guidelines on quality risk management. *WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty-Seventh Report* Geneva, World Health Organization, 2013 (WHO Technical Report Series, No. 981), Annex 2
<http://www.who.int/medicines/publications/pharmprep/en/index.html>
8. WHO Expert Committee on Specifications for Pharmaceutical Preparations. *WHO Expert Committee on Specifications for Pharmaceutical Preparations. Thirty Ninth Report* Geneva, World Health Organization, 2005 (WHO Technical Report Series, No. 929), Annex 3
<http://www.who.int/medicines/publications/pharmprep/en/index.html>
9. WHO Expert Committee on Specifications for Pharmaceutical Preparations. *WHO Expert Committee on Specifications for Pharmaceutical Preparations. Forty Ninth Report* Geneva, World Health Organization, 2015 (WHO Technical Report Series, No. 992), Annex 4
<http://www.who.int/medicines/publications/pharmprep/en/index.html>

10. WHO Expert Committee on Specifications for Pharmaceutical Preparations. *Forty-fourth report of the WHO Expert Committee on specifications for pharmaceutical preparations*, World Health Organization, 2010 (WHO Technical Report Series 957, 2010), Annex 1
<http://www.who.int/medicines/publications/pharmprep/en/index.html>