

Quality Requirements for KEMET Raw Material Suppliers

Introduction

KEMET requires assurance that Suppliers have effective, operating quality systems with processes under control and capable of manufacturing materials which consistently conform to all requirements. Today Quality Management (QM) includes and integrates all areas of the company. It includes all functions both horizontal and vertical. The QM systems control the cooperation between all relevant areas, identify improvement opportunities and influence the overall results of the company.

1. Purpose

The purpose of this specification is to define the general quality requirements for KEMET raw material suppliers.

2. Scope

This specification is a KEMET requirement for all purchased production direct material. In the event of a conflict with the requirements stated in this document, the precedence of the governing documents are:

- KEMET Purchase Agreement
- KEMET Purchase Orders
- KEMET Materials Specifications (M-Spec) referenced on the Purchase Order

3. Quality Responsibility

Suppliers have the responsibility to assure that each product is in conformance with the defined technical specifications and is fit for use. Responsibilities and authorities for all personnel performing work affecting quality should be defined and communicated throughout the organization.

4. Quality Management System Requirements

4.1 ISO 9001 Registration / ISO/TS 16949 Compliance

KEMET's goal for raw material suppliers is *registration* to ISO 9001 and *compliance* with ISO/TS 16949. KEMET raw material suppliers should have third-party Certificates to ISO 9001 or ISO/TS 16949.

- Suppliers are required to provide a current copy of their third-party certificates to KEMET.
- Suppliers that are not registered to ISO/TS 16949, must complete the Supplier Quality Assessment Form and return it to KEMET as instructed on the form.

The supplier's quality management system (QMS) should be documented and clearly oriented to the objective of supplying material with zero defects.

If suppliers are disqualified from ISO 9001 or ISO/TS 16949 registration, it is the responsibility of the supplier's Quality Management to immediately notify KEMET Procurement.

4.2 KEMET Contacts

When starting activities with KEMET, suppliers should contact the KEMET buyer who will identify further contacts, as appropriate. This refers to all communication between KEMET and the supplier, e.g. approval, ratings, quality issues and corrective actions, change notifications, etc.

4.3 Advanced Product Quality Planning

Suppliers should have a process for product quality planning which demonstrates the application of Advanced Quality Planning techniques (see section 6 References below).

4.4 Production Product Approval Process (PPAP)

The Suppliers should have a process in place for product approval. KEMET recommends a process such as AIAG PPAP. (See section 6 References AIAG PPAP manual).

4.5 Product and Process

Product /Process Definition and Knowledge

Methods for determining and maintaining process capability should be documented and implemented.

Manufacturing and test procedures should be referenced on Control Plans and Flow Charts and, upon request, be submitted to KEMET. (See section 6 References below).

Failure Mode and Effects Analysis (FMEA) is recommended as a systematic, disciplined approach for evaluating the potential failure of a product/process and its effects, identifying actions that could eliminate or reduce the chance of the potential failures and documenting the process. (See section 6 References below).

Work instructions for employees affecting quality should be documented and available at point of use. A system for initiating, approving and communicating changes to work instructions should be in place.

Processes for ensuring personnel are properly trained and for recording training are required.

Calibration

A formal calibration program is required for measuring equipment used in the manufacturing process. For calibration performed internally, written procedures are needed to describe the scope of the calibration laboratory. If external laboratories perform calibration, they should be accredited to ISO/IEC 17025 (See section 6 References below.) Statistical studies are recommended for determining variation in measurement equipment. (See section 6 References, MSA manual.)

Product Status and Traceability

Manufacturing lots (and the material used) are to be traceable throughout the manufacturing process. The identification of inspection and test status for products shall be maintained at appropriate stages of production. Such records must prove conformance to specifications and be available, upon request and within a time to be agreed with the KEMET buyer.

Methods should be in place to identify, segregate, analyze, and dispose of nonconforming product.

Maintenance Systems

Suppliers should have a Preventive / Predictive Maintenance System in place as well as a process for the management of production tooling.

Process Control

Statistical methods (e.g. SPC) should be used in manufacturing processes (see section 6 References, SPC manual below).

Inspections

Incoming, process and final inspections should be routinely performed and records of these maintained.

Change Control and Customer Notification

Suppliers are required to have a process by which changes that may impact raw material product supplied to KEMET are verified and validated prior to implementation. KEMET must be notified in a timely manner, one month in advance for minor and six months for major changes that affect form, fit or function of the material. Such changes may include, but are not limited to:

- Product design
- Manufacturing (i.e., process, equipment, or raw material)
- Manufacturing location
- Product obsolescence.

Quality Problems Detected after Delivery and Shipping Delays Notifications:

If agreements reached such as quality characteristics, schedules or delivery quantities cannot be met, the supplier shall notify KEMET immediately. The supplier shall also notify KEMET immediately of any deviations detected after delivery. To support a rapid solution, the Supplier shall disclose all necessary data and facts.

Problem Resolution

Suppliers should use the Eight Discipline (8D) or an equivalent process for problem solving. (See section 6 References below.)

Suppliers must have a process for handling complaints from KEMET and provide timely and effective corrective action, as needed. A Corrective Action Report shall be completed by a supplier when requested by KEMET. (See section 5.2 Corrective Action below.)

4.6 Product and Process Audit

Suppliers should conduct internal audits of its quality system, manufacturing facilities, and products to determine compliance with internal and external customer requirements. After prior agreement of a date, KEMET and its customers are to be granted access to a supplier's plant(s) to carry out product and process audits. Access to confidential manufacturing processes and other corporate secrets may be denied.

4.7 Product Liability

Product faults can be the cause of liability claims against a supplier. Therefore staff members should know about the principles of product safety and liability.

4.8 Management Review and Continuous Improvement

Management should hold formal, periodic reviews of the organization's performance and the continued effectiveness of its QMS. In addition, suppliers are encouraged to have a process to drive continual improvement of its organization and manufacturing processes.

4.9 Document Control and Records

All documents and records demonstrating product quality conformance and traceability must be stored in safe conditions in order to prevent destruction and maintained for 5 years, or longer if required by legislation. Upon agreement, test records are to be attached to the deliveries.

4.10 Safety, Health, and Environment

KEMET's Environmental Policy states that KEMET will conduct its business in a manner designed to protect the health and safety of our employees, our customers, the public, and the environment. Suppliers are expected to take their environmental responsibility in a similar way. It is of the utmost importance that suppliers comply with all pertinent legal regulations (local, national, and global) concerning the health, safety, and environmental aspects of the materials KEMET purchases. This extends to the methods and processes used in the manufacture of those materials. It is expected that the supplier be able to provide evidence of compliance, via written communication, upon KEMET's request.

An MSDS accompanies any first time delivery of any new raw material. An MSDS must be re-issued to KEMET if there is a change in the composition of the material. Material composition data must be provided, as requested by KEMET to provide evidence of compliance to industry and legislative environmental requirements. For full environmental commitment we expect our suppliers to plan for and implement an Environmental Management System, such as ISO 14001 (see section 6 References below).

4.11 Conflicts Minerals and Supplier Social & Environmental Responsibility:

As stated on KEMET PO Terms and Conditions:

EICC

The Electronics Industry Code of Conduct (EICC) is a comprehensive code of conduct which addresses all aspects of corporate social responsibility and includes rules related to the environment, health and safety, labor, ethics, and forced and child labor. Compliance with the EICC is required of all of Buyer's suppliers. Information concerning the EICC is available at www.eicc.info. Seller represents and warrants that (i) Seller has read and understands the EICC; (ii) Seller is compliant with the EICC; (iii) Seller shall conduct periodic self-evaluations to ensure conformity to legal and regulatory requirements, the content of the EICC and customer contractual requirements related to social and environmental responsibility, and shall supply copies of such self-evaluations to Buyer upon Buyer's written request; and (iv) Seller will remain compliant with EICC and will immediately notify Buyer in the event that Seller learns of items of noncompliance.

Conflict Metals:

If the goods are, or contain, tin, tantalum, tungsten, and/or gold (whether in raw or processed form, and whether or not combined with other materials), Seller hereby certifies that such metals have not been sourced in a manner which directly or indirectly finances or benefits armed groups in the Democratic Republic of the Congo or adjoining countries. In addition, Seller shall have and implement its own Conflict Mineral Policy which shall be aligned with Buyer's policy (available at www.kemet.com), shall include a commitment to legal compliance and shall be communicated to Seller's sub-suppliers. Provided such procedures are available, Seller shall ensure that purchased tin, tantalum, tungsten, and/or gold originate from smelters validated/certified by third parties in accordance with procedures adopted by the Electronic Industry Citizenship Coalition as being conflict mineral free. Seller shall work with sub-suppliers to ensure traceability of these metals within their products, back down to smelter and mine. Traceability data shall be maintained and recorded for 5 years. Documentation shall be provided to Buyer upon request.

4.12 Supply Chain Security Program (C-TPAT)

The Customs-Trade Partnership Against Terrorism (C-TPAT) is a voluntary supply chain security program led by U.S. Customs and Border Protection (CBP) and focused on improving the security of private companies' supply chains with respect to terrorism. KEMET seeks to select business partners that comply with, or will make improvements that may be required to satisfy, the C-TPAT security guidelines. For those not eligible for C-TPAT membership, KEMET request that the company follow C-TPAT guidelines, and/or participate in foreign security programs. The following processes are used to determine whether KEMET business partners meet C-TPAT guidelines.

Foreign suppliers are provided with a C-TPAT Assessment Questionnaire containing questions designed to obtain the information required by the individual security guidelines for the type of business partner. The business partners are given the following options.

- A. Partners may complete the questionnaire and return it to KEMET for review.
- B. If the business partner is a member of C-TPAT, they may provide KEMET with a copy of their certification, SVI or other acceptable verifiable documentation, and bypass completing the questionnaire.
- C. Partners may provide written certification by a company officer that they comply with the C-TPAT guidelines and/or that they participate in an equivalent accredited security program in their country.

5 Supplier Quality

The KEMET Supplier Quality System ensures the procurement of high-quality materials from approved suppliers. Suppliers are evaluated, and an approved supplier list is maintained for each raw material. Suppliers are expected to be able to provide materials with zero defects. Accept / reject criteria of 0/1 is used for outgoing sample inspection. In addition, 100% on-time delivery performance (0 days late, 3 days early) is required.

5.1 Approval / Disapproval

New suppliers of new materials are approved through technical, business, and quality assessments. Suppliers are disapproved when their material or business is no longer needed at KEMET or when, in the KEMET Commodity Team's judgment, any of the following are no longer acceptable:

- Supplier Quality and Delivery Performance.
- Material Performance in KEMET's production process.
- Responsiveness / Ineffectiveness to corrective action requests.
- Customer Service

A disapproved supplier may be considered for re-approval after satisfactorily addressing the actions and requirements on the disapproval communication.

5.2 Corrective Action

A Supplier Corrective Action Request (SCAR) is issued for either quality or delivery discrepancies. A recurring problem is identified through monitoring rejection history and delivery reliability. Metric data is monitored at least quarterly. If four corrective action requests are issued within six months to the same supplier for the same problem, it will be recommended by Procurement to the Commodity Team that the supplier be considered for disqualification. The supplier's implementation of a corrective action is verified by KEMET Procurement. (see section 4.4 Problem Resolution above).

5.3 Continuous Improvement

Using cross-functional teams, KEMET establishes and maintains long-term partnerships with strategic suppliers who share KEMET's commitment to continuous quality improvement and demonstrate an ability to make improvements in their processes, products, and services. Team members work directly with the supplier to identify opportunities for improvement in products, processes, and quality systems, and to develop strategies to achieve these goals. These partnerships improve material quality and lower cost of ownership.

KEMET recognizes suppliers who achieve high quality and delivery levels and attain their targeted performance objectives. KEMET also encourages suppliers to benchmark other companies and investigate improved production methods and quality systems.

6 References

6.1 Requirements

Valid together with this Manual– the latest editions/issues of:

- KEMET Purchase Order
- KEMET M-spec (Materials Specification)
- ISO 9001 (*registration* required)
- ISO / TS 16949 (*compliance* required) Web link:<http://www.iaob.org/showPage.php>

AIAG (Automotive Industry Action Group) Reference Manuals

- MDS Material Declaration Sheet
- IMDS International Material Data System
- Web link:<http://www.mdssystem.com/index.jsp>

6.2 Guidelines Standards

- ISO 14001 Environmental Management System

AIAG (Automotive Industry Action Group) Reference Manuals

- QSA, Quality System Assessment
- APQP, Advanced Product Quality Planning and Control Plan
- SPC, Statistical Process Control
- MSA, Measurement Systems Analysis
- PPAP, Production Part Approval Process
- FMEA, Failure Mode and Effects Analysis
- QOS, Quality Operating System Primer
- Web

link:<http://mows.aiag.org/source/Orders/index.cfm?section=orders&activesection=AiagPubs&task=0>

Problem Solving Methodology

- Ford Technical Education Program (FTEP) Global 8D