

Nanogate North America

Supplier Quality Manual

Revision: K

Page 1

1.0 Purpose

The purpose of this procedure is to provide for a system and instructions to give each supplier the necessary tools to provide product and services that meet the expectations of Nanogate North America.

2.0 Application

This procedure applies to suppliers who provide materials, components or services used in the manufacture of products at Nanogate North America.

3.0 Supplier Quality System Requirements

Nanogate North America requires that applicable suppliers be third party registered to either IATF 16949 or ISO 9001:2015. Suppliers that are not registered to the IATF 16949 standard must fill out the entire supplier self assessment that is provided. Companies that are IATF 16949 certified need only to fill out sections A & B of the supplier assessment. The intention of the survey is to determine whether the supplier has systems in place, which would meet the requirements of the IATF 16949 standard.

As applicable based upon product shipped to Nanogate the below CQI audits must be submitted annually.

- CQI-9- Heat Treat System Assessment
- CQI-11- Plating System Assessment
- CQI-12- Coating System Assessment
- CQI-17 Soldering System Assessment
- CQI-23 Molding System Assessment
- CQI-27 Casting System Assessment

Note: Current revisions of CQI audits can be found @ www.aiag.org

4.0 Production Part Approval Process (PPAP) Requirements

Nanogate North America requires its suppliers to utilize the process and forms referenced in the AIAG (Automotive Industry Action Group) manuals to demonstrate product and process conformance to product specifications

Suppliers are expected to meet all requirements of the customer print, unless a written waiver is received from Nanogate North America. If it is necessary for a supplier to make significant process changes (i.e. changes affecting materials, components, suppliers, tooling equipment and/or production process), the supplier must submit a Ppap package for approval demonstrating conformance of the new process to all requirements. The supplier may not ship product from the revised processes with out Ppap approval, unless interim approval is obtained from the Nanogate North America quality dept. The supplier Ppap checklist provided may be utilized to ensure that all applicable requirements are met.

5.0 Advanced Product Quality Planning (APQP)

Suppliers are responsible for utilizing a multidisciplinary team approach when preparing for production of a product for Nanogate North America. This team approach should include:

Nanogate North America

Supplier Quality Manual

Revision: K

Page 2

- Development of Process Flows, Control Plans, & Product/Process FMEA's
- Monitoring of special characteristics
- Mistake Proofing
- Actions to reduce potential failure modes

6.0 Reporting Requirements

If requested the supplier will supply data with each shipment (or at an agreed upon frequency) demonstrating ongoing conformance to product requirements.

7.0 Non-conforming Product

If a problem is found with the products or services provided by a supplier, then a Supplier Notice of Non-Conformance (SNN) will be issued to the supplier. Immediate action should be taken by the supplier to contain all defects already produced and stop any further defective product from being produced. All suppliers are expected to notify Nanogate North America of any shipments in transit that may have suspect material. Costs incurred as a result of non-conforming product will be assessed and forwarded to supplier. Man hours, downtime, qty impacted, investigation cost and administrative costs will be used to determine charge back.

The initial response including the containment plan is due within 24 hours. This initial response should clearly state how certified material will be identified and when Nanogate North America will receive the certified shipment. The certification of product should remain in effect until after implementation and verification of the corrective action.

The supplier has a maximum of 10 days to respond with the permanent corrective actions. If an extension of time is needed the supplier should contact the quality department to request an extension.

Nanogate North America reserves the right to debit suppliers for all costs associated with defective product for which the supplier is responsible. Costs that are debited will be detailed as part of the SNN. Suppliers have 3 business days to reply with the disposition of rejected material. Supplier must issue a RMA and make arrangements for material to be returned within 3 business days or material will be scrapped at Suppliers expense and appropriate debt taken.

8.0 Supplier Performance Report

Nanogate North America provides a Quality Monthly Report to applicable suppliers in order to communicate how well your company is performing to our expectations. This report tracks your PPM & Delivery performance and should be used as a tool to identify problem areas and focus on the appropriate counter measures. Nanogate North America expects its suppliers to deliver product and services as scheduled 100% of the time.

9.0 Packaging

Nanogate North America expects its suppliers to use packaging that effectively protects products during shipment. If the supplier is utilizing packaging provided by Nanogate North America, then the supplier is responsible for use of the appropriate packaging in the proper manner. If damage results from incorrect use of packaging or if the wrong packaging is used, the supplier is responsible and the damaged parts will be considered defects.

10.0 Labeling

Labels should be used that clearly identify the product and include at a minimum, the below listed barcode label requirements.

1. Label Size:

- 4" x 6" or 4" x 6.5" preferred. Any smaller size must be approved by Nanogate North America

2. Label Material:

- Returnable Containers - Polyester label with an adhesive side affixed to container. Label should be easily removed from the container with minimal adhesive residue.
- Expendable Containers – Paper or Polyester label with adhesive side affixed to container.

3. Label Print Orientation:

- Landscape preferred.

4. Barcode Type:

- Code 39 or Code 128. Barcodes must be readable by scanner from a range of 10+ feet.

5. Label Required Information:

- Part Number (As provided by Nanogate North America)
 - Human readable – Maximum field length is 40 characters.
 - Bar-coded with prefix of 'P'
- Part Description
 - Human readable
- Supplier Name
 - Human readable
- Container Quantity
 - Human readable
 - Bar-coded with a prefix of 'Q'
- Serial Number
 - Human readable – Length of 9 digits. The serial number should begin with a two-digit supplier code number (assigned by Nanogate North America) followed by an additional seven digits. Each supplier serial number must unique to the supplier's inventory system and non-repeating to Nanogate North America
 - Bar-coded with a prefix of 'S' followed by the supplier's unique 9 digit serial number.

Nanogate North America

Supplier Quality Manual

Revision: K

Page 4

- Container Weight (in kg) – Only needed if the Nanogate North America purchase order unit is kilograms
 - Human readable
 - Bar-coded with a prefix of '2Q'
- Heat Number (if applicable) - Length to 14 characters.
 - Human readable
 - Bar-coded with a prefix of '1T'
- "Batch" Tracking Number -Length to 14 characters (If Applicable)
 - Human readable
 - Bar-coded with a prefix of '32T'

6. Optional Label Information:

- Purchase Order Number (Provided by Nanogate North America)
 - Human readable
 - Bar-coded with a prefix of 'K'
- Date of Production of Parts
 - Human readable

Supplier Label Approval Process:

1. Each supplier should use the above guidelines to check current labels, which are being sent in on product to Nanogate to ensure full compliance to the requirements listed above. If supplier's existing labels prove to be non-conforming to any of the above requirements the supplier will create a sample barcode label for a single part number and submit it to Nanogate North America for preliminary testing. (Note: Supplier Specific Prefix will need to be added to Serial Number field as defined above and a sample label will need validated and approved by Nanogate North America.)
2. Upon preliminary approval by Nanogate North America, the supplier will create a sample label for all Nanogate North America part numbers and submit it to Nanogate North America for final testing and approval.

11.0 Customer Owned Tooling & Equipment

Suppliers that use tooling or equipment owned by Nanogate North America or its customers must have a system in place to maintain and protect the tooling. This system should include the following activities:

- Maintenance & Repair
- Preservation of tooling/equipment
- Storage & Recovery
- Setup
- Documentation of tooling/equipment modifications

No changes / modifications to tooling or equipment is permissible unless written authorization is received from the engineering department at Nanogate North America. The supplier should retain the documentation concerning any changes or modifications that are authorized.

12.0 Records & Documentation

Each supplier is expected to maintain records of all SPC charts, testing, measurement and inspection required to demonstrate conformance to the requirements of Nanogate North America and its customers. The records must be legible, stored in a manner to prevent deterioration and readily available.

Suppliers must retain all Ppap documentation for the life of the program (including service) plus a minimum of 1 year.

13.0 Confidentiality

Suppliers are expected to maintain confidentiality regarding customer specific designs, prints, math data and propriety processes supplied or used by Nanogate North America.

14.0 Purchase Orders

A purchase order is issued to a supplier at the time of quotation acceptance. The purchase order defines and describes material or services in terms of part number, engineering revision level, quantity, price, delivery and compliance to governmental standards and regulations, as applicable. The supplier is notified in the event that a revision to the purchase order becomes necessary, such as a design change.

15.0 Supplier Control:

One or more of the following methods will be used to monitor the quality of supplied products:

- PPAP Submissions at applicable level to include IMDS information (Nanogate Company ID: 16471). Rev Level of supplier PPAPS to be cross- checked with current PO in Plex Inventory System.
- Sample product submission

Nanogate North America

Supplier Quality Manual

Revision: K

Page 6

- Production reports
- Receiving Inspection Results
- On-site audits can be conducted when a supplier's product has caused downtime, missed deliveries or a corrective action needs additional follow up. Audits may also be conducted when/if risk assessment deems an audit necessary (8.4.2.4.1).

16.0 Conflict Minerals:

Suppliers to Nanogate North America are prohibited from using "conflict minerals" (tin, tungsten, tantalum, & gold) which originate in the Democratic Republic of the Congo (DRC) and adjoining countries. This is in keeping with H.R. 4173, the Wall Street Reform and Consumer Protection Act, Section 1502.

Cobalt:

Suppliers to Nanogate North America are prohibited from using cobalt in the products unless a Cobalt Reporting Template(CRT) has first been submitted and approved. This action supports the exercise of due diligence in accordance with the Organization for Economic Cooperation and Development (OECD) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict Affected and High Risk Areas.

Nanogate North America

Supplier Quality Manual

Revision: K

Page 7

Revision:	Nature of Change:	By:	Date:
A	Initial Creation in MS word	P. Oswalt	5/25/06
B	Revised Outline Numbering changing 10.0 Records and Documentation to 12.0, 11.0 Confidentiality to 13.0, and 12.0 Purchase Orders to 14.0 because of duplicate outline numbers. Revised 12.0 Records and Documentation retention of PPAP documentation from 50 years to 1 year per revised GM Customer Specifications.	D. Miller	4/29/08
C	Modified 7.0 to include 3 business day limit for defective material	P. Oswalt	1/26/10
D	Modified 3.0 to include ISO/TS 16949:2009 And ISO 9001:2008 Modified 7.0 to include nonconforming Material charges	P. Oswalt	7/21/10
E	Modified document to capture Plex System Upgrade	K.Oswalt	11/20/13
F	updated 3.0 to include annual CQI audits, updated 10.0 for Batch tracking #	K.Oswalt	10/17/14
G	Updated to include CQI-23 based off GM Customer Specifics update	K.Oswalt	12/19/14
H	Updated with new Company name Nanogate Jay Systems	K.Oswalt	12/13/16
I	Updated with New IATF Standard	P.Oswalt	2/19/18
J	Updated with new Company name Nanogate North America	P.Oswalt	9/30/19
K	Added Conflict Mineral Section	P.Oswalt	7/15/20

Approved By: Paul Boggs Date: 7/15/20
Co-CEO