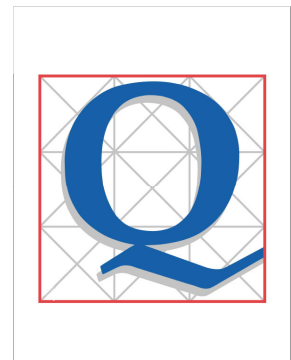




# Supplier Quality Standard

**Working together as a team  
“QUALITY AT THE SOURCE”**

**Compilation by:  
John Farmer, Ph.D.**



## Supplier Quality Standard

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This document is controlled by:

Mayco International, LLC

Edited by

Mayco Supplier Development: Purchasing/Quality Departments

All prior editions are obsolete and should not be used.

**It is the user's responsibility to assure that only the latest revision of this standard is used.**

The latest revision can be obtained on line at:

<http://mayco-mi.com/>



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## QUALITY REQUIREMENTS FOR SUPPLIERS

### 1.0 INTRODUCTION

Mayco International's success is based upon the quality, performance, and economics of our products. The quality of our products depends **on Zero Defects product** purchased from our suppliers. To assure the highest product quality possible, Mayco considers its suppliers as valuable team members.

#### **Overview**

Our commitment to steady, long-term improvement in our products and processes is the cornerstone of our business strategy. Maintaining customer satisfaction and enhancing shareholder value is a mutual goal of both Mayco and its suppliers. To achieve this objective, we must continuously work together to improve the overall efficiency and productivity of our design, manufacturing, administrative, and support organizations.

#### **Quality Policy**

Mayco International's Quality Policy is included in this standard and it is our wish that our suppliers share the same principals as we have committed to:

### ***Quality and Environmental Policy***



Mayco International will conduct all aspects of its business in a responsible manner. This will be achieved in the following statements:

- ◆ Comply with all applicable laws, regulations, standards and other requirements.
- ◆ Adopt a culture of continual improvement to meet or exceed customer requirements and expectations with goals set to confirm achievement.
- ◆ Evaluate our activities and measure our performance against established goals through audits and management review.
- ◆ Advocate the adoption of prudent quality and environmental principles to our vendors, suppliers, and customers. Reduce and eliminate the generation of waste and emissions at the source through pollution prevention efforts during research, process design, and plant operations. Make all efforts to recycle when practical.
- ◆ Communicate our quality and environmental oriented activities to our employees, vendors, suppliers, contractors, customers, environmental agencies, local community, and general public as applicable.

Under observance of the aforementioned, customer satisfaction is the company's main priority: we want to be our customers' preferred supplier.

This Policy is summed up in our quality statement

***"Meeting the needs of our Customers and our Planet"***

**Nick DeMiro**  
**President**

**January 2008**

## Quality System Requirements

Suppliers to Mayco International must meet one of the following minimum quality system requirements:

- ◆ Third party registration to **ISO 9001:2000** by an accredited third party certification body, unless otherwise specified by the customer. If not registered the supplier must be audited annually to conformance to ISO 9001:2000 by the Mayco Quality Department or an approved 2<sup>nd</sup> party entity (NOTE: See section 8 of this Quality Standard).
- ◆ Conformance or registration (preferred and should be the goal of the supplier) to **ISO/TS 16949:2002** unless otherwise specified by the customer.
- ◆ “Specially designated small supplier” established by Mayco, wherein certain specified elements of **ISO 9001:2000** or **ISO/TS 16949:2002** may be waived. “Small” refers to the volume supplied to Mayco.

Copies of **ISO 9001:2000 / ISO/TS 16949 / ISO 14001** certificates shall be submitted to the Mayco Sourcing Team. Acceptance of accreditation(s) shall be communicated to the supplier. Should the status of any accepted accreditation change, (i.e. new certification, de-certification, reassessments, etc.) the supplier shall notify the Mayco Sourcing Team.

### Purpose:

This **Standard** is a supplement providing additional Mayco specific requirements, which suppliers shall follow. This supplement, with the **ISO/TS 16949 Technical Specification**, includes both supplier and Mayco responsibilities. Material supplied to Mayco shall be produced, controlled, inspected, and tested according to the requirements set forth in these documents and other applicable specifications.

## 2.0 DEFINITIONS

- The word '**shall**' indicates a mandatory requirement.
- The word '**should**' indicates a mandatory requirement with some flexibility allowed in compliance methodology. Suppliers choosing other approaches to satisfy a '**should**' must be able to show that their approach meets the intent of **ISO/TS 16949**.
- '**Product**' is defined as any part, product, service, etc. supplied to Mayco for which this standard is applicable.

When referring to this **Standard** and **ISO/TS 16949 Technical Specification** in the development and assessment of Suppliers to Mayco, the following applies:

- Customer = Mayco
- Supplier = Supplier to Mayco - the type and extent of control applied to the supplier and the purchased product/service shall be dependent upon the effect of the purchased product/service on subsequent product realization of the final Mayco product.
- Mayco Sourcing Team = Team of Mayco associates representing Mayco specific departments

### 3.0 DOCUMENTATION

#### 3.1 GENERAL

The supplier shall maintain and conform to the latest revision level of the required or referenced Purchase Order documentation.

#### 3.2 MAYCO SPECIFIC DOCUMENTATION

Mayco specific documentation related to Product conformance may include, but is not limited to the following:

- Parts list, Product structure (bill of materials)
- Blueprints
- Order specifications
- Other supporting specifications/documentation

#### 3.3 REFERENCE DOCUMENTS

The following is a list of **AIAG/ISO/ANSI** documents referenced in this standard:

<u>Manual</u>	<u>Published by</u>	<u>Description</u>
ISO/TS: 16949	IATF	Technical Specification
ISO 9001:2000	ISO	Quality System
APQP	AIAG	Advance Product Quality Planning & Control Plan
FMEA	AIAG	Potential Failure Mode and Effects Analysis
MSA	AIAG	Measurement System Analysis
SPC	AIAG	Fundamental SPC
PPAP	AIAG	Production Part Approval Process
ANSI Y 14.5	ANSI	GD&T
<b>Refer to the latest version</b>		

To obtain information of these documents, contact the following:

<http://www.aiag.org/>  
<http://www.iso.org/>  
<http://www.ansi.org/>

### **3.4 ORIGINAL EQUIPMENT MANUFACTURER (OEM) CUSTOMER REQUIREMENTS**

The supplier shall adhere to referenced OEM Customer requirements as communicated per Mayco documentation. Also refer to: <http://www.iaob.org/> for an outline of OEM Customer requirements.

## **4.0 MAYCO / SUPPLIER INTERFACE**

### **4.1 GENERAL**

The supplier shall communicate through the Mayco Buyer unless otherwise specified. The official business language for all documents referenced in this quality standard shall be English.

Other languages may be used with prior Mayco approval.

Note: The supplier shall communicate any management or ownership changes to the Mayco buyer immediately.

### **4.2 COMMUNICATION**

Communication is the key to any successful partnership. Mayco involves the supplier from product concept through mass production.

### **4.3 PRODUCT VERIFICATION**

Mayco and its customers shall be afforded the right to verify the supplier's products, processes and systems at Mayco or supplier's location(s).

## **5.0 ADVANCED PRODUCT QUALITY PLANNING (APQP)**

### **5.1 GENERAL**

The supplier shall utilize the planning procedures from the **AIAG Advanced Quality Planning and Control Plan (APQP)** manual. All elements of the **APQP** must be incorporated into the planning process, unless waived in writing by the Mayco Sourcing Team. All documents including Process Flow Diagram, PFMEA and Process Control Plans shall include all processes for the manufacturing of components, including incoming inspection, internal transportation, secondary operations, outside services and packaging.

All operations shall be keyed to the Process Flow Diagram, PFMEA and Process Control Plan.

## 5.2. PROJECT MANAGEMENT TIMELINE

The supplier shall develop a Project **Management Timeline** (see Appendix A or equivalent Mayco approved format), which contains (at minimum) program events, target dates and assigned responsibilities. The purpose of the **Timeline** is to assure the timing of programs as defined by the Mayco Sourcing Team.

The **Timeline** shall be maintained at the supplier at all times. Updated copies shall be submitted to the Mayco Sourcing Team as required.

The **Timeline** shall be structured in the following phases:

- Phase I: Design Program/Process Approval
- Phase II: Prototype
- Phase III: Pilot (Pre - Launch)
- Phase IV: SOP (Launch) this should include the MPSO process as detailed in section 7.0

The **Timeline** should be identified by defining:

- Product part number and/or description
- Supplier name
- Originator
- Date and revision level

## 5.3 APQP FOLLOW-UP

The status of the effectiveness and progress of the program should be followed up and documented after each phase. A copy of the **Timeline** shall be submitted to the Mayco Buyer and Supplier Development Representative every two weeks and/or at requested intervals.

## 5.4 NON - PRODUCTION TRIAL SAMPLE MATERIAL

Non - production trial sample (i.e. prototype, R&D samples etc.) shipments shall be identified with the appropriate label (see Appendix D or other Mayco approved form) and shipped separately from production intent material.

## 5.5 SPECIAL CHARACTERISTICS

'**Special Characteristics**' are selected by Mayco with the supplier through knowledge of product and process and are identified by 'SC' and/or customer specific symbols on the drawing, in the specification or other supplemental documentation. The presence of the 'Special Characteristics' is not intended to reduce the importance of other dimensions and /or characteristics selected by the supplier. They shall be included on the PFMEA, Process Control Plan and process instructions unless otherwise agreed upon by the Mayco sourcing team.

## 5.6 CONTROL OF DESIGNATED CHARACTERISTICS

Items specified as 'Special Characteristics' require manufacturing control to assure compliance. The control data shall be documented and retained at the supplier's facility and shall be available for submission and/or review by the Mayco Supplier Quality Engineer.

Unless otherwise specified, refer to the latest version of the AIAG PPAP manual for capability levels on designated characteristics at time of PPAP and serial production.

## 5.7 SAFETY ITEMS (inverted delta, shield, diamond, etc.)

Mayco International and its customers identify Safety items on the blueprints utilizing symbols such as an inverted delta (Ford), a shield or diamond (Chrysler), or other industry recognized symbols. When indicated, the supplier shall also treat these characteristics as safety items.

## 6.0 MAYCO PROCESS SIGN-OFF (MPSO)

### 6.1 GENERAL

The **Mayco Process Sign-Off (MPSO)** is a review of the supplier's manufacturing process at a demonstrated line production rate. Its purpose is to verify the supplier production process readiness and assure complete understanding of program requirements. The **MPSO** shall be performed as directed by the Mayco Sourcing Team.

### 6.2 MAYCO PROCESS SIGN-OFF FRAMEWORK

The **MPSO** process shall be conducted utilizing the framework of the **MPSO Checklist** (see Appendix B or other Mayco approved form). In lieu of the **MPSO** format, customer specified documents are acceptable.

### 6.3 REVIEW OF SUPPLIER PROGRAM STATUS

The first step of the **MPSO** process is to schedule a review meeting with the supplier and the Mayco Sourcing Team for explanation of the **MPSO** (corresponding checklist & Questionnaire) and what is expected from the supplier to successfully meet the requirements.

### 6.4 REVIEW OF SUPPLIER DOCUMENTATION

**MPSO** documentation shall provide enough evidence of each of the **MPSO** criteria (Appendix B or other Mayco approved form). The documentation shall be

reviewed prior to or during the **MPSO** as directed by the Mayco Sourcing Team (All documentation shall be readily available). The results of the review shall be noted in the 'Process' columns on the **MPSO Checklist** (or other Mayco approved form).

## **6.5 REVIEW OF SUPPLIER MANUFACTURING PROCESS**

The Mayco Sourcing Team shall perform a **MPSO** on site at supplier's manufacturing facility as deemed necessary. The review shall consist of detailed observation and validation of the supplier's manufacturing process capabilities and corresponding documentation. The results of the **MPSO** shall be documented on the **MPSO Checklist** (See Appendix B or other Mayco approved form).

## **6.6 MAYCO PROCESS SIGN-OFF**

The **MPSO** sign off takes place during PV (Production Validation) build or as deemed necessary by the Mayco Sourcing Team. Acceptable completion of the **MPSO** authorizes the supplier to proceed with the **PPAP** submission. If any non-acceptances are noted, then the **MPSO** remains open. Corresponding corrective action shall be submitted by the supplier and validated through a re-visit and/or re-evaluation by the Sourcing Team for **MPSO** closure.

### **Note:**

**Once a **MPSO** has been approved, changes to the supplier's production process cannot be implemented without prior Mayco Sourcing Team approval. The **SREA (Supplier Request for Engineering Approval) (Appendix E) Form** shall be submitted for approval to the Mayco Sourcing Team, if the supplier wants to implement process changes.**

## **7.0 PRODUCTION PART APPROVAL PROCESS (PPAP)**

### **7.1 GENERAL**

The supplier shall submit an initial sample report in accordance with the **AIAG PRODUCTION PART APPROVAL PROCESS (PPAP)** manual unless otherwise specified by the Mayco Supplier Quality Engineer Representative.

### **7.2 SUBMISSION REQUIREMENTS**

The supplier shall submit specific **PPAP** requirements in accordance with the latest revision of the **AIAG PPAP Manual**.

### **7.3 SUBMISSION LEVEL REQUIREMENTS**

The supplier shall submit **PPAP's** to the level requirements as stated in the latest revision of the **AIAG PPAP Manual**. The submission level shall use level 3 as

the default for all submissions unless specified otherwise by the supplier Quality Engineer.

Mayco specific requirements related to the **PPAP** include the following:

### 7.3.1 MATERIAL SAMPLE QUANTITY

Standard sample quantity for dimensional evaluation shall be **one** (1) product (per cavity, die, progressive die, etc. if applicable) unless otherwise specified.

### 7.3.2 STATISTICAL DATA

Supporting statistical data (i.e. SPC, process capability studies, etc.) for a **PPAP** submission should be assimilated from the **MPSO** or from a 'significant material production run'; defined as at least 300 completed products.

### 7.3.3 MEASUREMENT RESULTS CORRELATION

All samples shall be sequentially numbered and correlated to the dimensional reports. Blueprints should be numbered in accordance with the latest revision of **ANSI Y 14.5** standards. All results shall be taken from master samples and these samples shall be submitted with the PPAP. Measurement method agreement, if defined, shall be attached to the supplier dimensional evaluation report.

### 7.3.4 PACKAGING AND LABELING REQUIREMENTS

The supplier is responsible to assure that only approved packaging is used. For this purpose the supplier shall comply with the packaging requirements as indicated on the purchase order or related document. Failure to conform to this requirement could result in a MPSO or PPAP rejection.

### 7.3.5 IMDS SUBMISSION

No PPAP will be fully approved by Mayco without acceptance and verification of IMDS approval (Industrial Material Data System <http://mdsystem.com/>).

Supplier PPAP packages must contain a copy of the acceptance screenshot from the IMDS.

**Note: Before any PPAP submission, deviations from these requirements shall be agreed upon between the supplier and the Mayco Sourcing Team.**



## 7.4 IDENTIFICATION

All samples accompanying PPAP submissions shall be identified with the appropriate label, (see example in Appendix C or other Mayco approved label), on the carton or container. The label shall contain all required information and shipped separately from production material.

## 7.5 FIRST PRODUCTION SHIPMENT AUTHORIZATION

The supplier shall ship production intent material to Mayco only if:

1. The **Mayco Process Sign-off (MPSO)**, if applicable, is completed and accepted by the Mayco Sourcing Team.
2. The **PPAP** submission has been approved in writing by the Mayco Supplier Quality Representative and the supplier has received written notification of the approval.

**Note: The supplier shall not ship production intent material without prior PPAP approval by the Mayco Supplier Quality Representative.**

## 7.6 ANNUAL PPAP RE-CERTIFICATION

An annual material re-certification (once per calendar year) of the supplied material shall be performed by the supplier unless otherwise specified by the Mayco Sourcing team. Questions regarding the re-certification should be directed to the respective Mayco Supplier Quality Representative. The results of the re-certification shall be documented and maintained at the Supplier's site. These shall be available upon request.

## 8.0 AUDITS/SUPPLIER ASSESSMENTS

### 8.1 GENERAL

The supplier is required to perform three types of audits: Quality Management System, Process audit, and product audit. The Mayco Supplier Quality Development Representative (Sourcing Team Representatives) shall perform audits of the supplier's quality/manufacturing process and Quality Management system as deemed necessary.

### 8.2 AUDIT CONDITIONS

Conditions, which warrant audits, may include the following:

- Supplier Approval (not ISO 9001 or ISO/TS 16949 registered)
- Quality issues
- Engineering changes
- Process changes
- Plant location changes (e.g. Tool transfer) which also requires a new **MPSO** and **PPAP** submission

### 8.3 AUDIT CRITERIA

The criteria for these audits focus on **MPSO** items. However, other criteria may be utilized. The Mayco Supplier Quality Representative shall determine the appropriate criteria and communicate this information to the supplier's Quality/Sales Department.

### 8.4 ASSESSMENT OF SUPPLIERS AND POTENTIAL SUPPLIERS

Suppliers to Mayco need to reference the latest edition of **ISO/TS16949**. The goal of supplier is conformity with this technical specification. Conformity with ISO 9001:2000 demonstrated by an accredited third party certification/registration body or through a second party audit process is the first step in achieving this goal.

- ◆ Mayco's second party audit process shall be consistent with the automotive process approach, including evidence of planning, supplier readiness and supplier performance. In addition, the second party process shall be defined according to the principles detailed in ISO 19011:2000 regarding the management of the audit program, the audit activities and the competence of the auditors.
- ◆ After the initial audit, second party surveillance audits shall be conducted at least annually. When deemed necessary, (i.e. quality issues, engineering changes, certification, etc.), a re-assessment of the supplier's quality system may be conducted by the Mayco Sourcing Team.
- ◆ Potential suppliers may be requested to conduct a self-assessment (Appendix H) of their quality system to determine eligibility. The Mayco Sourcing Team shall determine eligibility after analysis of the self-assessment. Results of the Checklist shall be documented and communicated to the supplier by the Mayco Sourcing Team.
- ◆ NOTE: A supplier may be classified as a "specially designated small supplier", wherein certain specified elements of **ISO 9001:2000** or **ISO/TS 16949:2002** may be waived. Suppliers classified as "small" will notified by the Mayco Sourcing Team as to what requirements they are accountable. "Small" refers to the volume supplied to Mayco.

### 8.5 Special Process Assessments - Heat Treating, Plating & Coatings

Clause 8.2.2.2 of ISO/TS 16949:2002 requires that the supplier/organization shall audit each manufacturing process to determine its effectiveness. Suppliers supplying the services of heat treating, plating, and/or coatings shall meet the requirements of the following:

### 8.5.1 Heat Treating Processes

Applicability and effectiveness of heat treating processes shall be determined utilizing *CQI-9 Special Process: Heat Treat System Assessment* published by the AIAG. The effectiveness evaluation shall include the organization's self-assessment, actions taken, and that records are maintained.

This requirement shall also apply to heat treat suppliers to the organization pursuant to Clause 7.4.1.2 (supplier development clause). For Mayco, all suppliers heat treating components shall comply with CQI-9.

*CQI-9 2nd Edition Special Process: Heat Treat System Assessment* is published by AIAG and is available at [www.AIAG.org](http://www.AIAG.org).

**Note 1:** 2nd Party assessment by a competent auditor and meeting the above requirements will satisfy the self-assessment requirement.

**Note 2:** Implementation effectiveness should be based on evidence that the organization has a process in place that includes elements such as auditors identified, schedule for self-assessment in place including schedule adherence, supplier development process identified for applicable suppliers, monitoring of progress, defined corrective action process and record-keeping.

### 8.5.2 Plating Processes

Applicability and effectiveness of plating processes shall be determined utilizing *CQI-11 Special Process: Plating System Assessment* published by the AIAG and available at [www.AIAG.org](http://www.AIAG.org). The effectiveness evaluation shall include the organization's self assessment, actions taken, and that records are maintained.

This requirement shall also apply to plating suppliers to the organization pursuant to Clause 7.4.1.2 (supplier development clause). For Mayco, all suppliers plating components shall comply with CQI-11.

**Note 1:** 2nd Party assessment by a competent auditor and meeting the above requirements will satisfy the self-assessment requirement.

**Note 2:** Implementation effectiveness should be based on evidence that the organization has a process in place that includes elements such as

auditors identified, schedule for self-assessment in place including schedule adherence, supplier development process identified for applicable suppliers, monitoring of progress, defined corrective action process and record-keeping.

### **8.5.3 Coating Processes**

Applicability and effectiveness of coating processes shall be determined utilizing *CQI-12 Special Process: Coating System Assessment* published by the AIAG and available at [www.AIAG.org](http://www.AIAG.org). The effectiveness evaluation shall include the organization's self assessment, actions taken, and that records are maintained.

This requirement shall also apply to coating suppliers to the organization pursuant to Clause 7.4.1.2 (supplier development clause). For Mayco, all suppliers coating components shall comply with CQI-12.

**Note 1:** 2nd Party assessment by a competent auditor and meeting the above requirements will satisfy the self-assessment requirement.

**Note 2:** Implementation effectiveness should be based on evidence that the organization has a process in place that includes elements such as auditors identified, schedule for self-assessment in place including schedule adherence, supplier development process identified for applicable suppliers, monitoring of progress, defined corrective action process and record-keeping.

## **9.0 QUALITY DATA SUBMISSIONS**

The supplier may be required to submit Quality Data (i.e. SPC charts, process monitoring results, material certifications, preventative & predictive maintenance data, etc.) upon request, to the Mayco Sourcing Team. Original documentation shall be retained at the supplier.

## **10.0 SPECIFICATION / REQUIREMENT CHANGE / CONCESSION REQUESTS**

### **10.1 GENERAL**

Requests for changes or concessions (temporary or permanent) to specifications or requirements shall be documented. Approval shall be made through the Mayco Sourcing Team.

## 10.2 CONCESSIONS

Concessions are time or quantity limited deviations from specifications. These concessions shall be temporary and are not considered permanent. All concession parts are to be labeled with a description of the concession. Prior to shipment, supplier must notify the responsible Supplier Quality Engineer (SQE) of concession shipment.

## 10.3 PERMANENT CHANGES

Permanent changes, either Supplier or Mayco initiated, shall be appropriately documented. These changes shall require a new **PPAP** submission as specified by the Mayco Sourcing Team (if not specified, submissions shall default to the Level 3).

### 10.3.1 SUPPLIER REQUEST FOR ENGINEERING APPROVAL (S.R.E.A.)

Supplier initiated change requests shall be submitted to Mayco utilizing the S.R.E.A. form (see Appendix E). This form and all supporting documentation shall be submitted to the Mayco Purchasing Department. **The supplier shall make no changes until Mayco approval has been granted.**

### 10.3.2 MAYCO INITIATED ENGINEERING CHANGES

Mayco initiated engineering changes, including all PPAP requirements, shall be communicated to the supplier by the Mayco Sourcing Team.

### 10.3.3 GENERAL CHANGE REQUIREMENTS

General changes (i.e. flow charts, control charts, etc.) shall be requested through the applicable Mayco Sourcing Team Representative.

**Note: No change to material shall be implemented until all proper authorization has been obtained. This includes PPAP submission requirements as specified by the appropriate Mayco Supplier Quality Representative.**

## 11.0 NONCONFORMANCE, CORRECTIVE AND PREVENTIVE ACTIONS

### 11.1 REQUIREMENTS

When Mayco has notified the supplier of a 'Nonconformance' issue with material, the supplier is responsible for:

### 11.1.1 Initial Containment

This containment action shall be:

- ◆ Implemented within **24 hours** (1 calendar day including weekends and holidays) of notification by Mayco personnel. (All verbal notifications by Mayco shall be followed up with written documentation).
- ◆ Containment actions shall include all affected material in the supplier's control, in transit to Mayco, in the possession of Mayco, or finished product shipped to Mayco customers.
- ◆ The supplier shall notify the Logistics Department of material availability.
- ◆ The supplier shall notify the Supplier Quality Representative of their containment actions and to discuss coordination of containment of material at Mayco and Mayco customers.

### 11.1.2 Certified Shipments

All shipments of affected material shall be 'certified' (i.e. in compliance with the containment actions) until corrective action issues are formally closed by a Mayco Supplier Quality Representative.

All material shall be shipped per approved methods and identified with the appropriate label (See Appendix D). Mayco may require individual component identification.

### 11.1.3 Initial Response

A written initial response shall be submitted to the Mayco Quality Department within **48 hours** (or otherwise specified time frame) of formal notification of the concern. This initial response shall, at minimum, contain:

- Mayco Concern Number and Date of Nonconformance
- Name of the Mayco Supplier Quality Representative
- Problem Description
- Containment action description
- Containment action verification (quantitative results)
- Certified material shipment dates and identification
- Root Cause analysis status

**NOTE: Each of the above stated criteria shall contain an implementation date and assigned responsibility.**

#### 11.1.4 Formal Corrective Action Report

A Formal Corrective Action Report **shall be** submitted to the Mayco Supplier Quality Department within **10 working days** (or otherwise specified time frame) of formal notification of the concern. (See Appendix F)

#### 11.1.5 Documentation

FMEAs, Control Plans and other appropriate documentation shall be revised to reflect changes resulting from the concern. These documents shall be maintained on file and provided to Mayco Supplier Quality Representative for review as required.

#### 11.1.6 Action/Timing Plans

Mayco expects that process and system corrective actions to be implemented within **30 days** of notification. Mayco will expect that the corrective actions will be validated within **90 days** and closed within **120 days**. If additional time is required for resolution of corrective actions, a written action/timing plan shall be submitted to the Mayco Supplier Quality Representative for approval.

#### 11.1.7 Supplier Containment Level Procedures

If supplier containment actions are not effective, progressive Mayco initiated procedures shall be implemented for the supplier. The Mayco Supplier Quality Representative will define exit criteria. Any reoccurrence will result in the 30-day inspection period to start over. The inspection period begins once root cause has been identified and corrective actions are in place.

- ◆ **Controlled shipping level 1 (CS1)** - The supplier shall implement 100% inspection for a period not less than 30 days with no re-occurrence of the issue.
- ◆ **Controlled shipping level 2 (CS2)** - A containment process under customer control. Containment conducted at customer site, supplier, or third party location at the supplier's expense. This process may be used if Level 1 containment is ineffective at containing a nonconformance. The supplier shall implement 200% inspection for a period not less than 30 days with no re-occurrence of the issue.

### 11.2 CORRECTIVE ACTION REPORT: 8D Report

A written corrective action 8D report (see 8D form in appendix F) with implementation/effective dates and assigned responsibilities shall contain, at a minimum, the items listed below:

- Description of the concern and Mayco Concern Number
- Containment action
- Root Cause of the concern with verification
- Corrective action
- Verification of containment and corrective action. This is a measure of the action's effectiveness utilizing appropriate statistical or process performance analysis methods.
- Preventive measures for 'Lessons Learned' and applicable to similar products and processes.
- Preventive actions assess the applicability of the action taken to similar processes. These are actions with a proactive and predictive intention with the focus on avoiding occurrences.
- Verify Process Flow Diagrams, PFMEAs and Process Control Plans have been updated

**Note: Changes to the product and/or the product documentation (i.e. drawings, specifications, Control Plans, PFMEAs, Flow charts, Bill of Material's, etc) due to corrective action implementation shall be documented through revision levels/dates. Change in revision levels / dates may require PPAP submission. Contact the Mayco Supplier Quality Representative for required PPAP submission levels/dates. Supportive documentation (i.e. laboratory analysis, statistical results, etc.) may be requested by the Mayco Supplier Quality Representative.**

## **12.0 SUPPLIER QUALITY PERFORMANCE**

### **12.1 GENERAL**

The Mayco Sourcing Team, in regards to their ongoing quality performance, shall assess the supplier.

### **12.2 CRITERIA**

Criteria for assessments may include, but not limited to, the following:

- **PPM** (parts per million defective)
- **DELIVERY** (100% on time delivery)
- **PRICE** (price reductions, suggestive cost reductions)

### **12.3 PERFORMANCE RESULTS**

Results of the quality performance assessments shall be documented by the Mayco Supplier Quality Department and communicated to the supplier.



The results of the assessments shall be communicated by the supplier to their management.

#### **12.4 CORRECTIVE ACTIONS FOR PERFORMANCE RESULTS**

Performance assessments deemed unacceptable by the Mayco Supplier Quality Representative shall require corrective actions by the supplier. These corrective actions shall be submitted to and approved by the Respective Mayco Supplier Quality Representative.

#### **13.0 STATISTICAL TECHNIQUES**

The supplier shall monitor process performance utilizing the appropriate statistical techniques (i.e. First time yield, SPC, etc.) in accordance with the **AIAG Statistical Process Control manual**.

Additional areas in which statistical techniques may be applied are as follows:

- Predictive maintenance programs
- Gage R&R studies
- Defect analysis
- Continual Improvement Processes

The results of the statistical techniques shall be documented and retained at the supplier's location. This information shall be made available upon request to the Mayco Sourcing Team.

#### **14.0 ANALYTICAL TECHNIQUES**

The supplier should utilize analytical techniques to improve their process capabilities and problem resolution.

Examples of analytical techniques are as follows:

- Design of Experiment (DOE)
- Theory of Constraints
- Benchmarking
- Hoshin Planning
- Shainin

The results of analytical techniques should be documented and retained at the supplier's location. This information shall be made available upon request to the Mayco Sourcing Team.

#### **15.0 MEASUREMENT SYSTEM ANALYSIS (MSA)**



The supplier shall perform measurement system analysis (frequency to be determined by the supplier) in accordance with the **AIAG Measurement System (MSA)** manual. With approval by the Mayco Supplier Quality Representative, other analytical methods and acceptance criteria may be implemented. Results of **MSA** analysis shall be documented and retained at the supplier's location. This information shall be available upon request to the Mayco Sourcing Team.

## **16.0 ERROR PROOFING**

The supplier shall utilize error proofing in accordance with the **ISO/TS 16949 Quality Systems Requirements** manual. Results of error proofing shall be documented and retained at the supplier's location. This information shall be made available upon request to the Mayco Sourcing Team.

## **17.0 PREVENTIVE / PREDICTIVE MAINTENANCE**

The supplier shall implement a preventive / predictive maintenance program for process Machine/equipment as outlined (at a minimum) in the **ISO/ TS16949** manual. Statistical data should be assimilated and systems developed for the implementation of predictive maintenance programs. The supplier shall document and maintain this program and it shall be available upon request to the Mayco Sourcing Team.

## **18.0 CONTINUAL IMPROVEMENT PROCESS (CIP)**

The supplier shall implement continual improvement efforts throughout their entire supplier as stated in the **ISO/TS 16949 standard**. Results of the **Continual Improvement Process** shall be documented and retained at the supplier's location. This information shall be made available upon request to the Mayco Sourcing Team.



# APPENDIX