
 <b>Edmund</b> optics   worldwide	DOCUMENT NUMBER:	Release Date: 05/07/2015
	<b>WI136</b>	Rev J
<b>QUALITY ASSURANCE PROVISIONS</b>		Updated on: 09/16/2024

**EDMUND OPTICS**  
  
**QUALITY ASSURANCE PROVISIONS**  
  
**MAY 7, 2015**  
 (INITIAL RELEASE)

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## QAP Scope, Purpose and Requirements:

**Purpose:** To define the Edmund Optics Inc. (EO) quality assurance provisions (QAP's) for materials received from suppliers. This document is intended for use by EO's suppliers to aid in the quality assurance and control of materials. QAP's communicate the additional requirements beyond those defined by the drawing, workmanship standard, or specifications.

**Scope:** This policy applies to all Purchase Order's (PO's) and Supply Contracts issued by EO.

### Requirements:

1. QAP's will be communicated to suppliers on EO PO's. If QAP's apply they will be displayed for each line item on the PO.
2. Standard requirements are requirements that must be met on every PO. They will be marked with an asterisk (\*).
3. The supplier must meet all QAP's as specified on the PO. If a supplier is unable to fulfill all QAP's as defined on the PO, written notification should be given to EO. If the supplier does not notify EO of the failure to meet the required QAP's, the lot will be rejected. EO must approve QAP changes in writing and/or by PO amendment prior to receipt of materials.

## Quality Systems

### QS101 Source of Supply:\*

The supplier is responsible for ensuring compliance of materials used to manufacture parts supplied to EO. A supplier will only purchase materials from Original Equipment Manufacturers (OEM's), standard catalogs, or OEM authorized distributors. The supplier must receive approval in writing from EO before purchasing materials from independent brokers for use in materials supplied to EO.

### QS102: - Obsolete -

### QS103 Control of Lower-Tier Suppliers:\*


The Supplier shall flow-down all applicable EO PO requirements. This includes but is not limited to, Terms and Conditions, EO's Code of Conduct, and QAP's, to Sub-Tier suppliers performing work involving this PO.

### QS104 Frozen Process Control:

The supplier will not implement any change(s) in the production process after the First Article Inspection (FAI/FAIR) approval without prior, documented approval from EO. The supplier may be asked to supply another FAI or Delta FAI if the change is approved. A change in the production process can include, but is not limited to:

- Material – Changing the material used in production.
- Process – Changing the sequence of the manufacturing steps and/or changing the established process control.
- Location – Changing the location of facilities and/or addition or subtraction of machines used in production.
- Packaging – Changing the final packaging.
- Other – As defined on the Purchase Order.

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**QS105 Product Control:\***

The supplier will notify EO of significant changes to a supplied product prior to shipping of the product. The changes to the supplied product include, but they are not limited to:

- Aesthetics – The visual appearance of the supplied product is different.
- Fit – The ability of a part to physically interface with, or connect to, another part is different.
- Form – The physical dimensions of the supplied product are different.
- Function – The performance of the supplied product is different.
- Interchangeability – The supplied product is substituted for a different product, regardless of whether the substituted product can meet or exceed the quality requirements.
- Identification – The internal or external part number or revision of the supplied product has changed.

**QS106 Lot Control: See QS110A**

**QS107: - Obsolete -**

**QS108 Control of Quality Records:\***

EO works within several highly regulated industries, these include but are not limited to:

- Defense and Aerospace
- FDA and pharmaceutical
- Medical Device

All records related to the manufacturing, testing and inspection of parts supplied for an EO PO will be maintained for a minimum of 7-years unless otherwise specified by EO. The records and data generated shall be clear, legible, and show evidence of conformity to specified requirements. On request the records will be made available to EO within 72 hours. The requirements of the industries vary, but additional stipulations related to record retention, and control will be outlined in the PO. Questions about requirements should be directed to the Solutions Engineer (“SE”) or Supplier Quality Engineer (“SQE”).

**QS109 Subcontracted Coated Parts:\***


For orders where EO owned material is used for subcontracted optical thin film coating services, the following processes are expected to be used by the supplier.

- Sticker procedure (**PR061**) – procedure on how to package and return rejected material to EO.
- Supplier portal (**WI309**) – System used to record and track reasons for rejects by Suppliers.  
<https://eolive.edmundoptics.com/supplierportal>

**QS110(A-D) Lot Control:**

Lot control is a multi-level commitment that requires Edmund, our suppliers, and their respective suppliers to comprehend and execute proper identification and packaging of finished goods. The primary purpose is to ensure lot traceability of parts that are produced under the same conditions, e.g. manufactured using the same material, following a standard process and/or sub process, or using the same equipment/facility.

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Only parts from the same lot shall be batched and shipped together, segregated from other lots. The lot number and quantity shall be visible on the individual packs, bulk packs, and /or intermediate containers. All accompanying documents, such as packing lists or certifications, shall include the lot number and quantities to ensure proper handling at receipt. The lot number shall be unique to that lot, non-repeating, and shall not be re-used.

When two or more parts are joined in an assembly, the supplier shall prepare an assembly parts list identifying each item in the assembly. Records of traceability shall be available for review by EO upon request.

The lot control level will be denoted by the QAP designator and a letter (Ex. QS110A):

- A. **Top Level** – Basic level of lot control where each finished product lot is tracked using the manufacturer's internal lot or batch number, traceable to the EO Purchase Order number.
- B. **Top Level with In-House Processing Control** – Extends the top-level control to include traceability of in-house processing steps, such as assembly, coating, or testing.
- C. **Cradle-to-Grave** – Comprehensive traceability from raw materials to the final sellable product. This level includes tracking of all components, subassemblies, in-process measurements, and any processing steps throughout the supply chain.
- D. **Other** – As defined on the Purchase Order

**QS111 Serialization:**

A serialization system must be implemented to minimize the scope and impact in case of product recalls. A method involving physically marking parts with unique identifiers to link final goods to production processes, facilitating root cause analysis is required. The marking must be on 100% of the parts on the order, legible, and placed as to not impact performance. Serialization must be unique to each order to ensure effective containment with or without Edmund PO information.


Suppliers are accountable for maintaining the integrity of the serialization system across the entire supply chain. Effective traceability must ensure that delivered products can be traced from their final application back to specific lots, sub-components, raw materials, and subcontracted processes. Reference QS110 for additional details on lot control guidelines.

**QS112 Change Control:**

Change Control is a systematic approach to managing all changes made to a product, process, or system. It ensures that any proposed changes are evaluated, approved, documented, and implemented in a controlled manner.

The change control process requires suppliers to request changes with detailed rationale and risk assessments. EO reviews and signs off on supplier approvals, detailed implementation plans, and provides oversight throughout the process. During verification and validation, a First Article Inspection (FAI) is conducted to ensure the product meets all specifications, with EO reviewing and approving FAI results and other validation activities. Suppliers must maintain open communication about changes affecting the supply chain. The process is closed with EO's sign-off on all documentation, confirming compliance and readiness for production.

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The various change control levels are below and will be flowed down on the PO.

Level of Change Control

1. Changes to Form, Fit, or Function:
  - o Any modification that affects the form, fit, or function of a part requires a documented change control process. This includes changes in the physical dimensions, geometry, or operational function of the part.
2. Changes to Manufacturing Location:
  - o If the manufacturing location changes but the part's form, fit, and function remain the same, change control must be documented. This ensures the new location meets the same quality and process standards as the original.
3. Changes to Machines or Process Sequences:
  - o In addition to changing the manufacturing location, any changes to the machines used (same, similar, or different machines) or to the process sequences for assembly or production require a documented change control. This ensures consistent product quality and process reliability.
4. Changes to Test Equipment:
  - o Along with the changes mentioned in #3, any modifications to the test or inspection equipment (same, similar, or different equipment) during or after production must be documented. This is critical to maintaining the accuracy and consistency of quality testing.
5. Changes to Suppliers:
  - o If there are any changes to the suppliers of components, in addition to changes in machines and test equipment, a documented change control process is required. This ensures the new suppliers meet all necessary quality standards and specifications.
6. Changes to Raw Material Types:
  - o The most comprehensive level of change control involves changes to the type of raw material used, in addition to all the changes listed in #5. This level ensures that any new materials are properly evaluated for their impact on the final product's quality and performance.

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## Quality Documents

### QD200 Identification, Preservation, Packaging, and Packing:\*

All shipments to EO must be packaged to avoid damage and deterioration. The parts must be shipped to the address specified on the PO unless otherwise noted. The packaging and packing shall be in accordance with good commercial practices unless otherwise specified on the PO. Each box or container shall be labeled and have as a minimum the following information: (1) EO part number and revision, (2) PO number, (3) Quantity and (4) Supplier's part number and revision, where applicable. The parts shall not be mixed together.

### QD201: - Obsolete -

### QD202 Packing slip information:\*

Packing slips must contain the following information, in clear, large print, text unless otherwise specified.

- Vendor Packing Slip Number
- Edmund PO number
- Edmund PO line-item number
- Quantity shipped
- Edmund Part Number and Revision
- Edmund Part description
- Vendor Name
- Vendor Part Number and Revision (if applicable)
- Batch traceability lot information (if applicable)

### QD203 Hazardous Material / SDS and Manufacturer's Product / Technical Data Sheets:

The supplier must ship or email to the SQE, SE or Buyer one (1) copy of a Safety Data Sheet (SDS) meeting OSHA standards, and one (1) copy of the Manufacturer's Products/Technical Data Sheets with this order.

### QD204: See QD222A

### QD204A: See QD222B

### QD204B Thorium Free Certificates:


Thorium-free certificates are records that indicate a material has been tested by a third party, or the material is confirmed by the raw material supplier to be free of Thorium. These certificates must include:

- The name of the material
- The supplier of the material
- The body that is certifying the material is free of Thorium

### QD204C Laser Damage Testing:

Unless otherwise specified by Edmund, the Supplier shall be responsible for reporting Laser Damage Testing results in accordance with ISO 21254, the drawing specifications, and as defined by Edmund on

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the Purchase Order. A laser damage threshold report must be performed by a qualified laboratory as part of the first article inspection (FAI) documentation and upon request. Laser damage certification, stating that the shipped product meets laser damage requirements, shall be provided for each lot to Edmund upon request after FAI acceptance. All coatings must be tested for resistance at least once a year, unless otherwise directed by EO. A new damage resistance qualification test shall be performed and provided to Edmund when any change in the coating process or material type occurs, including changes in cleaning preparation before coating.

Written agreement must be provided when testing outside of the drawing specifications is required. A statement of the test performed must be provided with the LDT report.

**QD205: See QD205A**

**QD205A EU RoHS Compliance:**

The parts under this PO shall be compliant with the latest version of the European Union’s RoHS directive. This QAP shall consider all items supplied to EO as components of electrical equipment that fall within the scope of RoHS. The RoHS directive restricts the use of the following ten substances: Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr6+), Polybrominated biphenyls (PBB), Polybrominated diphenyl ether (PBDE), Bis (2-Ethylhexyl) phthalate (DEHP), Benzyl butyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP).

The supplier shall provide written notification for compliance on the first shipment and upon request to be substantiated and any claimed exemptions must be clearly stated in this certificate.

**QD205B China RoHS Compliance:**

The parts under this PO shall be compliant with the latest version of the European Union’s RoHS directive without the use of exemptions. This QAP shall consider all items supplied to EO as components of electrical equipment that falls within the scope of RoHS. The RoHS directive restricts the use of the following ten substances: Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr6+), Polybrominated biphenyls (PBB), Polybrominated diphenyl ether (PBDE), Bis (2-Ethylhexyl) phthalate (DEHP), Benzyl butyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP).


The supplier shall provide written notification for compliance to be substantiated.

**QD206 Certificate of Conformance (C of C):**

The materials supplied on the purchase order must be accompanied by a Certificate of Conformance (CofC). The document will be in addition to any other applicable documentation requirements. The following is a list of minimum requirements to be included on the document:

- A statement certifying that the supplied material has met all PO and/or drawing requirements.
- EO PO Number, Part Number with Revision Level, Serial Numbers (if applicable), and Lot/Batch number.
- Authorized signature.

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A copy of the CofC must be uploaded to the EO Supplier Portal. If a CofC is a part of the packing slip, it must also be uploaded to the portal.

**QD207 Optical Coating Scans:**

An optical coating (spectral) performance measurement must be documented for each coating run and available upon request within 24 hours. A copy of the scan meeting the following requirements must be uploaded to the EO Supplier Portal.

- The spectral scan must be performed on the same or equivalent material. This is defined as a material with an Index of Refraction (Index) within 0.06% of the substrate material. Chemically strengthened substrates must be verified on equivalently processed material.
- The measured and calculated values must be included on the document and reference the coating specifications. The raw data, as a CSV file, must be provided and available on the Supplier Portal.
- The spectral scan must be legible with the part number, PO, and coating run number included on the document.
- The graph must be set to an appropriate scale to display all data points and wavelengths (2nm or better) and the graph axes must be set to the coating specification area.
- If multiple lots are shipped under the same coating run, the parts and coating scans, must be traceable to their respective coating runs without exception.
- A copy of the Spectral scan must be uploaded to the EO Supplier Portal. A hard copy of the spectral scan may be shipped with the parts.

**QD208 Optical Coating Witness Piece:**


A single witness piece of the same or equivalent substrate material (an Index of Refraction within 0.06% of the substrate material) must be processed along with each coating run and provided to EO adhering to the below requirements:

- Each coating run is defined as the finished coating design, and one witness piece shall be provided per side.
- Witness pieces intended to be measured in Reflection shall have the backside ground unless otherwise specified.
- The witness piece shall be at least 25.4mm in diameter. Witness slides of equivalent surface area are permitted.
- Witness pieces must be packaged separately and securely with the PO, coating run number, and side number written on the packaging.
- Multiple lots that are shipped from the same coating run, must have the shipping documentation or certificate of compliance, traceable to each coating run.
- Witness pieces used for durability or environmental testing must follow the requirements outlined in the drawing. Additional drawing or PO specifications may necessitate extra witness pieces being requested (i.e. spherical parts, LDT test samples, durability test samples).

**QD209 Right of Access:**

The supplier shall provide EO, its customers, and regulatory authorities access to all facilities involved in fulfillment of the PO, and to all applicable records when requested. This access may be required for

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inspection and auditing of the facilities, processes and procedures used in manufacturing materials that EO purchases.

**QD210: - Obsolete -**

**QD211 Heat Treatment and Marking of Wood Packaging Materials:**

All non-manufactured wood used in packaging shall be heat treated to a core temperature of 56 degrees Celsius for a minimum of 30 minutes in accordance with ISPM15. The box/pallet manufacturer and the manufacturer of wood used as inner packaging shall be affiliated with an inspection agency accredited by the board of review of the American Lumber Standard Committee. The box/pallet manufacturer and the manufacturer of wood used as inner packaging shall ensure traceability to the original source of heat treatment.

Each box/pallet shall be marked to show the conformance to the International Plant Protection Convention Standard. Boxes/pallets and any wood used as inner packaging made of non-manufactured wood shall be heat-treated. The quality mark shall be placed on both ends of the outer packaging. Foreign manufacturers shall have the heat treatment of non-manufactured wood products verified in accordance with their National Plant Protection Organizations compliance program.

**QD212 Specialty Metals:**


This PO is subject to the Defense Federal Acquisition Regulation Supplement (DFARS) clause 252.225-7009, Restriction on Acquisition of Certain Articles Containing Specialty Metals. By acceptance of this order the supplier agrees to provide a certificate of compliance to the DFARS requirement. The supplier shall list the “qualifying country” of origin (refer to DFARS clause 225.003) of specialty metals on the material certification provided. The supplier shall flow down this requirement to all sub-tier suppliers. DFARS clauses can be accessed at <http://www.acq.osd.mil/dpap/dars/dfars/index.htm>.

**QD213 Conflict Minerals:**

The supplier shall have policies and procedures in place to determine whether parts and products supplied to EO are DRC conflict free (i.e., do not contain metals derived from “conflict minerals”). These policies and procedures shall be consistent with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. Conflict minerals include columbite-tantalite (tantalum), cassiterite (tin), gold, wolframite (tungsten), or their derivatives that directly or indirectly finance or benefit armed groups through mining or mineral trading in the Democratic Republic of the Congo or an adjoining country.

The supplier must conduct a Reasonable Country of Origin Inquiry (RCOI) to determine if the minerals utilized to manufacture the products and or materials procured under this PO originated from the covered countries or are from recycled or scrap materials as described by the Dodd-Frank Act. The supplier will upon request provide information necessary for EO to comply with its conflict minerals reporting requirements to the SEC and EO’s customers.

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**QD214 EU REACH Regulation:**

Supplier shall inform EO if the item being supplied is a chemical preparation, mixture, or article that contains any Substances of Very High Concern (SVHC) as established by the European Union’s REACH Regulation <http://echa.europa.eu/web/guest/regulations/reach>. The supplier shall also supply EO with the following information on the first shipment and upon request:

1. A complete material and/or chemical breakdown of the items being supplied to share with EO customers, or
2. A current, dated certificate of compliance certifying that SVHC’s, as defined above, are not present as per the most recent REACH revision.

**QD215 Export Classification and Country of Origin:**

The supplier shall provide the export classification for items they design, and the country of manufacture of the purchased item. The International Traffic in Arms Regulations 22 CFR Chapter I, Subchapter M, Parts 120-130 and the Export Administration Regulations 15 CFR Chapter VII, Subchapter C, Parts 730-774 contains the necessary information on making export classifications. NOTE: EO maintains a rigorous export compliance program which includes a list of restricted countries based on US trade restrictions and concerns that EO will not sell to or do business with. In addition, customers who indicate they are exporting materials are reviewed against the US Denied Parties List. For additional details refer to EO’s Policy PM006 Standard Product Use & Screening.

**QD216 ITAR Requirements:**


This PO and/or associated documents may contain ITAR controlled technical data as defined by 22 CFR 120.10 and may not be forwarded and/or disclosed to any Foreign Person or Non-US Citizen as defined by 22 CFR 120.16. In addition, this PO and/or the technical data associated with this PO may not be forwarded to sub-tier suppliers without the written consent of EO. If this requirement cannot be met, the supplier must inform EO upon receipt.

**QD217 Counterfeit Parts:**

The supplier shall maintain a counter risk mitigation process internally, and with its suppliers. The supplier shall provide evidence of said process to EO upon request. The process shall meet or exceed AS5553 Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, & Disposition.

The supplier must certify that only new and authentic materials are used in products delivered to EO, and they contain no counterfeit materials. The supplier shall purchase authentic parts/components directly from the Original Equipment Manufacturer (OEM) or through the OEM’s authorized distribution chain. If the supplier is not the OEM or a franchised or authorized distributor, the supplier confirms by acceptance of this PO that each product supplied to EO has been procured from the OEM or a franchised or authorized distributor of the OEM. The supplier shall flow the requirements of this provision to its subcontractors and suppliers at any tier for the performance of this PO. The supplier shall make OEM documentation available that authenticates the traceability of the components to the applicable OEM.

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**QD218 Interferograms:**

Interferograms are interferometric measurements to be completed by a supplier with a printed copy of the measurement to be provided to EO by the time they are received at the EO facility. These documents are to be uploaded to the EO Supplier Portal unless otherwise agreed upon with EO. These records must include the following information with the measurement:

- The clear aperture measured
- Measured value
- Any filters that were applied
- The part number
- The serial number, if applicable
- The software used to make the measurement
- The corresponding .dat or digital file of the measurement

**QD219 Asphere Inspection Records:**

A delivery requiring asphere inspection records must include a recorded measurement completed with appropriate metrology (e.g. profilometer, interferometer etc.). These records must be submitted via the EO Supplier Portal unless otherwise agreed upon. These types of records must include the following information with each measurement at a minimum, and they must be traceable to the measured piece for measurement validation:


- The clear aperture used
- Measured values
- Any filters that were applied
- The part number
- The serial number of the sample, if it is a piece from an FAI lot
- The software used to measure
- The corresponding .dat, .prf or digital file of the measurement
- The deviation from the specified profile
- The part shall be measured at several orientations to ensure stigmatism are captured.

**QD220 Raw Material Records and Certificates:**

A finished product may require traceability to the raw material used in production. This is critical in ensuring the finished product meets minimum standards for acceptance. This type of record includes the following information, at a minimum:

- The name of the raw material
- The manufacturer of the material
- The country of origin
- The grade (if applicable)
- The refractive index (if applicable)
- The abbe number (if applicable)
- Melt No. and Lot No. (if applicable)
- Anneal grade, striae grade, and bubble grade (if applicable)

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**QD221: - Obsolete -**

**QD222(A-C) Supplier Inspection Report:**

The Supplier must provide an Inspection Report with measured values and appropriate certificates showing the conformance to the specification, standard, or drawing requirements. The report must be submitted via the Edmund Optics Supplier Portal by goods receipt unless otherwise agreed upon. The report must be available to the buyer upon request for a period of not less than seven (7) years from the closing of the Purchase Order. After which time, the Supplier shall not destroy such records without giving Edmund Optics ninety (90) days advance written notice.


Measurement results for variable data must be recorded with actual values, while attribute data may be documented as pass/fail. The data sheet must include the inspection method used to verify the characteristic/feature.

The record type will be denoted by the QAP designator and a letter (Ex. QD222A) defined in the following classes. If any tests are conducted by an external laboratory or service (third-party tests), a test report must be provided for all classes.

- A. Final inspection report for all characteristics identified by Edmund and Supplier’s internal critical characteristics. Edmund will indicate these on the drawing, PO, or datasheet. A sample of 5 pieces must be used unless otherwise stated by EO.
- B. In-process inspection report for all characteristics identified by Edmund and Supplier’s internal critical characteristics. Edmund will indicate these on the drawing, PO, or datasheet. A minimum sampling plan of AQL Level II must be used unless otherwise stated by EO. In-process inspection reports are expected to operate under the AQL=0.65 acceptance plan unless otherwise stated by EO.
- C. 100% inspection report for all characteristics on all parts.

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## Quality Control

### QC300 Vendor Documentation Portal:\*

The supplier will upload the required documentation in the EO Supplier Portal prior to the parts arriving at EO. Required documentation will be outlined on the PO or on the drawing. See EO WI309 – Supplier Portal instructions located at <https://eolive.edmundoptics.com/supplierportal>.

### QC301 Supplier Material Review Board (MRB) Authority:\*

The Supplier does not have MRB authority to ship non-conforming material as defined by EO specifications. A nonconformance in final product to the purchase order, drawing, specifications or applicable documents must be submitted to EO and approved prior to shipment. The supplier is required to utilize EO Supplier Request for Deviation form (SDR FR080). Please contact an SQE to obtain this form.

### QC302 Shelf Life:\*

No materials with a shelf-life date will be shipped to an EO PO with less than 80% of the full shelf-life as determined by the original manufacturer unless previously approved in writing by EO. The expiration dates shall be clearly recorded on the packaging, and the shipping documents.

### QC303 Environmentally Sensitive Material:\*

Environmentally sensitive material is defined as any material that requires specific environmental controls to prevent degradation or damage when opened or handled in normal storage conditions. These conditions are defined as temperature between 60 and 75 degrees Fahrenheit, and humidity of 19%-50%.

The supplier must identify each shipment of environmentally sensitive material with the special handling and storage conditions. The conditions shall be identified on the shipping document and outside of primary and/or intermediate packing containers.

**QC304: - Obsolete -**

**QC305: - Obsolete -**


### QC306 AS9102 First Article Inspection:

A first article inspection is required for this PO. It must be provided on an AS9102 formatted FAI form. The form must address all specifications, dimensional call-outs, notes, and subcomponent drawings.

### Documentation Required:

- Completed and signed First Article Inspection Report following the AS9102 standard with all 3 forms (Part Number Accountability, Product Accountability, and Characteristics Accountability, Verification, and Compatibility Evaluation).
- Ballooned drawing.
- Special process certifications – A special process includes but is not limited to electroplating, inking, painting, sand or bead blasting, engraving, etc. If the supplier is unsure if they are using a special process, please contact the appropriate Buyer or SQE.
- Raw material certificates per QD220.

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**Sample selection:**

- 1 part shall be measured and recorded unless otherwise specified. A requirement for a larger sample will be noted on the PO.
- The sample must be selected from the first production run. A first production run is defined as the first manufacturing run which is intended to ship against the initial PO. Prototype parts, or parts built using methods different from those intended for the normal production process, shall not be considered as part of the first production run.
- When multiple samples are used, they must be randomly pulled and represent the beginning, middle, and end of the production run.
- All parts in the sample must be serialized via a bag-and-tag method or a temporary method of identification that is removable with standard cleaning methods. The sample parts must be segregated from the remainder of the lot and identified as “First Article Samples” when shipped to EO. All primary and intermediate shipping containers that contain FAI sample(s) must also be marked.

To support subcontract processes, it is strongly recommended to save all FAI records in digital format and, if applicable, a digital copy of the FAI must be provided within 24 hours upon request.

**QC307 Source Inspection:**

Materials supplied to this PO require source inspection by EO or a government representative prior to shipment. The supplier will notify EO five business days in advance when parts and materials will be ready for source inspection. It is the supplier’s responsibility to ensure the material conforms to the specified requirements prior to requesting source inspection.

**QC308 Electrostatic Discharge Control (ESD):**

It is the supplier’s responsibility to ensure all electrostatic sensitive devices shall be packaged, marked and handled in compliance with ANSI/ESD S20.20 or ANSI/ESD S541 (or approved equivalent).

**QC309 ANSI ZI.1, ZI.2 and ZI.3 – Statistical Process Control (SPC) and Analysis:**

The supplier shall control and validate product quality using Statistical Process Control techniques as defined in the American National Standards Institute (ANSI ZI.1, ZI.2 and ZI.3) when specifically required by the PO or production drawing. The supplier shall submit an SPC plan detailing the processes to be monitored and controlled. This plan will include a time-phased schedule for total implementation of the SPC Program on all applicable deliverables. Control charts shall be maintained for identified [SPC plan] operations.


**QC310: - Obsolete -**

**QC311: - Obsolete -**

**QC312 Control Plan:**

The Supplier shall prepare a detailed control plan, including all measurement and testing methods. The plan shall include name, type, accuracy and calibration date of measuring and test equipment, as well as measuring record forms that are required for in-process and/or final acceptance of product. For

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measurement or testing of parts performed in-process, the plan shall include a process flow. Inspection plan requires EO approval prior to delivery of the first product.

**QC313 First Article Inspection:**

A first article inspection is required for this PO. The form must address all specifications, dimensional call-outs, notes, and subcomponent drawings.

**Documentation Required:**

- Completed and signed First Article Inspection Report.
- Ballooned drawing.
- Special process certifications (when applicable)
- Raw material certificates per QD220.


**Sample selection:**

- A minimum of 5 parts shall be used unless otherwise specified. A requirement for a larger sample will be noted on the PO.
- The sample must be selected from the first production run. A first production run is defined as the first manufacturing run which is intended to ship against the initial PO. Prototype parts, or parts built using methods different from those intended for the normal production process, shall not be considered as part of the first production run.
- Parts must be randomly pulled and represent the beginning, middle, and end of the production run.
- All parts in the sample must be serialized via a bag-and-tag method or a temporary method of identification that is removable with standard cleaning methods. The sample parts must be segregated from the remainder of the lot and identified as “First Article Samples” when shipped to EO. All primary and intermediate shipping containers that contain FAI sample(s) must also be marked.

To support subcontract processes, it is strongly recommended to save all FAI records in digital format. If applicable, a copy of the FAI must be provided within 24 hours upon request.

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## Quality Testing

### QT400 Environmental Test, Filter Assembly:

The Assembled Filter shall meet all spectral and cosmetic requirements after being exposed to a temperature  $\geq +71.1^{\circ}\text{C}$  for a minimum of 5 hours, and a temperature of  $\leq -26.7^{\circ}\text{C}$  for a minimum of 5 hours. The cemented components shall not develop "feathering", show evidence of separation or softening of cement or other defect as a result of the temperature exposure.

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<b>Reference Documents</b>		
<table style="width: 100%;"> <tr> <td style="width: 50%;">Sticker procedure (PR061)</td> <td style="width: 50%;">Supplier portal (WI309)</td> </tr> </table>	Sticker procedure (PR061)	Supplier portal (WI309)
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Revision History			
Rev.	Date	Description	Updated by
-	05/07/2015	Initial Release	J. Budd
A	07/09/2015	Updated QAP doc	R. Hinton
B	03/31/2016	Updated QAP doc	B. Plodzyn
C	05/14/2020	QAP's reformatted and updated	M. Green / C. Hennessey
D	02/02/2021	Updated template, owners	J. Misner
E	07/20/2021	Added QS109	R. Bortner
G	02/10/2022	Added QT400	C. Hennessey
H	11/28/2022	Updated Work Instructions	C. Hennessey
J	09/16/2024	Updated QAPs – Changed many QAPs to obsolete status	C. Hennessey

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**Effective Date:**  
09/16/2024

**Responsible Party:** Ciaran Hennessey

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