



**Supplier
Requirements
Manual**

April, 2005

Federal-Mogul Supply Chain Vision

"Be the benchmark global Supply Chain organization within our Industry as recognized by our Customers, Operations, and Suppliers. We are a center-led organization which adds value through innovation, quality, delivery performance, and cost reduction."

Gifts, Entertainment & Gratuities

Both as a matter of sound procurement practice and basic business integrity, we at Federal-Mogul must make our purchase decisions solely on the basis of which suppliers offer the best value for the goods and services we need. We avoid doing anything that suggests that our purchase decision may be influenced by any irrelevant or improper consideration whether illegal, such as a kickback or bribe, or technically legal, such as personal friendship, favors, gifts or free entertainment.

Business with suppliers and customers should always be conducted in an atmosphere of mutual respect and in keeping with irreproachable standards of business and professional ethics. The giving and/or receipt of gifts (including the use of property) may raise questions of propriety concerning the relationship between the give and receiver of the gift. Accordingly, and excepting only non-cash gifts of insignificant value (under \$25.00 USD), no employee or member of the employee's family may accept a gift from any supplier of goods or services to Federal-Mogul or from any customer of Federal-Mogul, without prior disclosure to the Plant Manager or appropriate management. Notwithstanding the disclosure requirement, no employee or family members may receive a cash equivalent from any supplier or customer. Employees should in no way benefit financially due to transactions between Federal-Mogul and any third party with or without prior approval from the Plant Manager or appropriate management.

Entertainment provided or funded by Federal-Mogul suppliers or customers for Federal-Mogul employees or members of their families must be reasonably related to the business at hand and must not be so lavish as to give rise to even the impression that special influence is being sought. All offers of unreasonable lavish entertainment, and all questions relating to the propriety of entertainment, should be directed to the Plant Manager or appropriate management.

Inevitably, there will be gray areas that our employees will address using their common sense and good judgment. This policy is based upon the NAPM (National Association of Purchasing Management) "Principles & Standards of Purchasing Practice" guidelines.

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April, 2005
Federal-Mogul Corporation

Introduction

Realizing that communication and cooperation are key elements in maintaining high quality standards, this manual has been developed as a guide for aiding suppliers to understand Federal-Mogul requirements. The Supplier Requirements Manual outlines the minimum practices that must be effectively implemented at your facility. By outlining common global policies, Federal-Mogul hopes to simplify procedures for suppliers.

The Supplier Requirements Manual applies to all suppliers to Distribution Centers, internal and external suppliers of production materials, production or service parts, and manufacturers of machinery or any component thereof. Machinery consists of tooling and equipment to perform such processes as assembly, plating, machining, casting, stamping, measuring, molding, forming, packaging, gauging, welding, painting/coating, or other related manufacturing technologies.

Increasing quality and delivery expectations, on time delivery, cost reduction pressures from auto-makers, and globalization of markets are putting tremendous pressures on our business to identify new ways to deliver high quality products and systems and to continually improve on our processes.

It is Federal-Mogul's mission to supply our customer with zero defects, supply them this product globally and at the lowest total cost. The goal is simple – be the benchmark supplier in every market we participate. This goal can only be achieved with the support and commitment of you, our supplier. Clear and concise expectations and requirements should make the supplier-customer relationship more productive.

Quality Systems

Federal-Mogul Quality Policy

It is Federal-Mogul's objective to be recognized as a World-Class supplier of automotive components, modules, and systems serving the world's original equipment manufacturers and the aftermarket. To achieve this we are committed to:

◆ **Customer Satisfaction**

Providing our customers with products and services that meet or exceed their requirements.

◆ **Continual Improvement**

Measurable improvement of the effectiveness of our quality management system.

◆ **Employees**

Providing training to employees to promote Continual Improvement. Empowering our employees to use their skills and talents to achieve the quality policy and business plan objectives.

◆ **Management System**

Maintaining a management system compliant to ISO/TS 16949:2002, ISO 9001:2000, and ISO 14001:1996. Reviewing our management system on continual basis for robustness. Setting and reviewing quality objectives to meet our business goals.

◆ **Environment**

Maintaining operations that protect the environment and natural resources of our communities, our states, and our nations.

◆ **Safety**

Providing a safe work environment for our employees and visitors.

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As a global manufacturer of automotive components and sub-systems to original equipment manufactures and the aftermarket, Federal-Mogul must meet the requirements set forth by the ISO/TS 16949:2002 Quality System. This system is based on the process approach of ISO 9001:2000. We will meet these requirements by January 1, 2005. The first step toward this goal is ensuring that all Federal-Mogul suppliers are registered to a minimum of ISO 9001:2000 by December 31, 2005.

Certification to a minimum of **ISO 9001:2000** and compliance to the Supplier Requirements Manual is mandatory.

Potential new suppliers are required to complete a Federal-Mogul Supplier Profile and provide a copy of their quality and/or environmental management certificates such as

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ISO 9001:2000, ISO/TS16949 or ISO 14001 to Corporate Supplier Quality. In addition, new suppliers to Federal-Mogul will be required to undergo an Initial Supplier Qualification Assessment. The goal is to better understand the capabilities and systems of each supplier. This information will assist Federal-Mogul in determining each supplier's ability to provide quality products and services necessary to remain an industry leader.

Suppliers are fully responsible for the quality of their products, and for assuring their products and/or materials function properly as part of a system or assembly. Federal-Mogul reserves the right to have product tested by an accredited third party laboratory at any time.

All materials used in part manufacture shall satisfy current governmental and Federal-Mogul constraints on restricted, toxic and hazardous materials (including the Federal-Mogul's Restricted Substances Standard); along with environmental, electrical and electromagnetic considerations applicable to the country of manufacture and/or sale. Supplier shall have a process to assure that constraints on restricted, toxic and hazardous substances are complied with relative to purchased products and the manufacturing process.

Suppliers are required to include copy of the Material Safety Data Sheet (or legal equivalent outside of the United States) with the shipping documents accompanying with their initial shipment and with the first shipment after any of the said documents is updated. These documents must be provided in the predominant language(s) spoken in the countries where storage and transportation occurs.

Statistical Process Control (SPC) must be an integral part of the supplier's process to provide the necessary information for continual improvement in quality, productivity and cost reduction through variation reduction.

Schedule & Delivery

Federal-Mogul requires **100% on-time delivery performance** from all its suppliers and sub-contractors. It is the responsibility of the supplier to notify the affected Federal-Mogul facility of all possible delivery delays. Suppliers that ship to Distribution Centers must provide Advanced Shipping Notification (ASN's)

Federal-Mogul requires notification of the shipment of suspect material. Suppliers are to notify the Supplier Quality organization at the receiving Federal-Mogul facility.

The ordering Federal-Mogul plant defines packaging and labeling requirements. The supplier must ensure satisfactory protection against damage, contamination, and corrosion during shipment. Suppliers are encouraged to consider using returnable containers, where possible, and to provide internal separation/lining, if necessary, to maintain cleanliness, integrity, and appearance requirements.

Federal-Mogul owned returnable packaging that is lost, damaged, or otherwise unsuitable for use shall be reported to the Materials organization of the Federal-Mogul location which provides the returnable packaging

The supplier shall establish and maintain documented procedures for identifying the product by suitable means from receipt and during all stages of production, delivery and installation.

In order to avoid premium freight charges, suppliers are required to utilize cartage companies Federal-Mogul has approved. The appropriate Federal-Mogul personnel must authorize all proposed shipping deviations and/or changes. Where extra charges or costs are incurred that exceed the norm (e.g. existing cartage contracts) the supplier shall track and keep good record of such premium "freight costs". These may be resultant of such events as poor scheduling, quality, or production inefficiencies. The need for premium freight could be caused by the customer, Federal- Mogul or the supplier.

Zero Defects

Suppliers are required to accept 'Zero Defects' as a target, and have action plans in place to continually reduce PPM defective levels in line with the Federal Mogul's mission to supply our customers with zero defects.

Performance Measurement Criteria

To be effective, Federal-Mogul must build relationships with suppliers who can consistently meet our needs; we must give preference in source selection to suppliers who help us minimize waste.

The Federal-Mogul Global Supplier Score Card utilizes composite measures, which cover various aspects of supplier performance. It provides an on-going way to evaluate suppliers' quality, delivery and cost reduction initiatives. The purpose of the Supplier Score Card is:

- To recognize exceptional supplier performance
- To promote & encourage improved communication on performance issues
- To provide objective data for use in supplier management & sourcing decisions
- To identify continual improvement opportunities

Supplier quality and delivery performances are monitored regularly by Federal-Mogul manufacturing facilities. Corporate Supplier Quality summarizes the data provided by the manufacturing facilities and issues the Supplier Score Card monthly, both internally and externally.

Supplier ratings are assigned based on the Supplier Score Card Overall Rating. Annual supplier awards are issued to suppliers achieving prescribed targets, and corrective action is requested when unacceptable performance exists. Persistent poor performance or recurrence of the same issues may be cause for supplier development activities or for purchasing to resource a product.

Program Planning

Process parameters and product characteristics shall be managed to ensure that the initial process capability is $Ppk \geq 1.67$ and then on-going process control shall be maintained. On-going process control is demonstrated by the application of control charts or other statistical methods that demonstrate the process has not changed.

- ▲ Control Characteristic: A Control Characteristic is a product characteristic that may affect the form, fit, and/or function of the product and that require managing its variation within the specified tolerances.

- § Safety Characteristic: A Safety/Regulatory Characteristic is a product characteristic that the customer or Federal-Mogul Corporation has determined is impacted by that safety, environmental or other regulatory compliance requirements.

These symbols shall be used on all appropriate documentation, unless a customer requires the use of specific customer symbols. Federal-Mogul drawings issued prior to 06/27/2000, which use other symbols, are acceptable for continued use. However, future drawings shall use the symbols above.

Every supplier of production material is required to complete a Level 3 Production Part Approval Process (PPAP) submission for each part or material prior to initial shipment, unless instructed otherwise by Federal-Mogul. If requested, suppliers will provide a Layout drawing/sales print for receiving inspection purposes.

Change Notification

All proposed design changes or modifications, whether permanent or temporary and including proprietary designs, must be reviewed, approved and authorized in writing by the Federal-Mogul Plant Quality Manager or his designee.

The supplier or sub-suppliers shall not make any changes in part design, material, or manufacturing process without prior written Federal-Mogul authorization. A new PPAP submission may be required.

In circumstances where a supplier wishes to change manufacturing location(s), the supplier or sub supplier must also obtain prior written authorization from Federal-Mogul, and the new manufacturing location shall be qualified, (An Initial Assessment will be conducted) and material/part validation and a new PPAP submission shall be required.

Under no circumstances can verbal requests be accommodated!

Request for change **shall** contain the following minimum information:-

Permanent Change: Must include detailed information of the required change, its proposed timing, and the reason for change, e.g. Continuous Improvement.

Temporary Change: Where component or material deviates from the F-M specification, but is considered on a temporary basis "fit for purpose" both functionally and/or cosmetically. Such temporary written Change Requests as a minimum, shall include:

- The quantity or period of time the components or material are thus affected.
- The potential root cause for the out-of-specification condition.
- The containment detail and F-M SCAR reference number. (Refer to F-M Tips under **Corrective Action** below.
- The Batch or Lot number as appropriate.



Corrective Action

Response to nonconforming product requires corrective and preventive action. All root cause analysis activities shall be conducted using the Federal-Mogul-Techniques In Problem Solving (FM-TIPS) Corrective Action methodology as outlined in the Supplier Corrective Action Request (SCAR) database. The process will flow as follows:

FM-TIPS

1. **Use Team Approach:** Establish a small group of people, with the process/product knowledge, allocated time, authority, and skill in the required technical disciplines to solve the problem and implement corrective actions. The group must have a designated champion.
2. **Describe the Problem:** Specify the internal/external customer problem by identifying in quantifiable terms who, what, when, where, why, how, and how many (5W2H) of the problem.
3. **Implement and validate Interim Containment Actions:** Define and implement containment actions to isolate the problem from any internal/external customer until permanent corrective action is available. Verify the effectiveness of the action.
4. **Define Root Cause(s):** Identify ALL potential causes - The FM-TIPS process requires the team to identify ALL the potential root causes BEFORE selecting and acting on the real root causes.
5. **Choose Real Root Cause and Permanent Corrective Actions:** Review ALL root causes identified and either ACCEPT or REJECT each, maintain documentation on decisions. Identify permanent corrective action for EACH root cause accepted. Through pre-production test programs quantitatively confirm that the selected corrective actions will resolve the problem for the customer and will not cause undesirable side effects. Define contingency actions, if necessary based on risk assessments.
6. **Implement Permanent Corrective Actions:** Implement the best permanent corrective actions. Choose on-going controls to ensure the root cause is eliminated. Once in production, monitor the long-term effects and implement contingency actions, if necessary.
7. **System Prevention:** Identify what management systems, if in place, would have prevented this problem. Modify the management systems, operating systems, practices, and procedures to prevent recurrence of this and all similar problems and provide copies of updates to the customer. Apply this solution to similar processes within the organization.
8. **Congratulate Your Team:** Recognize the collective efforts of the team.

The supplier has financial responsibility for nonconforming materials and their effects, which may include warranty issues and/or cost recoveries for sorting, re-work, scrap, premium transportation, etc.

The supplier Corrective Action (SCAR) application enables interactive communication and documentation of Corrective Actions with the supplier.

The SCAR database is used as a communication tool to notify suppliers of nonconformance and track their resolution.

On-Site Contractor Services

All contractors working in or on Federal-Mogul premises are responsible for themselves, their employees and any sub-contractors employed by them for the following:

- Complying with all legal or Federal-Mogul EHS requirements
- Complying with all health, safety, fire security and site instruction requirements
- Ensuring that all equipment brought onto the site, including any borrowed or hired, is safe and only used in accordance with legal requirements.
- Indemnifying the company against any and all loss, injury, damage or claim which may arise directly or indirectly as a result of any EHS acts or omissions on the part of the contractor. The contractor must prove adequate insurance covering this liability.
- Reporting all accidents and occurrences, as required by law, to the EHS Coordinator and Site Manager employing their services, and any other such accidents or occurrences that pose a hazard to Federal-Mogul employees and/or property.
- Reporting any unsafe act or conditions that may affect the ability to meet the contract.
- Wearing appropriate safety equipment on-site
- Notifying Federal-Mogul personnel of any chemicals to be brought on-site and disposition of any waste generated

Continual Improvement

In response to customer demands for year over year cost reductions, Federal-Mogul has been forced to reduce price by up to 5% every year to retain current business and gain future business. Federal-Mogul needs your efforts and help in obtaining cost reductions along with your continued commitment to year over year cost improvement.

SCSS (Supplier Cost Saving Suggestion) is a proactive cost reduction proposal mechanism that allows suppliers to be awarded credit for cost saving ideas based on feasibility and implementation. It is an approach designed to identify process cost “drivers”, and to implement simple, common sense process changes, to reduce overall cost. SCSS is also a means for advertising and giving credit to those suppliers who reduce price through commercial considerations. Areas of SCSS focus include:

- *Payment Terms*
- *Year-over-year Price Reductions*
- *Consignment Inventory Programs*
- *Negotiated Supply Agreements*
- *Design Simplification*
- *Process Improvement*
- *Alternative Materials*
- *New Technologies*
- *Packaging*
- *Product Weight Reduction*
- *Material Content/Utilization*
- *Scrap Reduction*
- *Inventory/Lead Time Reduction*
- *Complexity Reduction/Part Consolidation*
- *Improved Sub-supplier Sourcing*
- *Optimization of Manufacturing Location*
- *Market Competition*
- *Freight/FOB Changes*
- *Multiple Sourcing*
- *Federal-Mogul/Supplier Business Practices*

To submit a SCSS proposal, enter a SCSS Cost Reduction Proposal within the SupplyNet database, and submit it electronically. Half credit will be given if a proposal is deemed feasible, with full credit upon implementation.


Credit toward SCSS is awarded as follows:

1. Part Consolidation: \$1,000/part number eliminated
2. Lead Time Reduction: Time supply in dollars based on current lead time minus time supply in dollars based on new lead time
3. Consignment Inventory Program: Time supply in dollars based on current lead time minus time supply in dollars based on three days supply
4. Direct Credit for the following reductions:
 - Design simplification
 - Transportation savings
 - Packaging savings
 - All other tangible proposals

Suppliers are expected to accumulate 5% annually in value propositions, based on purchase dollars.

Glossary

Acceptance Criteria:	Specified limits placed on characteristics of an item, process, or service defined in codes, standards, or other requirement documents.
Accreditation:	Certification by a duly recognized body of the facilities, capability, objectivity, competence and integrity of an agency, service or operational group or individual to provide the specific service(s) or operations(s) needed.
Accredited Laboratory:	Accredited Laboratory is one that has been reviewed and approved by a nationally recognized accreditation body [e.g. American Association for Laboratory Accreditation (A2LA), the Standards Council of Canada (SCC), United Kingdom accreditation Service (UKAS), the LRCCP, or the AINF].
Accuracy:	The extent to which the measured value of a quantity with the accepted value for that quantity.
Advanced Product Quality Planning (APQP):	The basis for program management for Federal-Mogul Corporation. (See AIAG <u>Advanced Product Quality Planning and Control Plan</u> reference manual).
Approval:	An act of endorsing or adding positive authorization.
ASN's (Advanced Shipping Notifications)	Required document for proper identification of inbound material. The preferred method is electronic notification.
Assessment:	An evaluation process including a document review, on-site Initial Qualification and/or Product Process Assessment and report.
Attribute:	A characteristic or property of a product.
Audit:	A structured and documented on-site verification activity used to determine the effective implementation of a supplier's documented quality system.
Awareness:	Personal understanding of the interrelationship of quality and productivity, directing attention to the requirement for management commitment and statistical thinking to achieve never-ending improvement.
Benchmark Data:	The results of an investigation to determine how competitors and/or best-in-class companies achieve their level of performance.
Bill of Material:	Total list of all components/materials to manufacture the product.
CAD/CAM Data:	A form of design record by which all dimensional information necessary to define a product is conveyed electronically.

Calibration:	The comparison of measuring and test equipment or a measurement standard of unknown accuracy to a measurement standard of known accuracy in order to detect, correlate, report, or eliminate by adjustment any variation in accuracy of the measuring and test equipment or measurement standard being compared.
Characteristic:	Any property or attribute of an item, process, or service that is distinct, describable, and measurable, as conforming or nonconforming to specified quality requirements.
Control Characteristic:	 Those characteristics or process parameters where any slight variation will cause potential hazard to the end user.
Control Chart:	A graphic representation of a characteristic of a process, showing plotted values of some statistic gathered from that characteristic, a central line, and one or two control limits. It minimizes the net economic loss from Type I & Type II errors. It has two basic uses: as a judgement to determine if a process has been operating in statistical control, and to aid in maintaining statistical control.
Control Limit:	A line (or lines) on a control chart used as a basis for judging the stability of a process. Variation beyond a control limit is evidence that special causes are affecting the process. Control limits are calculated from process data and are not to be confused with engineering specifications.
Control Plan:	A phase of quality planning that involves the development of a written, summary description of the system for controlling all significant characteristics of a specific product. A single control plan may apply to a group or family of products that are produced by the same process.
Corrective Action:	Action taken to eliminate the causes of an existing nonconformity, defect or other undesirable situation, in order to prevent recurrence.
Designed Experiment (DOE):	A plan to conduct tests that involves all of the pre-work that must be accomplished before any test is conducted. Pre-work requirements are that: questions are written, data collection sheets are prepared, analysis of data is laid out, and the limitations of the test are known.
FM_TIPS - (Federal Mogul- Technique In Problem Solving)	FM-TIPS is an 8-step process to ensure that all problems affecting quality and productivity are thoroughly analyzed, with the root cause of the problem being found, eliminated and verified for effectiveness.
Flow Chart:	A visual map or graphical representation depicting the steps or activities which constitute a process. The flow chart is constructed from standardized symbols that include inputs, outputs, activities and decisions.

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Kaizen:	Taken from the Japanese word <i>kai</i> and <i>zen</i> where <i>kai</i> means change and <i>zen</i> means good . The popular meaning is continual improvement of all areas of a company, not just quality.
Layout Drawing /Sales Print	Drawing that shows all projected views, key measurements and special characteristics of the received manufactured part for receiving verification.
Material Certification:	A document demonstrating compliance to requirements, signed by an authorized supplier representative, which states test results for all special characteristics established in the standard or on the print.
Parts Per Million (PPM):	PPM is a way of stating the performance of a process in terms of actual or projected defective material. PPM data can be used to indicate areas of variation requiring attention.
Problem-Solving:	The process of moving from symptoms to causes to actions that improve performance. Among the basic techniques that can be used are: Pareto charts, cause-and-effect diagrams and statistical process control techniques.
Production Part Approval Process: (PPAP)	Generic requirements for the production part approval for all production and service commodities, including bulk materials. (See AIAG <u>production Part Approval Process</u> reference manual.)
Quality Assurance:	A planned and systematic pattern of all actions necessary to provide adequate confidence that a product or service will satisfy given needs. This includes a continuing evaluation of adequacy and effectiveness with a view to having timely corrective measures and feedback where necessary.
Quality Planning:	Activities that establish the objectives and requirements for quality and for the application of quality system elements. Note: quality planning covers product planning, managerial and operational planning and the preparation of quality plans and the making of provisions for quality improvement such as business plans. (See AIAG <u>Advanced Product Quality Planning and Control Plan</u> reference manual.)
Quality Management System:	The organizational structure, responsibilities, procedures, processes and resources for implementing quality management. This includes the collective plans, activities and events that are provided to ensure that a product, process or service will satisfy given needs. Management system to direct and control an organization with regard to quality.
Quality:	The totality of the characteristics of a product or service that affect its ability to satisfy specified requirements.

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Safety Characteristic:	§ A product characteristic or process parameter where significant variation will impact the form, fit, and function of the product.
Supplier Corrective Action Request (SCAR)	The SCAR application enables interactive communication and documentation of Corrective Actions with Suppliers.
Shipping:	A term commonly used to indicate the “delivery” of material or product to the customer or the next process.
Simultaneous Engineering:	A way of simultaneously designing products, and the processes for manufacturing those products, through the use of cross-functional teams to assure manufacture-ability and to reduce cycle time.
Six Sigma:	A disciplined methodology for reducing process variability to make a significant impact to the bottom line of the business. The Six Sigma methodology uses numerous problem solving, design of experiments, and control tools to achieve long-lasting process improvement to meet strategic objectives & customer needs.
Special Characteristic:	A product characteristic for which reasonably anticipated variation is likely to significantly affect customer satisfaction, fit/function, or compliance to government regulations.
Specification:	A precise statement of a set of requirements to be satisfied by a material, product, system or service that indicates the procedures for determining whether each of the requirements is satisfied. Specifications should not be confused with control limits, which represent the “voice of the process”.
Statistical Process Control (SPC):	Use of statistical techniques such as control charts to analyze a process or its outputs so as to take appropriate actions to achieve and maintain a state of statistical control and to improve the process capability.
Testing:	Verification of the capability of an item or product to meet specified requirements.
Tooling Maintenance:	Tooling maintenance is the periodic sharpening, polishing, or other servicing of a tool. This maintenance will not significantly affect the dimensions or other characteristics of the product produced by the tool.
Tooling Refurbishment:	Tooling refurbishment is the major overhaul of a tool. Refurbishment can affect dimensions or other characteristics of the product produced by the tool.
Traceability:	The ability to trace the specific history, application, or location of an item and like items or activities by means of documented

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identification.

**Value Engineering/
Value Analysis (VE/VA):**

A function oriented, systematic, team approach to eliminate or prevent unnecessary cost. Value analysis is commonly used to indicate a value study of an existing product, project or system. Value engineering is commonly used to indicate using value methods to design them.

Variation:

The inevitable differences among individual outputs of a process; the sources of variation can be grouped into two major classes: common causes and special causes.

Verification:

The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining and documenting whether items, processes, services, systems or documents conform to specified requirements.

Waiver/Deviation

Documented authorization to deviate from specified requirements.