



環隆科技股份有限公司

UNIVERSAL MICROELECTRONICS CO., LTD.

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文件名稱：Restriction of Hazardous Substances Management Procedure

1.0 Purpose :

In order to comply with the requirements of multinational laws and regulations. UMEC release this procedure for hazardous substances management, include supplies cooperation and commitment to the regulations, protect the environment and reduce the influence on living beings.

2.0 Scope :

The materials, components, packaging materials processes, indirect materials and products which used and delivered by UMEC.

3.0 General

3.1 RoHS : Restriction Of Hazardous Substances. It is EUROPEAN union directive.

Due to multinational laws and regulations. UMEC follow SONY SS-00259 firstly, Any special request. UMEC follow customer requirement, implement project management.

3.2 Management Standards : To manage the above-mentioned substances, the following three levels are used.

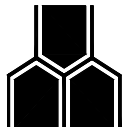
Level 1 : The substances and purposes classified at this level are those whose use must be banned immediately.

Level 2 : The substances and purposes classified at this level are those for which periods for phase-out are individually set.

Level 3 : No periods or targets for reduction are currently set for the substances and purposes classified at this level. However, the contents of the substances in parts and materials ought to be reduced.

3.3 Contained : "Contained" is a situation in which a substance is added to, fills up, mingles with, or adheres to the parts or devices employed in products, or the materials used for the parts or materials ought to be reduced.

3.4 Impurity : An "Impurity" is a substance that satisfies either or both of the following conditions : A substance contained in a natural material, which cannot technically be removed in a refining process totally and a substance generated in a synthesis process, the total removal of which is technically impossible.



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3.5 UMEC shall comply with this standard to develop new products from MAR.01.2005.

3.6 UMEC shall complete engineering changes for all on-going production products to comply with this standard before JAN.01.2006.

3.7 UMEC supplier shall only deliver products complying with this standard from JAN.01.2005.

3.8 Customer special requirement. Implement project management.

3.9 UMEC use a G code to identify the RoHS compliancy materials and products, for example, 10-xxxxx means non-RoHS materials, 10G-xxxxx means RoHS materials, TR-xxxxx means non-RoHS Transformer, TG-xxxxx means RoHS transformer.

H represent Halogen free products, for example TH-xxxxx means Halogen free Transformer.

4.0 Reference documents :

SONY SS-00259-1, 94/62/EEC, 2002/95/EC(RoHS Directive), 2002/96/EC(WEEE Directive), 2006/66/EC Batteries Directive, 76/769/EEC ON THE RESTRICTIONS TO MARKETING AND USE OF DANGEROUS SUBSTANCES.

5.0 Procedure

5.1 Responsibility :

QA call R&D, Engineering, purchasing, marketing, production control, production and component engineer organize a committee and work out RoHS planning with the following responsibilities.

5.1.1 President :

- a. UMEC president commit to train all employees the RoHS directive.
- b. UMEC president commit to follow the regulations and customer's requirements to control the hazardous substances.



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5.1.2 Purchasing：

- a. Investigate the existing part no. Get a validate RoHS certificate from supplier for component engineer to do M.A. and entry into PLM system for RoHS status.
- b. Notify R&D take action for supplier unable to supply certificate.
- c. Notify and update supplier for this procedure.

5.1.3 Production control：

Control stock status and RoHS transition management.

5.1.4 R&D：

- a. Use the components from RoHS or SONY GP compliance supplier who could warranty and provide validate third party test report.
- b. Use the packaging materials as same approve procedure.
- c. If the Material should follow PPAP procedure, except the material's spec and diagram, the supplier shall prepare RoHS or GP certificate, RoHS or GP BOM list and third party test report.

5.1.5 Engineering：

Support production technology and introduce products which meet regulations.

5.1.6 QA:

- a. Access and update regulations and customer's requirements.
- b. Implement incoming inspection, send uncertain materials to national certified LAB for testing.
- c. Revise and control this procedure.
- e. Supporting internal training.
- f. Implement internal audit.

5.1.7 Production：

Control and segregate green materials and products.

5.1.8 Component engineer：

- a. Supplier certificate documents check and link into part no system in PLM.
- b. Update and control supplier's certificate.
- c. System application supporting.



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5.1.9 Marketing：

- a. Response customer requirement to related department.
- b. Provide RoHS certificate for customer.
- c. Provide RoHS compliance Products and approve sheet for customer approval.

5.2 Document control：

5.2.1 Supplier should provide：

1. Non use of hazardous substances certificate.
2. Part no list.
3. Test report issued by national certified test LAB.

The component engineer combine the above documents, issue a document number as S-R+ Vendor code and review by IQC.

5.2.2 When any department receive the supplier revised RoHS information should transfer the information to component engineer and she or he should revise the supplier status in PLM system.

5.2.3 The supplier should provide the RoHS information in electronic files. Except the company stamped certificate.

5.2.4 The other process refer to document control procedure.

5.3 Records control：

The RoHS records shall reserve 3 years. The other process refer to records control procedure.

5.4 Design control：

5.4.1 Never use level 1 hazardous substances.

- a. Never use level 1 hazardous substances in new design products.
- b. Never qualify new materials / parts which contain level 1 hazardous substances.

5.4.2 Components, Materials selection.

- a. Supplied by green partner who comply with SS-00259.
- b. The materials comply with RoHS requirement and the supplier provide certification which issued by national certified LAB.
- c. The materials pass XRF test by UMEC and supplier shall provide certificate of never do EC without UMEC approval.



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5.4.3 The parts or materials test data are required for new approval, the applicant should run “MA” flow on PLM system. Fill in the RoHS status on the related column. There are 7 status :

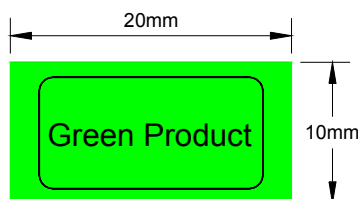
1. Commit(S) means comply with SONY requirements with warranty.
2. Commit(R) means comply with RoHS requirements with warranty.
3. Meet(S) means comply with SONY requirements without warranty.
4. Meet(R) means comply with RoHS requirements without warranty.
5. TBD means not RoHS compliance.
6. Meet(HS) means comply with Halogen free and SONY requirements.
7. Meet(HR) means comply with Halogen free and RoHS requirements.

5.4.4 The purchasing staff request the related documents for existing parts and materials. The RD & engineering responsible related documents for new approve parts and materials.

5.5 Purchasing control :

5.5.1 The purchasing staff shall check the RoHS status during she (he) release the purchasing order, the P.O. will show MM-DD-YY RoHS compliance.

5.5.2 The parts or materials should have sticked “GREEN PRODUCT” green color label on the packaging. This is an acceptance criterion during incoming inspection. The reference label format is as following.



5.5.3 Supplier selection

The following are supplier selection guidance:

a. The Assigned materials:

Only could be purchase from the Green Partner of UMEC or Customer approved Green Partner.

b. All other materials:

Should purchase from the supplier who follow this procedure specified.



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5.5.4 Notice Supplier

The purchasing staff shall notify the Supplier of UMEC or it's customer's RoHS requirement.

5.5.5 Supplier management

1. The purchasing staff should notify Supplier of UMEC RoHS requirements and confirm commitment from Supplier.
2. The Supplier should identify the following documents from their Suppliers.
Non use of Hazardous Substance certification.
The materials compositions or MSDS.
Third party test report.
3. The Supplier shall implement a controlled and traceable system on their production equipments, jigs or test fixtures.
4. The Supplier shall implement a RoHS control system and ensure it's effectiveness, the Supplier should audit their Supplier periodically.

5.6 Engineering change control :

5.6.1 The supplier shall provide LAB test RoHS data. Before there is any change of the material, and get the approval from RD & component engineer.

5.6.2 When the material change is related to customer products. The RD engineer shall notify customer with the necessary documents(Warranty, Test report or MSDS and get approval before implement change.

5.6.3 The supplier's manufacturing change of method, equipment and / or environment shall provide test report. The other requirements follow design control procedure.

5.7 Production control :

5.7.1 During RoHS transition period. The production shall control. The parts and materials, segregate the non compliance parts and materials. Prevent to pollute the production equipments and RoHS comply parts and materials.

5.7.2 The comply RoHS parts and materials shall be identified by "GP" label.

5.7.3 The RoHS compliance materials lot no shall be recorded on material use records. The manufacturing order, lot no, quantity, date code or serial no. Shall be recorded on traveler ticket for traceability.

5.7.4 The other process refer to production management procedure.



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5.8 Incoming control :

5.8.1 Identify the material has stick “GP” label on the packaging when the material is RoHS compliance and noted in oracle. Then accept the material.

5.8.2 When oracle show RoHS compliance but no “GP” label on the packaging. The supplier shall provide certificate, then IQC staff stick “GP” label and accept the material after pass inspection.

5.8.3 IQC reject the material without any “GP” label and certification.

5.8.4 IQC shall sampling test the hazardous substances by SPECTRO XEPOS XRF equipment. The result shall meet RoHS requirement. When test data is out of RoHS requirement. Segregate the material and send to SGS LAB for test and identification.

5.8.5 Other process refer to incoming inspection procedure.

5.9 Nonconformance control :

5.9.1 Nonconformance material shall be sticked reject label and segregated in reject area.

5.9.2 When nonconformance happen. Trace previous lot of material or product, verify by XRF equipment. If nonconformance detected, issue nonconformance report and run NCR flow.

5.9.3 Non conformance product shall be identified and segregated. The possible nonconformance lot shall be verified and report to management representative.

5.10 Corrective and preventive action :

The CAPA should expand to related products and series of products.

5.10.1 Incoming discrepancy :

a. For incoming nonconformance, follow “Discrepancy Disposition procedure”.

b. Identify and segregate the sampling lot.

c. Trace the previous incoming lot and verify their quality.

d. Collect the information to quality and related department manager, the quality manager shall verify the nonconformance.



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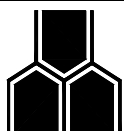
- e. Evaluate the nonconformance and notify customer when necessary.
- f. IQC notify purchasing and supplier to stop shipping, the supplier shall cooperate UMEC to investigate root cause of nonconformance and take corrective action. The nonconformance shall be segregated. The nonconformance material shall be returned to supplier. Release the supplier shipment when corrective action was verified, use XRF test 3 continuous lot and verify the effectiveness of Supplier CAPA.

5.10.2 Process discrepancy :

- a. For process nonconformance follow “Discrepancy Disposition Procedure”.
- b. Identify and segregate the sampling lot, trace the previous lot and verify their quality. When nonconformance was verified. Notify customer if necessary.
- c. Process nonconformance emergency action :
 - 1. Stop line, call engineering, material control, QA, and production for team meeting and make disposition.
 - 2. Investigate the nonconformance material, then identified and segregated.
 - 3. Trace product, identify and segregate.
 - 4. Recall the product which on the way to customer.
 - 5. Trace the stock product, identify and segregate.
 - 6. Check each step of process, verify root cause.
 - 7. Rework the nonconformance product and follow customer requirement.
- d. After team investigation, provide corrective and preventive action. After customer approval then release to production.
- e. The nonconformance related root cause, corrective and preventive action shall be noted to all related employees. Who should have the knowledge of serious of nonconformance and enhance quality capability.

5.10.3 Customer nonconformance :

- a. Details follow “Product Service Procedure”.



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- b. The business staff response the customer complain to QA and related department. QA identify the complain, and notify business staff to inform customer no product quality problem was found. When identify quality problem. QA shall trace related products and customer. QA call team meeting for investigation and verification. Provide oral report within 3 hours and release report within 24 hours.
- c. Stop production immediately. Identify nonconformance material was used. Segregate the material, work in process and recall on freight products. Prevent epidemic failure.
- d. Project team provide corrective and preventive action plan. QA release corrective action report to customer through business staff. Try our best effort to make customer satisfaction.
- e. Negotiate with customer for the dispose of nonconformance product.
- f. Segregate the nonconformance in warehouse. Production planning shall prepare, RoHS compliance materials for production and meet customer requirement.
- g. Scrap or rework the nonconformance related lot. The rework shall follow engineering issued work instruction. The nonconformance materials shall be segregated.
- h. QA shall audit the corrective and preventive action. The related operators and staff shall have the training of related knowledge. They shall know the seriously of the problem and know how to prevent it happen.

5.10.4 The disposition on nonconformance of supplier's site

When any supplier's nonconformance was notified UMEC shall work with Supplier and provide countermeasure support, and

- a. Test and trace different part no. lot no or date code, identify the product's Quality.
- b. Notice our customer If any nonconformance was infected.
- c. Request supplier take analysis and corrective action, test and isolated the Nonconformance lot, insure the 3 continuous lot are accepted, otherwise Terminate the supplier's qualification.
- d. Trace the in-process products and warehouse products, any nonconformance was found follow procedure 5.10.2 and 5.10.3



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5.11 Nonconformance Green Product control and traceability.

5.11.1 Trace rule:

The nonconformance products should have lot no or series no and are traceable to the material's or part's lot no and process traveler and operator.

5.11.2 Segregation and disposition:

The warehouse should isolate an area for the segregation of nonconformance green products and wait for decision by top management.

5.11.3 Record:

Shall keep records of the identification, traceability, segregation and disposition of the nonconformance green products.

5.11.4 Nonconformance report:

- a. Issue nonconformance report when nonconformance green products were detected
- b. Nonconformance shall reported to management representative immediately.
- c. The management representative shall oral report to customer within 3 hours and formal report within 24 hours.

5.12 Test report conformation:

The GP supplier shall provide evidence documentation to identify that their material s or parts are comply with the requirements of the procedure specified.

5.12.1 Test objective:

The materials, parts and packaging materials which supplied to UMEC.

5.12.2 Test frequency:

The test frequency shall be identified and specified in appropriate work instruction.

5.12.3 Test equipment

(1) Supplier self testing

- a. The test equipment should notify verified by UMEC.
- b. The test procedure, method and record should maintained in case of traceability.

(2) Supplier without testing equipment

- a. Use UMEC XRF test data and record detail information as required.
- b. Use third party Lab test data and record detail information as required.



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5.12.4 The effectiveness of the test data

In order to ensure the reliable of the test data, there should have documented control procedure for the equipment operation and training.

- a. Supplier should keep the equipment maintenance and calibration record to ensure the testing effectiveness.
- b. The third party Lab shall be national certified.

5.12.5 The internal testing training:

The test equipment operator shall be well trained, certified and keep the record.

6.0 Hazardous substances and regulations

6.1 The national certified testing LAB as annex 2.

6.2 The hazardous substances as annex 3.

6.3 The classification, application and banned date of hazardous substances as annex 4.

6.4 The information of hazardous substances and it's compounds as annex 5.

6.5 The testing method of hazardous substances as annex 6.

6.6 The hazardous substances control list as annex 7.

7.0 ANNEX

7.1 Certificate of non use hazardous substances.REV1

7.2 National certified testing laboratory.REV1

7.3 Environmental hazardous substances.REV2

7.4 Hazardous substances classification, application and banned time.REV4

7.5 Details of substances.REV1

7.6 Test methods of environmental hazardous substances.REV1

7.7 Hazardous substances control list.REV2