

Quality Clauses:

Q-1 Quality Control (AS 9100D Clause 8.4.1; Clause 8.4.3k)

Supplier must ensure that the clauses associated with this purchase order are flowed down to all its sub-tier suppliers. Supplier is required to direct all its external providers to ensure that the requirements of the final product are met.

Q-2 Quality System (AS 9100D Clause 8.4.3k)

The Supplier must have a Quality System consistent with industry standards. The Buyer reserves the right to review the Supplier's Quality system.

Q-3 Buyer Review (AS9100D Clause 8.4.3f)

During the performance of this Order, the Buyer reserves the right to review; verify and/or analyze the Supplier's Quality and/or Inspection System and Manufacturing processes at the Supplier's facilities. The Buyer's representative must notify the Supplier forty-eight (48) hours in advance of the intended review start date and duration. Buyer's inspection/acceptance of product prior to shipment is not required unless otherwise specified in this Order.

Q-4 Notification of Process Changes (AS 9100D Clause 8.4.3d)

Supplier must notify buyer in writing of changes in product and/or process, changes of its own suppliers, changes of manufacturing facility location and, where required, obtain buyer's written approval.

Q-5 Product Disposition (AS 9100D Clause 8.4.3k)

Supplier must obtain buyers written approval for nonconforming product disposition.

Q-6 Requirements for Sampling (AS 9100D Clause 8.4.3j)

Where the Supplier utilizes sample inspection plans or other statistical techniques, these must be statistically valid. If the sample contains rejected items, the Supplier must, for the rejected feature or parameter, use a documented method, such as 100% screening to assure the buyer that zero rejects are present.

Q-7 Product Acceptance (AS 9100 Clause 8.4.3b)

The Supplier must follow all requirements stated on the purchase order, drawing, data specifications and process instructions to ensure product conformity, documentation and records are obtained.

Q-8 Test Specimens (AS 9100D Clause 8.4.3k)

When requested by Laritech or its customers, Supplier will provide test specimens for inspection/verification, investigation and/or auditing purposes.

Q-9 Design and Development Control (AS 9100D Clause 8.4.3g)

When design and development activities are applicable to the product/services provided by Supplier, the Supplier agrees to maintain adequate design and development control including proper review, validation, and verification activities. Supplier also agrees to control design changes and maintain records as appropriate.

Q-10 Qualification and Awareness of Personnel (AS 9100D Clause 8.4.3c; 8.4.3m)

The Supplier must employ competent personnel to ensure Buyer's requirements are met. Supplier must ensure that their employees are aware of their contribution to product or service conformity, their contribution to product safety, and the importance of ethical behavior.

Q-11 Record Retention (AS9100D Clause 8.4.3k)

The Supplier must maintain records regarding Buyer's purchase order, specifications, drawings, process requirements, inspection/verification instructions and other relevant technical data. Records must be maintained by the Supplier for a minimum of 10 years or as specified by the Buyer after which the Supplier agrees to either return or destroy related records.

Q-12 Access to Facilities (AS 9100D Clause 8.4.3l)

The Supplier agrees to permit access to the Supplier's facility for surveying/auditing, if needed. The survey/audits may include personnel from the Buyers, Buyer's customer representative and/or regulatory authorities, and must include access to all records applicable to Buyer's product or orders.

Q-13 Counterfeit Parts Detection and Avoidance System Requirements (AS 9100D Clause 8.4.3k)

Supplier must detect and prevent the use of counterfeit, suspect counterfeit, unapproved, or suspect unapproved parts. Suppliers shall have an established Counterfeit Parts Control Plan in compliance with a recognized industry standard (e.g. SAE AS5553C, SAE AS6496, SAE AS6081, etc.)

Q14 Supplier Performance Expectations (AS 9100D Clause 8.4.3e)

Unless otherwise specified, seller agrees to adhere to meeting or exceeding 90% on-time delivery of product and 90% product quality ratings.

Q-15 Notification of Nonconformance

Supplier must notify the buyer of any major nonconforming product or sub-component of the product verbally and in writing as soon as nonconformance is detected. Major nonconformance means the product or a sub-component of the product will not meet a specification.

Q-16 Requirements for Conformance

Neither surveillance, inspection and/or tests made by the Buyer or Buyer's representatives at either the Supplier's or Buyer's facility, nor the Supplier's compliance with all applicable product assurance requirements relieve the Supplier of the responsibility to furnish items which conform to the requirements of the purchase order.

Q-17 Special Processes

The Supplier and any of its subcontractors performing special processes, which are non-standard according to their approved process flow, must submit a certification listing the specification designation/number and that the special process was performed in accordance with such specification.

Q-18 Traceability requirements

The Supplier must provide means of end item traceability. The Supplier may use the original manufacture Lot/Date Code/Serial number or their own method for identifying the end item product as required for proper traceability. Serialized shipments must have the serial numbers listed on the shipper and on the corresponding intermediate packaging.

Q-19 Identification and Revision Status

The Supplier must maintain the identification and revision status of all documented information provided by the Buyer, including but not limited to specifications, drawings, process requirements, inspection/verification instructions and other relevant product/order related documentation.

Q-20 Calibration

The Supplier must maintain the calibration of equipment(s) used to manufacture, test, control, monitor, or measure processes. The calibration standards used must be traceable to international or national measurement standards; when no such standards exist, the basis used for calibration or verification is retained as documented information.

Q-21 Packaging & Shipping

The Supplier must use special packaging as required on this order, or when not specified, Supplier may use specially designed shipping containers and/or good commercial practices as deemed necessary to prevent shipping damage. Each item/pack of components should be labeled individually unless doing so would harm the component. As a minimum, the label must contain the following information: Part number, quantity, date of manufacture and Purchase Order number.

Q-22 Supplier Corrective Action

In response to Buyer-initiated corrective action requests, Supplier must advise Buyer of root cause determination, corrective action taken to prevent recurrence of reported problems and/or discrepancies, and effectively dates of the planned corrective action(s). Supplier must maintain a corrective action system that determines the effectiveness of such corrective actions, and that prevents shipment of nonconforming articles without prior approval from Buyer.

Q-23 Certificate of Conformance

The Supplier must furnish a Certificate of Conformance either by email or with each delivery attesting that each item of hardware and/or software conforms to all requirements of the Buyer's specification and purchase order and that all required test and inspections have been performed

Q-24 Source Inspection

Source Inspection may be conducted by the Buyer at the Supplier's facilities or where designated in this Order prior to shipment. Inspection/test and/or in-process inspection/test of the articles specified in this Order must be performed by the Supplier and may be witnessed by the Buyer's Quality Representative. Prior to fabrication start, the Supplier and the Buyer must determine the process steps at which Source Inspection must be conducted. The Supplier must notify the Buyer of the scheduled inspection/test five (5) days in advance. The method of product release must be a stamp or signature by the Buyer's Quality Representative on the Supplier's shipping or inspection documents.

Q-25 Certification of Material(s) and Process(es)

The Supplier must submit certifications for raw material (chemical and physical characteristics) and/or processes (stating specification) used in the manufacturing of the item(s). If outside processing is performed; a certification from subcontractor is to be provided. Note: Raw material such as titanium, aluminum, etc. must have the appropriate heat lot identified on each piece for heat lot traceability.

Q-26 First Article Inspection

Upon request, A First Article Inspection (FAI) shall be performed in accordance with the requirements of AS9102 ("Aerospace First Article Inspection Requirement") as per the revision level established at time of purchase order (PO) issuance. FAI Reports (FAIR) and supporting documents shall be retained by the supplier and provided to Laritech, Inc. when requested by the Buyer.

All fields indicated on the AS9102 FAIR Form 1 are mandatory. Any FAIR form generated shall not contain open fields. To ensure each field of the FAIR has been reviewed, the supplier shall mark all open or unused fields "N/A."

If the supplier already has FAI documentation on file for the same configuration of product noted in the PO and is still compliant with AS9102, a new FAI is not required.

Q-27 DPAS/Rated Orders

When applicable:

"This is a rated order certified for national defense use, and you are required to follow all provisions of the Defense Priorities and Allocations System regulation (15 CFR 700).

Q-28 PCB Manufacturing (Applies to PCB manufacturers)

1. Unless otherwise provided by Laritech, the PCB manufacturer may choose the panel size and place as many boards on a panel to achieve maximum efficiency for fabrication and assembly. The suggested panel drawing shall be sent to Laritech for approval prior to fabrication. The panel shall be robust enough to handle the rigors of assembly without failure. The minimum panel size will be 80mm x 80mm. The maximum panel size will be 400mm x 450mm. Once the panel has been established, it may only be changed with written approval from Laritech.

2. A solder sample must be provided with all orders.

3. Any copper thieving changes that pertain to the INDIVIDUAL BOARDS must be approved in writing by Laritech. Copper thieving added to the panel border does not require approval.

4. BGA/LGA pads shall not have unfilled holes/vias and shall have a surface plating in accordance with IPC-A-600-J 2.7.1.2 class 3. Holes or vias in pad locations other than BGA/LGAs must receive written approval from Laritech prior to board manufacture. If vias adjacent to BGA pads are not tented with soldermask, put the build on hold and notify Laritech immediately.

5. Silver or OSP (organic solderability preservative) plating is not acceptable. Contact Laritech for approved substitute or a per case exemption.

6. If the fabrication drawing specifies RoHS, then standard FR4 material is never acceptable. A minimum of FR4/TG170 must be used even if FR4 is called out on a RoHS board as this would indicate an error in the documentation. If this occurs, contact Laritech for clarification.

7. Should any laminate substitution be desired (such as substituting 185HR or 370HR for IPC-4101/FR4 or FR406), written approval must be obtained from Laritech prior to manufacturing.

8. V-score and route and retain panelization are both acceptable methods to be determined on a case-by-case basis. Route and Retain panelization is expected for irregularly shaped boards, or if components overhang the edge of the PCB. Adequate space between circuits must be provided where necessary to allow all components to be installed on the panelized PCBs. V-Score shall only be applied to boards of a perfectly rectangular shape. Laritech must approve any deviation to these methods.

9. All boards, including those that are individually routed, shall have rails. The rails of the panel shall be between 0.250" (6.35mm) and 0.500" (12.7mm). Standard fiducials shall be placed at 3 corners of the rails and fiducial size shall be 0.040 – 0.060" (1.0 – 1.5mm). All panel corners shall have a radius as shown below. Boards that are scored shall have a v-cut to remove the panel rails.



Q-29 PCB Requirements (Applies to PCB manufacturers)

All PCB deliveries shall include the following

1. RoHs Certification (if applicable)
2. Electrical Test Certification or a test results report
3. IPC Class Certification
4. Final inspection report and/or dimensional report
5. Solder sample

PCB's are to be delivered in vacuum sealed packaging that includes a desiccant pack and a moisture/humidity indicator card. Each package of PCB's is to be labeled with the Part Number, Quantity and Date Code.

Q-30 Control of Age Sensitive Materials

All items with limited shelf life shall be clearly marked with the manufacturer's name, type of material, shelf life, date of manufacture and usability limiting date. A minimum of 75% of the shelf life shall be remaining on all items on this order at time of receipt.

Q-31 Sub-Tier Suppliers

Suppliers must flow down any applicable requirements to direct and sub-tier suppliers.

Q-32 Export Controlled Data

All technical data (drawings, Gerbers, specifications, procedures, etc.) are to be considered as Export Controlled unless explicit export approval is received from Laritech.

Export Controlled information is subject to the controls of the International Traffic in Arms Regulations (ITAR). This information shall not be provided to any non-U.S. persons or transferred by any means to any location outside of the United States without advanced permission from Laritech.

Q-33 Conflict Materials

Supplier shall not provide any tantalum, tin, tungsten or gold or their derivative metals or minerals (the "conflict minerals") mined from Democratic Republic of the Congo, Angola, the Republic of the Congo, Uganda, Rwanda, Burundi, Tanzania, Zambia, South Sudan and the Central African Republic (the "covered countries") where such conflict minerals directly or indirectly finance or benefit illegal armed groups. Supplier will cooperate in reasonable requests of Customer for additional information on smelter sourcing as may be required to meet Customer's sales requirements.

Q-34 REACH Compliance

Any RoHS compliant component that is delivered to Laritech must also be REACH compliant and/or have any SVHC (Substance of Very High Concern) identified and documented.