

1.0 Purpose

This document defines the quality requirements for suppliers and sub-tier sources associated with a purchase order.

2.0 Scope

This document applies to all suppliers and purchase orders for purchased product or services associated with API Technologies Corp.

3.0 Reference Materials

- 3.1 [AT 35-6033](#), Supplier Quality Requirement procedure
- SQR 1: Minimum Supplier Requirements
 - SQR 2: Material Safety Data Sheet (MSDS)
 - SQR 3: N/A, this SQR is obsolete
 - SQR 4: Chemical and Physical Analysis
 - SQR 5: Solder Analysis
 - SQR 6: Plating Test Data
 - SQR 7: Calibration Services
 - SQR 8: Tool Qualification
 - SQR 9: Outside Testing Accreditation Requirements
 - SQR 10: Restriction of Hazardous Substances (RoHS)
 - SQR 11: Regulatory Requirements
 - SQR 12: RoHS (5/6) exemption
 - SQR 13: Special Manufacturer C of C
 - SQR 14: No Substitutions
 - SQR 15: RoHS Compliance Statement
 - SQR 16: Solderable Termination Finishes
 - SQR 17: Subcontract Assembly-Material Traceability of Components
 - SQR 18: AS9102 First Article Inspection
 - SQR 19: Special Process Control Requirements
 - SQR 20: API Source Inspection
 - SQR 21: Special Processes
 - SQR 22: GD Fair and Master List
 - SQR 23: GD General Quality Requirements
 - SQR 24: Lot Report / Control
 - SQR 25: DFAR 252.204-7008 Safeguarding Covered Defense Information Controls
 - SQR 26: DFAR 252.204-7009 Limitations on the Use or Disclosure of Third-Party Contractor Reported Cyber Incident Information
 - SQR 27: DFAR 252.204-7012 Covered Defense Information and Cyber Incident Reporting
 - SQR 28: DFAR 252.239-7010 Cloud Computing Services
 - SQR 29: No changes to Design, Material, or Process without written permission from API.
 - SQR 30: Eye Examinations
 - SQR 31: Homogenous Lot Requirement

4.0 Definitions/Acronyms

- 4.1 SQR: A Supplier Quality Requirement (SQR) is a specific requirement for documentation or services which extends beyond the Purchase Specification (PS) and which the supplier is contractually bound to meet.
- 4.2 API: API Technologies Corp.
- 4.3 PO: Purchase Order
- 4.4 PS: Purchase Specification
- 4.5 SQR: Supplier Quality Requirement
- 4.6 MRB: Material Review Board
- 4.7 Class I (Major Change): Class I changes are those changes that may affect the performance, quality, reliability, radiation (when specified) or interchangeability of the product. Acquiring activity approval is required if specified by contract.
- 4.8 Class II (Minor Change): Class II changes are all changes except Class I and Class III changes (e.g. conformance to the military specification revision, vendor metallization mask change, package height change within the envelope tolerances of the detail drawing, etc.). Control procedures, records, and rationale for the changes should be kept available for review.
- 4.9 Class III (Editorial Change): Class III, editorial changes are those changes to documentation necessary to ensure the understanding and execution of the affected document (e.g., format changes, spelling, word identity, etc.). Change documentation history for Class III type changes should be kept available for on-site review.

SQR 1: Minimum Supplier Requirements

a) **Certificate of Compliance (C of C):**

Material supplied on this purchase order shall conform to requirements stated therein, and shall be accompanied by a C of C, which must contain the following information:

- API purchase order number, po revision, line item number
- Part number of item (as specified on the purchase order), revision, quantity
- Drawing or specification number and revision if different than the API part number and revision.
- All raw materials, hardness, etc. that are specified on the purchase specification must be listed on the C of C.
- If applicable, the supplier shall also furnish a C of C specifically stating the material(s) provided conform to applicable safety agency requirements.
- Serial number(s), date code(s), lot, batch, heat number(s), must be recorded when applicable.
- Cage Code (if applicable)
- Authorized agent's name, title and date (N/A for distributors)

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Traceability is not required to be maintained on bulk hardware items ordered to Mil-spec or industry standard part numbers, e.g., bolts, screws, nuts, terminals, rivets, clamps, washers, eyelets.

A lot is defined as a homogenous quantity of parts/material received and controlled as a single procurement transaction.

The supplier or distributor shall provide a certificate of conformance with each shipment of items delivered to API. The certificate shall state that the supplier and/or the original manufacturer has performed all inspections and required tests identified on the API Purchase Order and the delivered Items meet all of the requirements identified on the API Purchase Order.

Completion of this Certificate shall not modify or limit any representations, warranties or commitments made or in any way that affect the obligation of Seller to perform strictly in accordance with the provisions of the Purchase Order.

b) **Configuration Management:**

The parts, materials, processes used to build the product on this PO are controlled by API. Suppliers must notify API of any changes to product, processes, suppliers, and facilities. No changes may be made unless approved in writing by authorized API personnel. Copies of specifications, standards, and drawings required by suppliers and sub-contractors in connection with specific procurements may be obtained from the API buyer.

c) **Supplier Discovered Nonconforming Material:**

All material(s) provided are to be supplied in conformance with drawings, and specifications as required in the PO. Unless specified in the PO, the supplier and their subcontractors do not have authority to process "Use-As-Is", "Repair", "Standard Repair Procedures (SRP)" or "Non-SRP" via their MRB. These dispositions, as well as deviations and request for waivers, shall be submitted for approval prior to delivery of the product. If the API MRB authorizes the deviation, a written Deviation Request / Authorization (Form # 34-0559-00) shall be issued to the supplier. This form must accompany the nonconforming material when shipped.

d) **Packaging:**

Material supplied under this PO must be packaged in accordance with specific direction provided on attached drawings or specifications. If not specified, the supplier is responsible for packaging the product in such a manner as to protect the material from the hazards of contamination or physical damage encountered in transport, general handling, storage, and issue.

Regardless of such direction, the supplier continues to be responsible for protecting material from the hazards of contamination or physical damage encountered in transport, general handling, storage, and issue. If additional packaging is required to provide said protection, the supplier must provide it, or contact their API buyer for explicit directions.

If an ESD symbol is contained within the PS then material shipped on this order shall be packaged and labeled as Electro Static Sensitive (ESDS).

Silver saver paper is required for all silver plated parts.

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Parts are to be protected from corrosion, for example, packaged with desiccant when applicable

e) **Records:**

Records of manufacture, qualification, inspection and test, and traceability shall be maintained by the supplier and made available for review. Such records shall be maintained for at least **10** years, unless otherwise specified. The records shall indicate the nature and number of observations, the number and type of deficiencies found, the quantities approved and rejected and the nature of corrective action taken, as appropriate.

For purchased material used in medical devices at least one copy of obsolete documents shall be maintained for at least 10 years. This period ensures that documents to which medical devices have been manufactured and tested are available for at least the lifetime of the medical device.

f) **Cancelled / Superseded Military Standards**

If an item on this PO invokes by reference a military standard or specification the revision in affect is as of the date of this purchase order.

The replacement and cancellation of Military Standards is ongoing. In the event that an API / API customer drawing references a superseded or obsolete specification or standard, the supplier may do one of the following.

Superseded Military Standards or specifications should be replaced by the recommended replacement documents.

Obsolete Military Standards or Specification may be substituted with supplier or industrial Standards / Specifications.

g) **Inspection and Testing:**

Material shall be subjected to inspection after receipt, as necessary, to assure conformance to purchase order requirements. Inspection and testing shall be prescribed with clear, complete and current instructions. The instructions shall assure inspection and test of materials, work in process and completed articles, as required, by the item specification and the purchase order. In addition, criteria for approval and rejection of product shall be included.

When requested, inspection and/or tests required to prove full conformance of a line item to purchase order requirements must be recorded and provided. If the material requires API source inspection, the data must be made available for review by the API Quality Representative prior to delivery. The data submitted shall cover the lot of material being shipped.

When critical characteristics are documented on the PS, the supplier is required to measure those characteristics and supply variables data with the product.

If critical characteristics are not identified, the supplier is required to retain the inspection results for all other characteristics outlined on the PS on a pass/fail basis unless otherwise noted.

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The aforementioned inspection results shall include at minimum:

- Quantity of product checked
- Characteristics checked
- Whether or not the product is within the tolerances specified in the PS

All inspection results shall be made available upon request. When applicable, inspection results may be reported in the Supplier's standard format; a copy of existing records is acceptable, unless otherwise noted on the PS. API reserves the right to re-inspect the product upon receipt. Compliance with this SQR does not exonerate the supplier from ensuring that all characteristics meet the PS. To facilitate rapid retrieval of the test data, the test data should be enclosed in the same container as the product when applicable. (Certified Suppliers and Distributors are exempt from this requirement)

Sampling inspection procedures used by the Supplier to determine quality conformance of supplies shall be described in the Supplier's inspection system and shall comply with industry sampling practices. If supplier's sampling process is internally developed they must demonstrate their ability to comply with industry statistical methods proven over time. If sampling instructions are described in the API purchase order or technical documents within the purchase order, the Supplier shall assure that the purchase order requirements are complied with. The sampling plan utilized by the supplier must be documented on the inspection and test data.

h) **Calibration System Requirements:**

The Supplier shall provide and maintain gages and other measuring and testing devices necessary to assure that supplies conform to the technical requirements. In order to assure continued accuracy, these devices shall be calibrated at established intervals against certified standards considering areas of uncertainty which have known valid relationships to national standards. If production tooling, such as jigs, fixtures, templates and patterns used as a media of inspection, such devices shall also be proved for accuracy at established intervals. Calibration of inspection and test equipment shall be performed with standards that have certifiable traceability to NIST.

i) **Quality System Requirements:**

The Supplier's Quality Systems must comply with ISO 9001 Quality System Requirements or the supplier must show evidence of developing systems towards compliance. (Distributors are exempt from this requirement)

In addition Distributors shall (where applicable):

- Maintain an approved and/or qualified manufacturers list (QPL) or for source listed on the purchase order.
- Have available and use the Government Qualified Products List (QPL) and the Government Qualified Manufacturers List (QML).
- Procure all Military specification parts from QPL sources.
- Define and stipulate in Distributor's purchase order to the manufacturer, applicable API and/or Military specifications and related requirements.

j) **Right of Entry Provisions:**

These provisions shall allow API; its Customer, and Regulatory Agencies the right of entry to the applicable areas of all facilities, at any level of the supply chain involved with the order, to determine and verify the quality of work, records, and materials. During performance of this order, the suppliers quality inspection system, manufacturing processes, inventory control and lot traceability and quality records are subject to review, verification and analysis by an authorized customer / Government or Regulatory representative. This also applies to the supplier's subcontractors. The seller shall, at no additional cost, supply inspection records, and, when requested, perform or repeat selected inspection and / or tests which are required by purchase order, drawing, specification, statement of work, or inspection instruction.

k) **First Article Inspection - Initial Sample Inspection Report (FAI/ISIR):**

(N/A for Distributors)

A completed ISIR must accompany the first manufactured lot of a new product. The ISIR must be completed on product manufactured with the actual process utilized for production. The ISIR is a complete inspection of every characteristic on at least three samples of a lot. The inspection must be performed in accordance with the PS, report actual variable measurements where possible. To facilitate rapid retrieval of the ISIR, it should be enclosed, where possible, in the same container as product. (Distributors are exempt from this requirement)

l) **Counterfeit Parts Prevention**

For purposes of this clause, “Genuine Work” consists of those parts delivered under this Contract that are the lowest level of separately identifiable items (e.g. articles, components, goods and assemblies). “Counterfeit Work” means Work that is or contains items misrepresented as having been designed and/or produced under an approved system or other acceptable method. The term also includes approved Work that has reached a design life limit or has been damaged beyond possible repair, but is altered and misrepresented as acceptable. Supplier agrees and shall ensure that Counterfeit Work is not delivered to API. All parts delivered and/or used in the manufacture of deliverable products shall be from the Original Component Manufacturer (OCM)/ Original Equipment Manufacturer (OEM) or their franchised distributor. Parts shall not be used or reclaimed and misrepresented as new. Parts shall not be acquired from independent distributors or brokers unless customer authorization is obtained. (See SQR 17) Supplier shall immediately notify API with the pertinent facts if the supplier becomes aware or suspects that it has furnished Counterfeit Work. The supplier must have a certification from the OCM/ OEM, and that certification shall be delivered with each lot/ shipment. In the event that Work delivered under this Contract constitutes or includes Counterfeit Work, the Supplier shall, at its expense, promptly replace such Counterfeit Work with Genuine Work conforming to the requirements of this Contract. The Supplier shall also be liable for all costs relating to the removal and replacement of Counterfeit Work, including without limitation, costs of removing Counterfeit Work, of reinserting replacement Genuine Work and of any testing necessitated by the reinstallation of Genuine Work after Counterfeit Work has been exchanged. This clause applies in addition to any quality provision, specification, statement of work or other provision included in this Contract addressing the authenticity of Work. To the extent such provisions conflict

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with this clause, this clause prevails. The supplier shall have a counterfeit detection process that is similar to, and meets the intent of, SAE standard AS5553, Counterfeit Electronic Parts, Avoidance, Detection, Mitigation, and Disposition. Suppliers of higher level assemblies shall flow this requirement down to all their sub-tier suppliers to prevent the inadvertent use of counterfeit parts and materials. The Electronic Components Association (ECA) link may be used to determine authorized sources. <http://www.eciaauthorized.com/>

The Seller shall participate in the Government Industry Data Exchange Program (GIDEP) monitoring and acting on GIDEP reports which affect product delivered to the Buyer. When suspect or confirmed counterfeit item(s) associated with this purchase order are discovered the Seller shall issue a GIDEP report and shall ensure suspect counterfeit items are not delivered to API.

Distributors must certify that; for obsolete (Out of Production) items, materials and/or parts furnished to API are from sources that:

- Were approved at the time of item manufacture (drawing-based items), and
- Can validate the authenticity of the item, based on part number and/or manufacturer's identification marking (MIL spec. items)

Otherwise, the Distributor shall notify the API Buyer prior to acceptance of the Purchase Order, so a decision can be made on the purchase.

m) **Requirements for Test Specimens:**

A test specimen (e.g. production method, number, storage conditions) shall be submitted for design approval, inspection, investigating or auditing. The PO will describe the test specimen requirements.

n) **Requirement Flow Down:**

Suppliers are required to flow down all applicable requirements in the PO to sub-tier suppliers, including key characteristics as required. When required by customers, any change that is regarded as a Class I change cannot be implemented without approval from API as well as the specific customer that the product is being built for. At a minimum, all sub-tier suppliers must notify API of any Class II changes. All changes either Class I or Class II refer only to the product and the specific process used to construct the product. Personnel changes and changes within a site are not included if NO impact is made to fit, form or function.

o) **Pure Tin and Tin Plated Finishes:**

Unless otherwise specified in the PS, pure tin and tin plated finishes are prohibited.

➤ p) **Shelf Life:**

At time of API receipt, material must have a minimum of 80% of its original shelf life remaining, as defined by the manufacturers' expiration date.

Suppliers must practice the "first in first out" principle of stock control

- **The supplier shall define the proper storage conditions and notify the buyer if storage conditions changed.**

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q) **Foreign Object Debris/Damage (FOD) Prevention:**

Whenever FOD entrapment or foreign objects can migrate, the Supplier shall maintain a FOD prevention program. Prior to closing inaccessible or obscured areas and compartments during assembly, the Supplier shall inspect for foreign objects/materials and ensure no FOD exists. The supplier shall ensure tooling, jigs, fixtures, and test or handling equipment, are maintained in a state of cleanliness and repair sufficient to prevent FOD. By delivering items, the supplier shall be deemed to have certified that such items are free from any foreign materials that could result in FOD. The supplier's quality program shall include FOD preventive practices and packaging.

r) **Customer Furnished Material**

When material is furnished by API / API's Customer, the supplier's procedures shall include, as a minimum:

- Examination upon receipt, consistent with practicability, to detect damage in transit
- Inspection for completeness and proper type
- Periodic inspection and precautions to assure adequate storage conditions and to safeguard against damage from handling and deterioration during storage
- Functional testing, either prior to or after installation, or both, as required by the purchase order; to determine satisfactory operation
- Identification and protection from improper use or disposition
- Verification of quantity

s) **Root Cause and Corrective Action.**

The Supplier shall take prompt action to correct assignable conditions which have resulted or could result in the submission of nonconforming material to API.

When it is determined that the supplier is responsible for the nonconformance of material, the supplier shall respond to API's request for a supplier's corrective action. Failure to respond within the time frame requested may affect supplier's status as an approved supplier. The API Failure Analysis/Corrective Action form is available at <http://suppliers.apitech.com/>

t) **Process Controls**

Process control procedures shall be an integral part of the inspection system when such inspections are a part of the specification or the contract. The Supplier shall notify API of changes in product and/or process definition and where required, obtain API's approval. Statistical Process Control (SPC) is the preferred method of validating these areas.

u) **Electrostatic Control Plan (ESD)**

When product is considered to be susceptible to electrostatic damage, the Supplier must take necessary precautions to ensure static sensitive items or repair services to static sensitive items are protected from electrostatic discharge events. Additionally, the supplier shall have an ESD Control Program Plan and artifacts available for review. It is recommended the ESD Control Program Plan follow the guidelines of MIL-HDBK-263, titled "ESD Control Handbook for Protection of Parts, Assemblies and Equipments" and shall include procedures, personnel training, records and calibration of ESDS testing equipment. The supplier's ESDS program, including the procedures, is subject to API / API customer review throughout the period of this contract. The supplier is responsible for ensuring that product is manufactured, tested, identified and handled in accordance with MIL-STD-1686, EIA JESD625-A, ANSI ESD S20 20-2014 or equivalent.

v) **JAN Branded Devices**

Manufacturer documentation shall include certification that the devices involved have received Government Source Inspection when required by MIL-PRF-19500.

w) **Affirmative Action Regulations**

If applicable, this contractor and subcontractor shall abide by the requirements of 41 CFR 60-1.4(a), 60-300.5(a) and 60-741(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability

x) **End of Life Notification (EOL) / Obsolescence**

It is the supplier's responsibility to monitor the life cycle status and availability of parts and/or materials through the duration of the contract.

Parts/material determined to be unavailable or identified as "unavailable for new designs" shall be reported to the API buyer.

EOL notification must be submitted to API 1 year prior to the last time ship date with a minimum of 6 months for order placement.

The written notification must include:

- EOL part number
- EOL part name
- Reason for part discontinuation
- Last time buy date
- Last ship date

Equivalent/alternate product if available

y) **Communication**

- Contact buyer if any questions arise with Purchase Order
- Suppliers are evaluated on a regular basis for delivery and quality. If there are any issues, supplier may be required to complete a Corrective Action
- If Source Inspection is required it will be indicated on the Purchase Order
- API holds all design control and any changes must be approved in writing by API prior to implementation
- Supplier must have a process to address awareness for the following areas:
 - Contribution to product or service conformity
 - Contribution to product safety
 - Importance of ethical behavior

SQR 2: Material Safety Data Sheet (MSDS)

The supplier shall furnish an MSDS with the first shipment. If the material and/or the MSDS have been revised, the supplier must furnish a revised MSDS with the next shipment. If a material does not require an MSDS per OSHA 29 C.F.R 1910.1200 Hazard Communication one need not be provided.

SQR 4: Chemical and Physical Analysis

The supplier shall furnish quantitative results of tests obtained from the point of manufacture, indicating that materials furnished meet all API, military, federal, and other requirements called out by the PS. A C of C is not sufficient. Test reports from sub-tier suppliers are acceptable.

SQR 5: Solder Analysis

A copy of the supplier or manufacturer's test report containing reflow temperature data and chemical analysis data must be supplied with each lot.

SQR 6: Plating Test Data

A copy of the supplier's test report containing quantitative results of plating thickness tests must be provided with each lot and shall reference the plating specifications and revision level.

SQR 7: Calibration Services

The calibration facility shall be accredited to ISO/IEC 17025 or national equivalent. All calibrations must be performed in accordance with ANSI Z 540 (latest revision). The calibration service supplier must provide a certificate of calibration for each service performed.

At minimum, the certificate shall include the following:

- Verification of calibration in accordance with ISO/IEC 17025 and ANSI Z 540 requirements
- Identification of all standards used with certifiable traceability to NIST
- Actual measurements of calibrated equipment vs. standards used
- Statements describing any adjustments made to the equipment
- A statement of the environmental conditions at the time of calibration, including both temperature and humidity readings
- Unless otherwise specified on the PO, accuracy shall be in accordance with the manufacturer's recommendations
- Statement of conformance to specification after calibration

Condition as received, including any out of specification readings; API must be notified immediately if out of specification condition exists.

SQR 8: Tool Qualification

Toolmakers must supply objective evidence that a full dimensional inspection has been performed and that the manufactured tool/gage meets the requirements of the API design.

SQR 9: Outside Testing Accreditation Requirements

The outside testing facility must be accredited to ISO/IEC 14025.

SQR 10: Restriction of Hazardous Substances (RoHS)

When required by the PS, product(s) supplied under this PO must be compliant to the Restriction of Hazardous Substance (RoHS) Directive and specifically to API document ET 30-0024; this document outlines the Controlled and Prohibited Materials pertaining to API product and it is available through the API website;

http://suppliers.apitech.com/docs/api_controlled_materials.pdf

PO's specifically requesting non-ROHS complaint components/processes must be processed without material substitution.

SQR 11: Regulatory Requirements

- a) The supplier must comply with all local/state/federal regulations as applicable.
- b) This Purchase Order incorporates API's customers General Terms and Conditions of Purchase, which impose requirements with which you shall comply when filling this Purchase Order.
- c) If any articles delivered under this purchase order include specialty metals the following contract clauses apply to you and shall also be flowed down to your vendors that supply material that includes specialty metals.

All clauses prohibit API and all of its suppliers at every tier from incorporating specialty metals into military parts, components and/or end item deliverables unless the specialty metals have been smelted (the Deviation clause adds "or produced") in the United States, its outlying areas, or a qualifying country listed in DFARS 252.225-7003, DFARS 252.225-7008 and DFARS 252.225-7009.

Exemptions to the requirements of the above clauses may exist, as outlined in the clauses themselves or by operation of applicable Department of Defense (DOD) Domestic Non-Availability Determinations (DNADs) posted on the DOD public web site. If you believe an exemption(s) applies, please provide the specifics to API with the appropriate documents and information sufficient to demonstrate your entitlement thereto. DFARS Preference for Domestic Specialty Metals Clause can be accessed via <http://www.acq.osd.mil/dpap/dars/dfarspgi/current/index.html> Adherence to export control regulations 22 CFR 120-130 or 15 CFR 730-774 apply to this contract.

- e) *If the PO ship to location = People's Republic Of China or Hong Kong the shipment must meet the packaging and product labeling requirements set forth by the China Ministry Of Information Industry; Management Methods for Controlling Pollution caused by Electronic Information Products Regulation (China RoHS).*

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- f) Federal Acquisition Regulations (48 CFR Chapter 1) Clauses set forth in the FAR and DOD FAR Supplement in effect as of the date of the prime contract is incorporated herein by reference. A matrix of applicable clauses for fixed-price supply contracts (FP SUP) can be accessed via thru the Federal Acquisition Regulations website. <https://www.acquisition.gov/far/>
- g) Defense Priorities and Allocations System (15 CFR 700.12 - Elements of a rated order) When a government rating and government contract number is present on the PO, it is a rated order certified for national defense use. The supplier is required to follow all provisions of the Defense Priorities and Allocations Systems regulations. If the order is a defense rated order then the rating will be entered on the PO.
- h) The use of “conflict minerals” as defined in Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act from the Democratic Republic of the Congo or any adjoining countries (“DRC Countries”) is prohibited for use in the manufacture of product for API Technologies. Beginning January 31, 2013 API requires that suppliers provide country of origin for all of the outlined conflict minerals contained in product sold to API.

Conflict Metals include:

- Columbite-Tantalite or Coltan
- Cassiterite
- Gold
- Wolframite
- Their derivatives; or any other mineral or its derivatives determined by the Secretary of the State to be financing conflict in the DRC countries

SQR 12: RoHS (5/6) exemption

All products supplied must meet requirements of SQR 10 with the exception of lead (Pb) contained in solder (RoHS 5/6).

SQR 13: Manufacturer/Distributor C of C and Traceability

Certificate of Conformance (C of C) from original manufacturer is required. The C of C must contain the following information:

- Original manufacturer’s name, cage code number and/or address, and part number, or if applicable
- Distributor/service provider name, cage code, and/or address, and part number
- The original country where part was manufactured

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Seller must certify that all materials and/or parts furnished to satisfy the requirements of this Purchase Order are from original equipment manufacturers, authorized franchised distributors for the items, or subcontractors to whom the requirements of this attachment are made applicable

Distributors must identify material and maintain traceability to Manufacturer's part number, lot number, and date code of all electronic and electrical parts, raw material and mechanical machined parts, semiconductor devices, integrated circuits, and passive electrical components.

SQR 14: No Substitutions

API supplied material is provided for this PO. No substitutions allowed.

SQR 15: RoHS Compliance Statement

A RoHS Declaration of conformance must accompany every shipment.

SQR 16: Solderable Termination Finishes

The most recent revision of IPC J-STD-001 Class 3 (Requirements for Soldering Electrical and Electronic Assemblies) applies to this PO unless otherwise defined by drawing or SOW. Solder materials, component, processes, inspections, and workmanship for material procured under this PO shall satisfy the requirements defined by Product Class 3.

Components and components in completed subassemblies furnished under this Purchase Order shall be delivered with one of the approved termination finishes as listed below. The termination finish shall be capable of meeting the solderability requirements of ANSI/J-STD-002 or EIA/JESD22-B102 as a minimum. ANSI/J-STD-002 is the preferred test method. When required, a double tinning or dynamic solder wave process shall be used for any gold plating removal.

Approved Termination Finishes:

- Tin-Lead (Sn-Pb) with minimum 3% Pb
- Palladium plated
- Nickel palladium gold (gold flash)
- Electroless Nickel Immersion Gold (ENIG)
- Gold 0.4 μm [15.7 microinches] or less on a surface mount part
- Gold 2.5 μm [98.4 microinches] or less on a thru-hole part
- Pb-free tin that is either:
 - Matte finish over a nickel barrier
 - Matte finish that has been annealed
 - Hot dipped over nickel barrier

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All other pure tin finishes are disallowed unless authorized by the procuring agency.

- Pb-free tin is defined as any finish containing tin which does not contain at least 3% Pb – this includes pure Sn, Sn/Ag/Cu, Sn/Ag and Sn/Bi (Bi content cannot exceed 5%)

Unless approved in writing by buyer or specifically required by the part drawing or assembly drawing and associated parts list, no material delivered under this order may utilize:

- Solder and finishes, (including, but not limited to, solder balls / columns for area arrays or components) containing less than three percent (3%) lead (Pb) by weight (Pb-free), except solder pre-forms used for die attach within a microcircuit.
- Bright tin (Sn) surface finishes as defined by ASTM B545-97

The seller shall notify the buyer of any planned material changes to lead (Pb) – free finishes, plating, or solders associated with the part number. These changes must be evaluated and approved by API prior to completion of this order.

SQR 17: Circuit Card Manufacturers / Subcontract Assembly Manufacturers Requirement for Material Traceability of Components

The Supplier shall maintain a Material Authenticity program that aligns and is consistent with the intent of SAE AS5553, Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition.

Seller shall maintain objective evidence of supply chain traceability to the original component manufacture (OCM) / original equipment manufacturer (OEM), authorized aftermarket manufacturer (AAM), or manufacturer – authorized distributor that identifies the name and location of all of the supply chain intermediaries from the component manufacturer to the direct source of the component(s) for the seller for any components procured in support of this purchase order. Examples of traceability documents indicating proper component transfer from one company to another in the supply chain include but are not limited to: packing slips, receiving documents, purchase orders, and shipping documents. Certificates of Conformance from non-franchised distribution sources are not adequate to meet the supply chain traceability requirements. The seller shall request and obtain through the buyer's authorized purchasing representative (the buyer), authorization prior to shipping product with acquisition history that includes distribution sources outside of the United States.

If Components are procured from an OCM/OEM – authorized distributor, the OCM / OEM –authorized distributor must obtain the component(s) to be delivered under this contract from the OCM/OEM. Seller shall maintain evidence of supply chain traceability, electronic or hard copy purchase records from these procurements.

If evidence of supply chain traceability to the OCM/OEM/AAM is not available, then the Seller shall have all components submitted to an inspection/ test service provider to verify for authenticity prior to shipment.

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Verification shall include the following:

- For all packaged active electronic components, verify that component and packaging labeling are consistent and that component marking meets permanency and black topping tests. Capture high magnification digital photographs of top and bottom of one component for each date code provided in the delivery and a photograph of the packaging. Component marking and packaging labeling must be clearly legible in the photographs. Component and package markings such as date/lot code shall be validated with the manufacturer or by comparison to other authentic components or images.
- For all packaged components, inspect for manufacturer and Mil-Spec required markings and dimensions (e.g., external visual per Mil-Std-883, method 2009), and for external counterfeit criteria per IDEA-STD-1010.
- For all packaged components, 100% of the components shall be tested to all specified limits of all group A static DC parameters at ambient temperature specified per applicable drawing or in accordance with the applicable industry / military requirements or manufacturers data sheet. The Seller shall hold the lot for API review, if 100% (Group A) test failures exceed 10% of the lot quantity. Product containing these components may not be shipped unless authorized in writing by the buyer.
- For packaged components with internal die cavities, unless the seller requests and obtains from the buyer approval of an exception, both De-cap and X-Ray is required as follows:
 - De-Cap internal visual on at least one component for each date code performed in accordance with Mil-STD-883, Method 2014 and IDEA-STD-1010, with digital photograph(s). Seller shall verify die topology and markings are authentic with the OCM/OEM/AAM or by comparison to other authentic components or images.
 - 100% X-Ray inspection per Mil-Std-883, Method 2012 (digital format preferred).

Seller shall verify any mixed construction and / or construction anomalies within a single date code identified in the De-cap or X-Ray inspection to be authentic by the OCM/OEM/AAM or validated against a known authentic component prior to shipment.

For bare die products, inspect for consistent markings on the die and the wafer packaging and verify die size and geometry (visual inspection per Mil-Std-883, Method 2010). The seller shall verify die topology and markings are authentic with the OCM/OEM/AAM or by comparison to other authentic components or images. Mixed construction shall be cause for rejection.

The seller shall maintain verification records and results, including a copy of X-Ray and digital photographs, for the components that pass the inspection and test above. The seller shall not ship components which fail these tests /inspections nor utilize such components in circuit card assemblies or other products delivered to API.

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Approved Test Houses:

Verification as required in this clause shall be completed by one of the following API / Customer approved test providers. Request for additional test providers can be made to API but shall not be utilized without a purchase order amendment or a supplier deviation request.

- Integra Technologies -3450 N. Rock Road, Wichita, KS
- Velocity Electronics – 2208 Energy Dr, Austin, TX
- SMT Corporation – 14 High Bridge Road, Sandy Hook, CT
- Electro Product Management Inc -5 Daniel Rd East, Fairfield, NJ
- Electro-Comp Services, Inc – 3634 131st Avenue, Clearwater, FL
- Premier Semiconductor Services – 11701 28th St. N. St. Petersburg, FL
- Anloy Technologies – 1924 American Dr., Lago Vista TX

SQR 18: AS9102 First Article Inspection

Supplier shall perform a complete first article inspection to applicable drawings, specifications, technical instructions, processing tooling, inspection and test equipment in accordance with the guidelines below to assure the product is compliant with the requirements of this purchase order.

FAI applies to one piece from the first production run, unless otherwise set forth in this purchase order through written waiver by quality assurance.

Supplier is responsible for determining the method of performing FAI and shall use a form that contains all required information as specified in SAE AS9102.

The FAI requirement, once invoked, shall continue to apply even after initial compliance. Any or all of the following events requires re-accomplishment of a full, or a delta / partial FAI for affected characteristics: (note: if none of the following conditions are applicable at the time of product delivery, first article inspection is not required.)

- A change in the design affecting form, fit, or function of the part
- A change in manufacturing source(s), processes, assembly line, inspection method(s), location, tooling, or materials
- A change in numerical control program or translation to another media
- A natural or man-made occurrence which may adversely affect the manufacturing process
- All repeat builds on production parts when more than two years has elapsed (or as otherwise directed in the purchase order) since the last production item was produced
- When required as part of corrective action for a part number with repetitive rejection history

Supplier shall segregate and identify the FAI unit in a separate container when delivering to API. The FAI report is to accompany the FAI unit.

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Supplier shall assure that discrepancies and non-conformances, if any, discovered during the FAI are documented and dispositioned by the appropriate material review board (MRB). (Suppliers MRB for supplier designed and API customer MRB for API / Customer Design)

First Article reports for items controlled by CAD files as referenced in the item drawing shall record all dimensions listed on the drawing. A CAD file dimension not listed on the drawing is only to be documented in the inspection report when its respective tolerance is called out on the drawing.

SQR 19: Special Process Control Requirements

A Special Manufacturing Process is a process where it is not possible to assure, by typical verification techniques, that product integrity is achieved by the process. The Seller shall certify that these processes such as but not limited to plating, painting soldering, radiography, welding, heat-treating, cleaning, electroplating, anodizing, chemical films, etc. were performed in accordance with specification requirements.

The certificate shall identify the products processed, the Procurement Agent's Purchase Order number, and the applicable specifications (including revision letters or numbers) to which the processes conform and the date and the name of the agency that performed the process if other than the Seller.

Raytheon Quality Notes:

The Raytheon Q Notes referenced below can be found at:

http://qnotes.raytheon.com/index.cfm?fuseaction=qnote_list#pagetop

If an item on this Purchase Order contains any of the following then the applicable quality notes apply

Plating, Surface Finishes and Conditioning Requirements, Quality Note JY

Painting Requirements, - Quality Note CT

Welding & Brazing Requirements - Quality Note HK

Non Destructive Testing (NDT) Requirements - Quality Note TC

Heat Treating Requirements - If an item on this Purchase Order contains Heat Treating, the seller shall use a NADCAP approved processor for the required Heat Treating process. Refer to [website http://www.eauditnet.com](http://www.eauditnet.com) for the list of NADCAP approved processors

Soldering Requirements (IPC J-STD-001D) – Quality Note CX

Component External Lead/Termination Solderability IPC/EIA-J-STD-002 – Quality Note CC

When a Special Process is used, as outlined above, where there are no defined Special Process requirements in the drawing, the supplier shall have a controlled Special Process process/procedure and evidence that it has been provided to the API Quality Manager

SQR 20: API Source Inspection

API Source Inspection is required for all products and services supplied on this purchase order prior to any shipments.

Supplier shall have completed all necessary processing and inspections, and must assure readiness for source inspection in advance of notification to API.

The supplier shall provide no less than forty-eight (48) hours advance notice to the API Representative to permit scheduling of source inspection.

The supplier shall furnish, at no cost to API, acceptable facilities and equipment. All associated documentation, including drawings, a copy of the purchase order, test procedures, production records and test records, must be made available to API during source inspection activities.

Evidence of the completed API source inspection shall accompany each shipment where API source inspection was performed.

In the event that API waives this source inspection requirement, API will provide this waiver in writing. A copy of such waiver shall accompany the applicable shipments.

SQR 21: Special Processes

Personnel performing special processes such as soldering, wire-wrap, crimping, lugging, and welding will require certification in accordance with commercially accepted standards.

SQR 22: General Dynamics FAIR and Master List

a) Baseline Qualification First Article Test (FAIR)

The Seller shall perform Baseline Qualification First Article Testing (FAIR) to ensure that the systems, subsystem, component, and material comply with all TDP requirements. The Baseline Qualification shall include verification of all TDP characteristics and tests as documented in the prints, specifications, and the following:

- 1) FAIR per AS9102 w/ ballooned drawing
- 2) Process Flow Map
- 3) Control Plan
- 4) PFMEA

SQR 23: General Dynamics General Quality Requirements

a) Industry Standard Revisions

Revisions or replacements to Government/Industry Standards referenced in the Technical Data Package or referenced within these Standards shall be considered process changes. (Examples of Government Standards are documents controlled by the Government and typically begin with MIL-STD, MIL-DTL, MIL-PRF, etc. Industry Standards are those controlled by organizations such as ASTM, ANSI, SAE, etc.) Should there be a need or desire to move to a new revision, Seller shall request and receive written API approval prior to implementing any revision or replacement to a referenced Government/Industry Standard in order to allow proper assessment of the revised standard's impact on product. Seller's request for such a change shall be formally submitted to the API Purchasing Manager.

Seller shall flow the substance of this clause to its subcontractors for items purchased in support of this Purchase Order, including this paragraph, changing the relationship of the parties and processes as appropriate to preserve the intent of the words. This clause need not be flowed to suppliers of raw material (for example sheet steel purchased from a steel mill or distributor) or Commercial Off-The-Shelf (COTS) items.

b) Calibration System Requirements

The Seller shall provide and maintain a documentation calibration system All calibrated equipment shall be traceable to the National Institute of Standards and Technology (NIST).

Seller shall flow the substance of this clause to its subcontractors, including this sentence, changing the relationship of the parties as appropriate to preserve the intent of the words.

c) Software Quality Assurance

The Seller shall ensure that software development and quality records are available for API and Government review at the Seller's facility. This includes software associated with inspection and test equipment.

Seller shall flow the substance of this clause to its subcontractors, including this sentence, changing the relationship of the parties as appropriate to preserve the intent of the words.

d) Nonconforming and Noncompliant Material

Seller shall develop, implement and maintain a nonconforming material management system. The system shall be used for positively controlling nonconforming material and shall be used for tracking, analyzing to determine root cause, and assuring effective corrective/preventive action implementation.

No Material Review Authority (MRA) is delegated to Seller or its subcontractors. Seller and all sub-tier suppliers are not authorized to disposition nonconforming or non-compliant material produced under this Agreement "Use as is" or "Repair."

Seller is not authorized to rework material unless the rework is performed in accordance with an API approved rework procedure. Approval is dependent on evidence of a previously validated rework process or will require a new process validation. Reworked material shall be restored to design conformance. Each shipment shall include records of reworked material contained within the shipment.

Use as is and Repair dispositions requires approval from API prior to implementation. Seller is not authorized to retest material without prior API approval.

Seller shall flow the substance of this clause to its subcontractors, including this sentence, changing the relationship of the parties as appropriate to preserve the intent of the words.

e) Sampling Procedures

The Seller shall perform or have performed all inspections and tests to demonstrate that all material furnished under this contract conform to all technical and contractual requirements. The Seller shall use the Sampling Procedures and AQL levels specified within the Technical Data Package (TDP). If the TDP does not specify a Sampling Procedure, the Seller shall utilize ANSI/ASQ Z1.4 (Rev 2008), General Inspection Level II, Single Sampling Plan for Normal Inspection. If the TDP does not specify an AQL for a characteristic, the following AQLs shall be used: Major Characteristics shall have an AQL of 0.40% and Minor Characteristics shall have an AQL of 0.65%. Unless otherwise specified in the TDP, Special/Safety/Critical Characteristics shall be inspected 100%.

The Seller shall maintain objective evidence of the completion and acceptance of all inspections and tests to the proper Sampling Procedure and AQL.

Seller shall flow the substance of this clause to its subcontractors that create characteristics identified in the TDP identified as Safety, Special, Critical, major, or Minor, including this sentence, changing the relationship of the parties as appropriate to preserve the intent of the words.

f) Inspection and Test Equipment Validation Plans and Reports

The seller and its suppliers shall maintain and ensure all production and manufacturing related equipment, including inspection and test equipment; tools; fixtures; jigs are appropriate and capable of the required accuracy and precision for determining conformance to all technical and contractual requirements, design, and performance and process characteristics.

g) Changes to a Qualified Baseline (Process Change)

Seller shall request and receive written API approval prior to making any changes that deviate from the qualified baseline process. This requirement includes, but is not limited to, changes caused by relocation of equipment and alterations to, or replacement of, production or inspection/test equipment, change of source of supply. Seller must make a formal request for any such change.

Any production process, including those at sub-tier suppliers, that has been out of production for more than 12 months shall be subject to revalidation requirements. Seller shall notify the API Purchasing Manager of any such out of production conditions.

Seller shall flow the substance of this clause to its subcontractors, including this sentence, changing the relationship of the parties as appropriate to preserve the intent of the words.

SQR: 24 Lot Report / Control

a) Lot Report (Delivered with Lot)

Seller shall provide the following lot documentation with each shipment (may be delivered via hardcopy with shipment or electronic media to buyer).

- 1) Seller Supplier Certificate of Conformance (C of C)
A C of C shall be provided by the Seller for each supplier used in the supply chain

The CoC shall list and contain:

- Sellers name and address
- Purchase order (PO) number
- Quantity of shipment
- Drawing number with drawing revision, specification number with revision, and any API CN(s) listed in the Letter of Transmittal (LOT)
- Seller lot identification (e.g. lot number)
- Material and process lot identification (e.g. material heat number or lot identifier, material finish and treatment lot identifier) representing the all materials and processes, including special processes, required by technical documentation.
- The C of C must include printed name, title, and signature of official signing the C of C.
- Statement attesting to compliance with all applicable technical requirements listed in the applicable portion of the Technical Data Package.
- Signature, title, and date of authorized seller quality assurance representative.

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For any certifications on which the Seller was not the manufacturer of an item, certifications must be traceable to and contain a copy of a certification from the manufacturer.

2) Materials and Process Lot Certification

Seller shall provide certification documentation and/ or objective evidence, at all levels of the supply chain, for all required materials and processes, as listed in the Letter of Transmittal documentation, used in producing the item. The documents should contain an authorized signature and date.

The Material certification shall list and contain:

-Applicable drawings and specification and the drawing / specification revision.

-Lot test data (e.g. chemical, physical, and mechanical properties) required by drawings or applicable specifications.

-All material and process lot identification shall be listed on the C of C and be traceable to the C of C

3) Special Process Certification

Seller shall provide a C of C, in compliance with section 1) above for all special processes (e.g. plating, coatings, cleaning, chemical treatments, heat treatment, non-destructive testing) performed in accordance with listed drawings and specifications. Special process test and other required data is not required to be provided with the lot documentation but shall be kept on file for review by API upon request.

SQR 25: DFAR 252.204-7008 Safeguarding Covered Defense Information Controls

<http://www.acq.osd.mil/dpap/dars/dfars/html/current/252204.htm>

SQR 26: DFAR 252.204-7009 Limitations on the Use or Disclosure of Third-Party Contractor Reported Cyber Incident Information

<http://www.acq.osd.mil/dpap/dars/dfars/html/current/252204.htm>

SQR 27: DFAR 252.204-7012 Covered Defense Information and Cyber Incident Reporting

<http://www.acq.osd.mil/dpap/dars/dfars/html/current/252204.htm>

SQR 28: DFAR 252.239-7010 Cloud Computing Services

<http://www.acq.osd.mil/dpap/dars/dfars/html/current/252204.htm>

SQR 29: No changes to Design, Material, or Process without written permission from API.

SQR 30: Eye Examinations

- 1) General Vision Requirements
 - a. Individuals who inspect material for final acceptance must have:
 - b. Color Vision Eye Examination every 12 months
 - c. Near-Vision Eye Examination every 12 months
 - d. The Individual(s) must meet the minimum standards in one eye, corrected with glasses or not corrected.
- 2) Color Vision Eye Examination
 - a. Examples of acceptable testing methods include: Pseudochromatic plates, Dvorine, Ishihara, Richmond, Farnsworth lantern, Keystone Orthoscope, Titmus vision tester, Titmus II Vision Tester, Titmus 2 Vision Tester. There are standard definitions of what is a pass/fail on these tests that should be followed.
- 3) Near-Vision Eye Examination
 - a. Examples of acceptable testing methods include: Snellen 14/18 or better, 20/25 or better, Jaeger type 1, Ortho-Rated 8 or equivalent method.
 - b. A medical professional must perform the eye examinations (eye clinic, occupational health clinic, onsite health clinic or medical department).
- 4) NDT Requirements
 - a. Near-Vision Eye Examination requirements for persons performing Nital / Temper Etch shall be Jaeger type 2 – 20/30 or equivalent.
 - b. For Inspectors certified to the requirements of NAS410 (NDT) or Mil-STD-867 (Nital / Temper Etch), and for personnel performing visual inspection of welds, suppliers may administer their own eye examinations per the standard.
- 5) Record Requirements
 - a. The records of the eye examinations shall be maintained by the Supplier.

SQR 31: Homogenous Lot Requirement

The supplier shall certify that the entire order quantity is the product of a single homogeneous manufacturing lot. A homogeneous manufacturing lot is defined as the number of parts of the same part number, produced from the same traceable raw material lot, under essentially identical conditions, during one manufacturing time span not to exceed six weeks and offered for inspection at one time.