



Johnson Matthey
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Johnson Matthey Supplier Management System Clean Air

Part 1: Global Supplier Manual

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The latest version of all documents associated with the Global Supplier Manual can be found on the appropriate Johnson Matthey internet sites shown below:

<https://matthey.com/global-supplier-manual>

The English version of the Global Supplier Manual is the master version. Although translations are provided by Johnson Matthey, should there be any ambiguity in the translation, then the English language text will prevail.

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	Nilai	Smithfield
	Pilar	Wayne

0 Introduction

0.1 Purpose and Objectives

The purpose of this manual is to describe the requirements of the Johnson Matthey Supplier Management System (JM-SMS) as run by Clean Air Sector. Suppliers shall familiarise themselves with the JM-SMS and comply with its requirements.

The objectives of the JM-SMS are to

- provide a consistent set of processes across all JM sites for working with suppliers,
- ensure that products and services provided by suppliers meet the requirements of JM and its customers,
- monitor the performance of products and services provided by suppliers,
- provide performance feedback to suppliers, and
- provide a consistent and timely way of addressing issues with suppliers.

0.2 How to Use this Manual

Suppliers shall ensure that they are using the latest version of all documents that comprise the Global Supplier Manual.

The Global Supplier Manual is split into three parts:

Part 1: Global Supplier Manual

This is the primary manual for outlining JM's requirements of its suppliers. It is split into four sections:

- Section 1: General Requirements
- Section 2: Operation of the Johnson Matthey Supplier Management System
- Section 3: Quality Requirements
- Section 4: Supplier Code of Conduct

Part 2: Appendices

This part includes detailed information, specific to Clean Air Sector, and should be read in conjunction with Part 1.

Part 3: Site-Specific Requirements

This part details requirements specific to each JM site.

1 General Requirements

1.1 Overview of the Johnson Matthey Supplier Management System

The JM-SMS is split into four primary processes:

- Supplier Approval Process;
- Supplier Performance Process;
- Supplier Complaint and Escalation Processes;
- Supplier Development Process.

1.2 General Principles

JM is committed to deliver defect-free products to its customers on time, every time. Similarly, JM requires the same commitment from its suppliers to supply

- the right product,
- at the right quality,
- at the right time,
- in the right condition, and
- at the right price.

JM is committed to continual improvement and it expects the same commitment from its suppliers. Suppliers shall employ a defined process for delivering continual improvement that is managed at all levels of their business.

1.3 Management System Requirements

Suppliers shall be certified to ISO 9001 by an accredited certification body.

Suppliers should aim to progress to compliance with IATF 16949:2016 and to reach IATF 16949 certification. The first step in achieving this goal is adherence to the JM-SMS. Periodically JM carries out process audits at suppliers'.

Unless otherwise confirmed in writing by JM, all suppliers shall be design responsible for their products. All business processes associated with the manufacture and supply of product to JM shall be covered in the scope of a supplier's certification.

Suppliers should be certified to ISO 14001 by an accredited certification body, or actively working towards certification. JM recommends that suppliers work to BS OHSAS 18001 principles.

Suppliers shall submit copies of relevant certificates to JM upon any change of status or upon any change in the organisation of the supplier; *e.g.*

- acquisition;
- merger;
- relocation.

*: For guidance on JM-recognised certification bodies, please refer to your local JM quality contact.

1.4 Management of Supply Chain

The supplier shall ensure that its suppliers and sub-suppliers who work on products that will be purchased by JM comply with JM's requirements on

- quality,
- health and safety,
- environmental standards and sustainability, and
- corporate social responsibility.

1.5 Supplier Audits and Access to Supplier Facilities

JM may conduct periodic audits of the supplier's systems, products and processes to ensure that they meet requirements. These may be performed by JM or in conjunction with a JM customer. The supplier shall provide access to enable audits to be performed; e.g. to the following:

- areas associated with the manufacture, storage and testing of product purchased by JM;
- training and competency records;
- EHS data for the supplier's locations.

Reasonable restrictions to ensure confidentiality of supplier information will be permitted.

The supplier shall take all reasonable steps to facilitate an audit on the premises of its own suppliers or sub-contractors if requested by JM.

1.6 Conduct on Johnson Matthey Sites

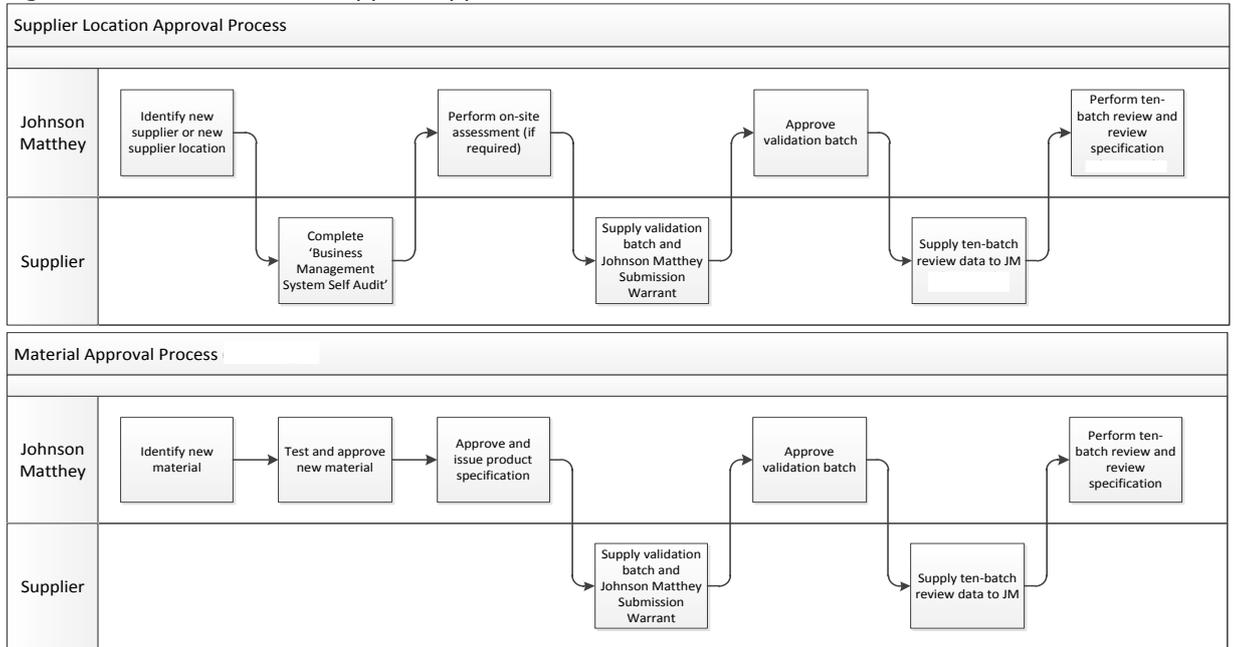
The supplier is responsible for the conduct of its personnel on any JM site (including contracted delivery drivers). The supplier's personnel shall adhere to local JM conduct rules, as detailed in the Site-Specific Requirements, or as advised by JM staff.

2 Operation of the Johnson Matthey Supplier Management System

2.1 Supplier Approval Process

There are a number of steps that need to be completed to become an approved supplier to JM, outlined in Figure 1.

Figure 1: Overview of the Supplier Approval Process



These processes are outlined in more detail in the appropriate Appendix C.

2.2 Supplier Performance Process

JM completes periodic assessments of its suppliers, based upon the following areas:

- on-going performance data:
 - quality performance;
 - delivery performance;
 - commercial performance;
- business assessment:
 - technical capability & product performance;
 - financial stability;
 - capacity;
 - pricing;
- management systems:
 - quality systems;
 - environmental and sustainability performance;
 - health and safety.

JM will share the supplier’s overall rating, along with areas for improvement, with the supplier.

2.3 Supplier Complaint and Escalation Processes

The supplier shall resolve issues and problems in a robust and timely manner. Details of the supplier complaint process can be found in the appropriate Appendix B.

In situations where problems cannot be resolved using the supplier complaint process, JM may employ an escalation process, which can include further containment actions to assure product quality, *e.g*:

- reinspection or testing of all parts/materials by the supplier prior to shipment to JM;
- reinspection or testing of all parts/materials by a third party, approved by JM, prior to shipment to JM;
- reinspection or testing of all parts/materials by JM or a third party at a JM plant.

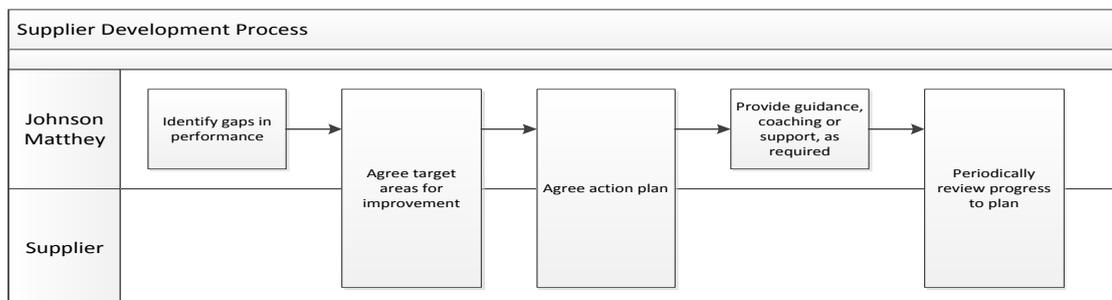
The supplier shall bear any costs associated with reinspection or testing, and any consequential disruption to JM manufacturing.

In addition to these controls, JM may undertake supplier development actions (see Section 2.4). These may include targeted process audits and improvement planning. This may lead to downgrading of the supplier and possible deselection.

2.4 Supplier Development Process

JM may become involved in development activities with the supplier to improve business performance, see Figure 2.

Figure 2: Overview of the JM Supplier Development Process



There are a number of tools that JM may use during any of these processes, which are detailed in the appropriate Appendix B.

3 Quality Requirements

3.1 Document and Record Retention Requirements

The supplier shall maintain all documents and records for a minimum retention period to prove conformance to

- legal requirements (e.g. SDS, RoHS, REACH),
- JM-specific requirements (e.g. copies of process control plans),
- JM specification requirements (e.g. certificate of analysis values),
- the supplier's quality management system requirements (e.g. 3rd party certification information),
- traceability requirements (e.g. raw materials utilised, through to product shipment), and
- OEM requirements (e.g. IMDS).

The supplier shall make documents and records available to JM upon request during the minimum retention period, even in the event that the supplier ceases to supply products to JM.

The minimum retention period is fifteen years from the date of supply to JM.

3.2 Risk Assessments and Key Characteristics

The supplier shall complete risk assessments on the manufacturing process and, if design is owned by the supplier, on the product. The default tool is Failure Mode and Effects Analysis (FMEA) performed according to AIAG's 'Potential Failure Mode and Effects Analysis' reference manual (see the appropriate Appendix A). The supplier shall complete process risk assessments at each location where parts/materials are manufactured; subcontracted processes are included in this requirement.

The supplier shall pay particular attention to key characteristics. A key characteristic is a product or process characteristic which can impact the safety, performance, subsequent processing, compliance with regulations, or fit, form or function of the product (*i.e.* special characteristics as outlined in IATF 16949:2016).

The supplier shall make the product and process risk assessments available for review by JM prior to the production of the validation batch and upon subsequent request.

3.3 Process Flow Diagrams and Process Control Plans

The supplier shall develop and document a process flow diagram (PFD) and process control plan (PCP), which shall include subcontracted processes, prior to production of the validation batch. The default tool for developing a PCP is outlined in AIAG's 'Advanced Product Quality Planning and Control Plan' reference manual (see the appropriate Appendix A). The supplier shall submit the PFD to JM as part of the JM Product Approval Process. The supplier shall make the PCP available for review by JM prior to the production of the validation batch.

The supplier shall review and update the PFD and PCP when any change occurs that impacts the product, manufacturing process, measurement systems, logistics or supply sources, or when there are updates to the product or process risk assessments. The supplier shall make the PFD and PCP available for review by JM following any changes.

3.4 Specifications

Suppliers with design responsibility shall complete a product review with JM to capture and document the requirements for each product supplied. This information shall be contained in a specification approved by JM.

3.5 Work Instructions

The supplier shall employ documented work instructions for processes that impact conformity to product requirements. Work instructions shall be available for use at necessary workstations.

3.6 Certificate of Analysis

The supplier shall provide a certificate of analysis (COA) for every batch/lot it supplies to JM. The agreed specification identifies the required test results to be reported. See the Site-Specific Requirements for details regarding the method of sending and receiving COAs.

3.7 Product Approval Process

The supplier shall follow a JM-defined product approval process, details of which can be found in the appropriate Appendix C. JM has a specific procedure for internal validation of raw materials.

3.8 Process Performance

Unless otherwise specified by JM, the supplier shall manage all identified key characteristics to ensure that the "long-term process performance" meets the following criteria:
long-term process performance ≥ 1.33

3.9 Production Batch/Lot Sample Retention

The supplier shall retain a representative sample from each production batch/lot for a minimum of three years.

3.10 Change Management

The supplier shall employ a defined change management process. Changes initiated by JM shall be included within the scope of the change management process.

3.10.1 Initial Samples

The supplier shall notify JM in writing, at the time of submission of initial samples of product to a JM Technology Centre (JMTC), if the product is not made with the intended production equipment or by the intended production process. The supplier shall notify the JMTC in writing in the event of any change in status of the product in line with the criteria outlined in the appropriate Appendix D.

3.10.2 Production Change Management after submission of a JM validation batch

For changes outlined in the appropriate Appendix D, the supplier shall obtain written approval from a JMTC prior to supplying material with the changes applied. The supplier shall make the change request to the JMTC that approved the validation batch.

If a requirement for a new validation batch is identified according to the criteria outlined in the appropriate Appendix D, or by the JMTC, the product approval process shall be followed.

3.11 Inventory Management and Safety Stock

The supplier shall use a 'first-in-first-out' (FIFO) inventory management system. Obsolete stock shall be managed in a similar manner to non-conforming product.

Safety stock has to be intended as the minimum level of stock that must always be visible and available for inspection by JM at any time without advance notice.

Supplier shall hold a reasonable amount of safety stock to cover disruptions in supply (typically 4 weeks). JM may determine specific requirements for specific materials.

3.12 Premium Freight

The supplier shall inform the relevant JM purchasing department of any shipment that has been sent by premium freight.

3.13 Training

The supplier shall ensure that appropriate training needs are identified and documented including those for subcontracted processes. This shall include training to cover JM-SMS requirements and the tools identified in the appropriate Appendix A.

3.14 Problem Solving

The supplier shall employ a defined problem-solving process, which leads to identification and elimination of root causes. An example technique is outlined in AIAG's 'Effective Problem Solving' guideline manuals (see the appropriate Appendix A).

3.15 Contingency Planning (Business Continuity Plan)

The supplier shall assess and document the risks facing the supplier's business, especially those that could affect supply to JM. The supplier shall assess the likelihood of occurrence of these risks and document plans to ensure that supply to JM is not interrupted. Examples of such risks include utility interruptions, labour shortages, key equipment failure and field returns.

The supplier shall make contingency plans available for JM to review upon request. The supplier shall perform periodic updates on an appropriate basis.

3.16 Preventive Maintenance

The supplier shall employ a defined system for carrying out planned total preventive maintenance. This shall include having replacement parts available for key manufacturing equipment.

3.17 Product Safety Representative

Supplier provide JM with contact details of a nominated person at each of their manufacturing locations that JM could contact in relation to product safety and product liability throughout supply chain.

4 **Supplier Code of Conduct**

Supplier must comply with latest version of Johnson Matthey Supplier Code of Conduct that is published on Johnson Matthey website.
(<https://matthey.com/-/media/files/sustainability/supplier-code-of-conduct.pdf>)