

Revision Record

| Revised Item | Description |
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| 2 nd edition 2005/07/29 | Issued as the first English version. The 1 st edition corresponding to Japanese version was not translated into English. |
| 16 th edition 2019/10/01 1. Table 1. Table 3. | 1.Introduction Changed the body text and annotations. Table 1. Environmentally Managed Substances In the table "2. Restricted Substances", <ul style="list-style-type: none"> • Changed substance number to 16 from 17, • Newly added "Perfluorooctanoic acid (PFOA), its salts and PFOA related substances" • Added notes "table1-1" Table 3. Management Level for Restricted Substances <ul style="list-style-type: none"> • Newly added "16. Perfluorooctanoic acid (PFOA), its salts and PFOA related substances " |
| 15 th edition 2018/10/01 1. 2. 3. Table 1. Table 3. | Changed chapters and annotations corresponding review of whole document structure. 1.Introduction Changed the body text and annotations. Deleted "2. Hamamatsu Photonics K.K. "Fundamental Environmental Policy" on the 14 th edition. Changed the title "3. Management Standard for the Environment-related Substances to be Controlled in Parts and Materials" to "2. The Body", the body text, chapters and annotations as; <ul style="list-style-type: none"> • "3.1. Purpose" → "2.1. Purpose" (Deleted HPK as company abbreviation), • "3.2. Scope" → "2.2. Scope", • "3.3. Definition of Terms" → "2.3. Terms and Definitions", • "9) Intentionally added" → "6) Intentionally-added", Deleted "6) Impurity", • "3.4. The Management Standard for the Environment-related Substances to be Controlled in Parts and Materials" → "2.4. The Management Classification", changed annotations • "3.5. Revision" → "2.5. Revision" Deleted "5. Submission Request for Specific Statements (in detail)" and "6. Chemical Substances Survey", changed the title "4. Cooperation in Supplier Survey" to "3. Cooperation Requests to Our Suppliers" and summarized the body text in each of following chapters; <ul style="list-style-type: none"> • 3.1. Requests, • 3.2. Supplement as of CiP, • 3.3. Supplement as of the survey for chemical substances used in production processes. Table 1. Environmentally Managed Substances In the table "3. Controlled Substances", <ul style="list-style-type: none"> • Changed substance number to 11 from 12 and "No.", • Deleted "Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST)" Table 3. Management Level for Restricted Substances <ul style="list-style-type: none"> • Changed the Management Level 2 to Level 1, and set "The date on or after which HPK won't accept the target" as "Immediate ban since Jan. 22, 2018" for "16. Di(2-ethylhexyl) phthalate, Dibutyl phthalate, Butylbenzyl phthalate, Diisobutyl phthalate". |

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| Table 4. | <ul style="list-style-type: none"> Newly added "16. Di(2-ethylhexyl) phthalate, Dibutyl phthalate, Butylbenzyl phthalate, Diisobutyl phthalate" Table 4. Specified amine Compounds <ul style="list-style-type: none"> Changed "No. 7 Level 2" to "No. 6 Level 1" |
| 11 th edition 2014/10/01 1. 6. Table 1. Table 3. | 1. Introduction <ul style="list-style-type: none"> Changed contents 6. Chemical Substances Survey <ul style="list-style-type: none"> Newly added "6.1. Management of Chemical Substances in Products." Added title as "6.2. Chemical Substances Survey for the parts and materials", and changed contents. Table 1. The Environment-related Substances to be Controlled in Parts and Materials <ul style="list-style-type: none"> Changed description area of "CAS No." into the column of "Applicable Laws and Regulations" for the substances that have information. In the table "1. Banned Substances", changed "2009/251/EC" to "REACH regulation" in "Applicable Laws and Regulations" for No.10 "Dimethyl Fumarate (DMF)". In the table "2. Restricted Substances", changed number of substances to 16 from 15 and modified followings; Newly added No.16 "Polycyclic aromatic hydrocarbons (PAH)", Changed contents of reference "*table 1-1". In the table "3. Controlled Substances", changed "No." according to changing of substance number to 16 from 11 and modified followings; Added No.7(B11) "Hexabromocyclododecane(HBCDD) and all major diastereoisomers", No.8(C12) "Di(2-ethylhexyl) phthalate(DEHP)", No.9(C13) "Dibutyl phthalate (DBP)", No.10 (C14) "Butylbenzyl phthalate (BBP)", and No.11(C15) "Diisobutyl phthalate (DIBP)". Table 3. Management Level for Restricted Substances <ul style="list-style-type: none"> Changed the Management Level 2 to Level 1, and set "The date on or after which HPK won't accept the target" as "Immediate ban since July 1, 2014 for "14.Dibutyltin (DBT) compounds". Newly added "16. Polycyclic aromatic hydrocarbons (PAH)" |
| 10 th edition 2013/10/01 3. 4. 5. 6. Table 1. | According to new style of document for "Standard", changed overall format and number of pages. 3. Management Standard for the Environment-related Substances to be Controlled in Parts and Materials <ul style="list-style-type: none"> Changed clause numbers to 3.4 from 4, 3.5 from 5 and margin note numbers. Moved "Contact Information" to the back cover. 4. Cooperation in Supplier Survey <ul style="list-style-type: none"> Changed to "environment-related substances to be controlled in parts and materials" from "chemical substances". According to changing to VT62474 from JGPSSI, modified 4.2. Survey Sheets and 4.3. Survey Substances, united description of 4.4. Submission Request for Specific Statements into 4.2. 5. Submission Request for Specific Statements (in detail) <ul style="list-style-type: none"> Deleted reference of Form 1~3, and added information about our website in which the latest ones are available. 6. Chemical Substances Survey <ul style="list-style-type: none"> Modified contents according to changing to VT62474 from JGPSSI. Table 1. The Environment-related Substances to be Controlled in Parts and Materials <ul style="list-style-type: none"> Add "...IEC62474 (VT62474), and..." In the table "1. Banned Substances", according to VT62474 |

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| Table 3. | <p>modified followings; For all "VT62474 substance group No". For No.2, 3, 7 and 10 "Legal Limit"</p> <ul style="list-style-type: none"> • In the table "2. Restricted Substances", according to VT62474 modified followings; For all "VT62474 substance group No" and "Reportable Application(s)". In response to this "HPK's Threshold Level" "Applicable Laws and Regulations" for some substances were changed, Polyvinyl Chloride (PVC) was changed to Polyvinyl Chloride (PVC) & PVC Copolymers and B07 to B19 as for "VT62474 substance group No" • In the table "3. Controlled Substances", changed substance number to 11 from 9 and according to VT62474 modified followings; For all "VT62474 substance group No" and "Reportable Application(s)". In response to this "HPK's Threshold Level" "Applicable Laws and Regulations" for some substances were changed, <ul style="list-style-type: none"> • Added C36 Di-isodecyl phthalate (DIDP) • Added C37 Di-n-hexyl Phthalate (DnHP) <p>Table 3. Management Level for Restricted Substances</p> <ul style="list-style-type: none"> • Deleted "JGPSSI substance group No". • Deleted "Object" for the set substances • Added "[Examples]" for Cd, Cr⁶⁺, Pb, Hg. • 5. Polyvinyl Chloride (PVC) was changed to Polyvinyl Chloride (PVC) & PVC Copolymers and deleted (other than ones used in vacuum). |
| 9 th edition 2013/02/01 3. 5. 6. Table 3. | <p>3. Management Standard for the Environment-related Substances to be Controlled in Parts and Materials</p> <ul style="list-style-type: none"> • Modified contents such as "Management Level", "Target (application)", and "The date on or after which HPK won't accept the target" for "The Management Standard for the Environment-related Substances to be Controlled in Parts and Material". [Modified Items] Restricted Substances; Polyvinylchloride (PVC) [Related Items in the document] Table 3. Management Level for Restricted Substances <p>5. Submission Request for Specific Statements (in detail)</p> <ul style="list-style-type: none"> • Changed sentence in "5.1. Non-inclusion Warranty for Banned and Restricted Substances". <p>6. Chemical Substances Survey</p> <ul style="list-style-type: none"> • Changed contents of Form1. <p>Table 3. Management Level for Restricted Substances</p> <ul style="list-style-type: none"> • Changed "Heat shrink tubes" to Level 1, and set "The date on or after which HPK won't accept the target" as "Immediate ban since Jan. 22, 2013 for "5. Polyvinylchloride (PVC)". |
| 8 th edition 2012/10/01 3. | <p>3. Management Standard for the Environment-related Substances to be Controlled in Parts and Materials</p> <ul style="list-style-type: none"> • Modified contents such as "Substance Group Name", "Legal Limit", "HPK's Threshold Level" and "Applicable Laws and Regulations" for "The Management Standard for the Environment-related Substances to be Controlled in Parts and Material" according to "JIG-101 Ed 4.1". • Modified Banned Substances (10), Restricted Substances (15), Controlled Substances (8 to 9). Note) JIG-101 Ed 4.1 : Guidelines for the Management of Chemical Substances in electrical and electric equipments (EEE). [Modified Items] |

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| <p>4.</p> <p>6.</p> <p>Table 1.</p> <p>Table 3.</p> | <p>Restricted Substances; Lead/ Lead Compounds Controlled Substances; Brominated flame retardants (other than PBBs,PBDEs, orHBCDD), Chlorinated flame retardants. [Related Items in the document] "3. Controlled Substances" in Table 1, Table 3. Management Level for Restricted Substances</p> <p>4. Cooperation in Supplier Survey</p> <ul style="list-style-type: none"> Changed 4.3. Survey Substances corresponding to the above "[Modified Items]". <p>6. Chemical Substances Survey</p> <ul style="list-style-type: none"> Changed Form1~3 according to Green Procurement Management Standard for Chemical Substances 8th edition. <p>Table 1. The Environment-related Substances to be Controlled in Parts and Materials</p> <ul style="list-style-type: none"> Modified "3. Controlled Substances" corresponding to the above "[Modified Items]". <p>Table 3. Management Level for Restricted Substances</p> <ul style="list-style-type: none"> Changed "Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC" in "Target (application)" to Level 1, and "The date on or after which HPK won't accept the target" to July. 1, 2012 for "Lead/ Lead Compounds". |
| <p>7th edition 2011/10/01</p> <p>1.</p> <p>3.</p> <p>4.</p> <p>6.</p> <p>Table 1.</p> <p>Table 3.</p> | <p>1. Introduction</p> <ul style="list-style-type: none"> Changed contents. <p>3. Management Standard for the Environment-related Substances to be Controlled in Parts and Materials</p> <ul style="list-style-type: none"> Modified contents such as "Substance Group Name", "Legal Limit", "HPK's Threshold Level" and "Applicable Laws and Regulations" for "The Management Standard for the Environment-related Substances to be Controlled in Parts and Material" according to "JIG-101 Ed 40". Modified Banned Substances (10), Restricted Substances (13 to 15), Controlled Substances (14 to 8). Note) JIG-101 Ed 4.0 : Guidelines for the Management of Chemical Substances in electrical and electric equipments (EEE). [Modified Items] Banned Substances; Modified "Certain Tributyl Tin (TBT) and Triphenyl Tin (TPT) compounds" to "Tri-substituted organostannic compounds". Restricted Substances; Added "Dibutyltin (DBT) compounds" and "Dioctyltin (DOT) compounds". Controlled Substances; Summarized substances that meet "EU REACH regulation (SVHC) group" in controlled substances. [Related Items in the document] "1. Banned Substances", "2. Restricted Substances" and "3. Controlled Substances" in Table 1 <p>4. Cooperation in Supplier Survey</p> <ul style="list-style-type: none"> Changed 4.3. Survey Substances corresponding to the above "[Modified Items]". <p>6. Chemical Substances Survey</p> <ul style="list-style-type: none"> Changed Form1~3 according to Green Procurement Management Standard for Chemical Substances 7th edition. <p>Table 1. The Environment-related Substances to be Controlled in Parts and Materials</p> <ul style="list-style-type: none"> Modified "1. Banned Substances", "2. Restricted Substances", and "3. Controlled Substances" corresponding to the above "[Modified Items]". <p>Table 3. Management Level for Restricted Substances</p> <ul style="list-style-type: none"> Added the note below the table for Cd, Cr6+, Pb, and Hg. Changed "The date on or after which HPK won't accept the |

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| <p>Table 2-1.</p> <p>Table 2-2.</p> <p>Table 3.</p> | <p>“[Modified Items]”.</p> <ul style="list-style-type: none"> • Changed “Permitted Value” to “HPK’s threshold level” in “2. Restricted Substances”. • Added “HPK’s threshold level”, “Applicable Laws and Regulations”, and margin note in “3. Controlled Substances”. <p>Table 2-1. The Environment-related Substances to be Restricted use in process of HPK, Suppliers for production of Parts and Materials shipped to HPK “Ozone depleting substances (ODS)”</p> <p>Table 2-2. The Environment-related Substances to be Restricted use in process of HPK, Suppliers for production of Parts and Materials shipped to HPK “Chlorinated Organic Solvent”</p> <ul style="list-style-type: none"> • Modified items of table and substance name corresponding to JIG-101 Ed 2.0. • Deleted chemical formula and added CAS No. • Changed the listed order according to management standard. <p>Table 3. Management Level for Restricted Substances</p> <ul style="list-style-type: none"> • Changed “The date on or after which HPK won’t accept the target” to Apr. 1, 2011 in “5. Polyvinylchloride (PVC)”. • Changed contents of “Target (application)” in “10. Perfluorooctane sulfonates (PFOS)” • Added “11. Fluorinated greenhouse gases (PFC, SF6, HFC)”, “12. Cobalt dichloride (CoCl₂)”, “13. Chlorinated Organic Solvent” |
| <p>5th edition 3.</p> <p>2008/10/01</p> <p>4.</p> | <p>3. Management Standard for the Environment-related Substances to be Controlled in Parts and Materials</p> <ul style="list-style-type: none"> • Changed “The Environment-related Substances to be Controlled in Parts and Materials” from 25 to 27 groups; Banned Substances (7 to 8), Restricted Substances (9 to 10), Controlled Substances(9, as same as 4th edition) • Added Specific Benzotriazole into Banned Substances. • Added Perfluorooctane sulfonates (PFOS) into Restricted Substances. • Modified Substances group name, Permitted value, etc according to JIG-101A. <p>[Related Items in the document]</p> <p>Appended Table A in “3.4. The Management Standard for the Environment-related Substances to be Controlled in Parts and Materials”</p> <p>In Table 1,</p> <p>1. Banned Substances; Appended Specific Benzotriazole, Changed Substances group name according to JIG-101A.</p> <p>2. Restricted Substances; Appended Perfluorooctane sulfonates (PFOS), Changed Substances group name and Permitted value according to JIG-101A.</p> <p>3. Controlled Substances; Changed Substances group name according to JIG-101A. Modified “Nickel (external applications only)” to “Nickel (specific applications only)”.</p> <p>Appended the notes beneath the table.</p> <p>In Table 3,</p> <p>Appended Perfluorooctane sulfonates (PFOS), Changed Substances group name according to JIG-101A.</p> <p>In Table 4, Changed Substances group name according to JIG-101A.</p> <p>JIG-101A: Guidelines for the Management of Chemical Substances in electrical and electric equipments (EEE)</p> <p>4. Cooperation in Supplier Survey”</p> <p>4.3. Survey Substances</p> <ul style="list-style-type: none"> • Modified as “1) Survey substances shall be containing in parts and materials are shows in Table 1. In this table, there are 27 |

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| 6. Table 3. | <p>substances including 8 banned, 10 restricted and 9 controlled substances. (24 substances are the same one as JIG-101A and 1 substance Specific Benzotriazole as Banned Substances, 2 substances Formaldehyde and Perfluorooctane sulfonates (PFOS) as restricted substances are added by HPK originally.)”</p> <p>6. Chemical Substances Survey</p> <ul style="list-style-type: none"> • Changed Form1~3 according to Green Procurement Management Standard for Chemical Substances 5th edition. <p>Table 3. Management Level for Restricted Substances</p> <p>1) As for “5. Polyvinylchloride (PVC)”:</p> <ul style="list-style-type: none"> • Changed “The date on or after which HPK won’t accept the target” to “Apr. 1 2010” on Level 2. |
| 4 th edition 3. 4. Table 2-2. Table 3. | <p>3. Management Standard for the Environment-related Substances to be Controlled in Parts and Materials</p> <ul style="list-style-type: none"> • Changed “The Environment-related Substances to be Controlled in Parts and Materials” from 32 to 25 groups • Banned Substances (8 to 7), Restricted Substances (10 to 9), Controlled Substances(10 to 9) Deleted Substances Groups; Mirex, Specified amine compounds, Magnesium, Copper and its compounds, Gold and its compounds, Palladium and its compounds, Silver and its compounds. Modified Substances Group; Tributyl Tins & Triphenyl Tins from Restricted Substances to Banned Substances, Nickel and its compounds to Nickel (external applications only). [Related Items in the document] Appended Table A in “3.4. The Management Standard for the Environment-related Substances to be Controlled in Parts and Materials” Appended “...then the permitted values are shown in Table 1 (2) and clause 6.2” in 3.6. The Management standard for Restricted Substances In Table 1, 1. Banned Substances : Appended Tributyl Tins & Triphenyl Tins from Restricted Substances 2. Restricted Substances Appended column “Permitted Value” and “In reference to JIG-101...” in the Applicable Laws and Regulations of Vinyl Chloride Polymer (PVC). 3. Controlled Substances Modified “Nickel and its compounds” to “Nickel (external applications only)”, “Examples of Use”, appended the notes beneath the table. <p>4. Cooperation in Supplier Survey”</p> <p>4.3. Survey Substances</p> <ul style="list-style-type: none"> • Modified as “1) Survey substances shall be containing in parts and materials are shows in Table 1. In this table, there are 25 substances including 7 banned, 9 restricted and 9 controlled substances. (24 substances are the same one as JIG, and 1 substance Formaldehyde as restricted substances are added by HPK originally.)” <p>Table 2-2. The Environment-related Substances to be Restricted use or non-use in process for Parts and Materials shipped to HPK “Chlorinated Organic Solvent”</p> <ul style="list-style-type: none"> • Appended explanations about Management Level 1 to 3, The date on or after which HPK won’t accept the target, and note about exception of level 1. <p>Table 3. Management Level for Restricted Substances</p> <ul style="list-style-type: none"> • Appended the past “The date on or after which HPK won’t accept the target” as for Management level 1 on each substance. • Deleted “Tributyl Tins & Triphenyl Tins”. |

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| | <ul style="list-style-type: none"> • As for “3. Lead and its Compounds”: Appended “Lead that exceeded 1000 ppm in stabilizers used for electroless gold plating as well as electroless nickel plating and lead contained in additives” on Level 1, “Lead that not exceeded 1000 ppm in stabilizers used for electroless gold plating as well as electroless nickel plating and lead contained in additives” on Level 3. • As for “5. Polyvinylchloride (PVC)”: Changed “The date on or after which HPK won’t accept the target“ to “Apr. 1 2009” on Level 2. |
| <p>3th edition 2006/04/18</p> <p>3.</p> <p>4.</p> <p>Form 2</p> <p>Table 2-1.</p> <p>Table 3.</p> | <p>3. Management Standard for the Environment-related Substances to be Controlled in Parts and Materials</p> <p>3.6.2 Permitted Values of Pb, Cd, Hg, and Cr(VI) as Restricted Substances</p> <ul style="list-style-type: none"> • 2) Omitted “However when the definition is decided on RoHS directive, it is in conformity to definition.” <p>4. Cooperation in Supplier Survey</p> <ul style="list-style-type: none"> • Appended “In addition, suppliers are also expected to make sure carrying on alternative measures like replacement of Banned substances by the appointed date in accordance with this management standard. <u>Please obtain confirmations from relevant division before changing materials and/or processes.</u>” <p>Form 2 Non-use Certificate for Ozone-Depleting Substances in process</p> <ul style="list-style-type: none"> • Objective list Modified “Level 2 restricted substances” to “Level 3 restricted substances” <p>Table 2-1 The Environment-related Substances to be Restricted use or non-use in process for Parts and Materials shipped to HPK “Ozone depleting substances (ODS)”</p> <ul style="list-style-type: none"> • Modified “Level 2 restricted substances”(No57-96) to “Level 1 restricted substances” <p>Table 3. Management Level for Restricted Substances</p> <ul style="list-style-type: none"> • Modified items ruled as “October 1, 2005” in column “The date on or after which HPK won’t accept the target” on each table of Cd, Cr6+, Pb, Hg, TBT/TPT, PVC, Short-chain Paraffin Chloride, Azo dye and pigment, and Formaldehyde to Level 1. • Modified “electrical wires for use in EU” to “electrical wires” in lower part of level 3 on table of PVC. • Modified items ruled as “April 1, 2006” in column “The date on or after which HPK won’t accept the target” on table of Ozone-Depleting Substances to Level 1. (Table 2-1 was also modified). • Appended “mold release agent and cleaner included in the products and/or using in process”. • Appended “Exceptional treatment for use of HCFC (No.57-96 in Table 2-1) Cleaner that persons involved in the relevant division allowed to use after setting its expiration date.” |