

March, 25, 2016

PROCUREMENT DIVISION
SANKEN ELECTRIC CO., LTD.

Manual for Entry of “High-Precision Analysis Results List for RoHS Substance”

★ High-precision analysis result list for RoHS substances.

“High-precision analysis result list for RoHS substances” (hereinafter referred to as the “analysis result list”) is the “Excel format file” in which you are requested to enter the results of high precision analysis of RoHS substances contained in each component part of the product.

★ Entry method of analysis result list

- 1) Please refer to this manual and attached entry examples for the preparation of the list.
- 2) One analysis result list shall be prepared for each surveyed product.

★ Submission of “High precision analysis measurement data”

Please submit to us in the form of the Excel file the analysis result list duly entered together with the measurement data.

[Entry of analysis result list]

★ Please enter the “Information on respondent”.

- (1) Respondent’s date of entry and respondent’s reference number.

Please enter the date of preparation of the analysis result list. The format for entry is YYYY/MM/DD.

- (2) Please enter the information on the respondent.

Address, division name, telephone number, FAX number and E-mail address are given for the contact with the respondent.

★ Please enter each item of the “Information on the surveyed product (subpart)”.

- (3) Your product number, product names, product types.

Please enter your product No., product name and type of the surveyed product. Please make sure that our corresponding product number is entered. Should our product number be unknown, please contact with our person in charge.

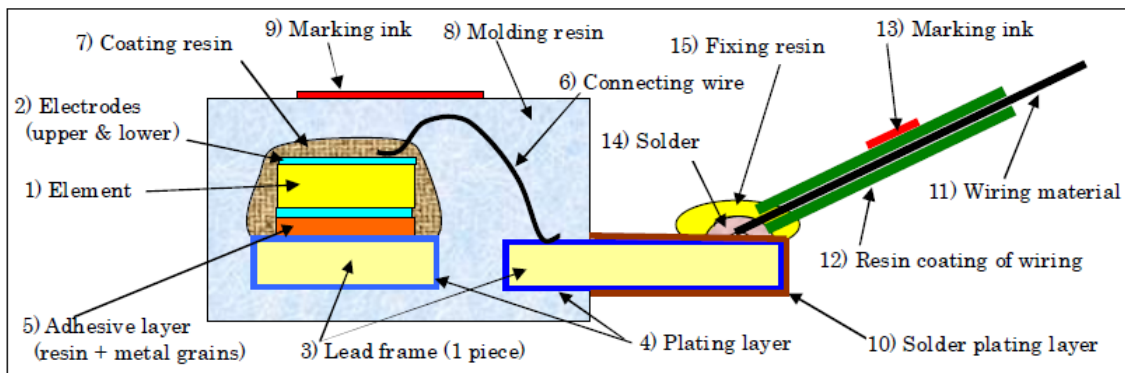
★ Please enter each item of the “Analysis results of the surveyed product(subpart)”.

(4) Names of component parts.

Please enter the name of component parts of the surveyed product in the column “ Names of component parts”. The name may be as used in your company. There are 50 columns per product in the analysis result list, but if the columns are found to be insufficient for such products as complex subparts which have a number of component parts, please consult with us.

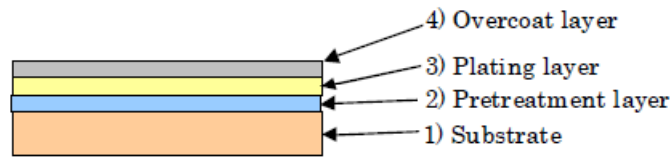
The “component part” means the homogeneous material such as resin material, metallic material, ceramic material, paper material, timber material, filler agent etc.. Please refer to the following example.

Example: For this electronic part (a hypothetical part for explanation), 1) ~15) are component parts.



[Remarks]

- The adhesion part of 14) Solder or 15) Adhesive agent in the above figure is regarded as a component part.
- With respect to the micro part which does not contain any prohibited/managed substance, if the data relating to the contained chemical substance cannot be obtained, the adjacent area may be included for data taking.
- Example) In the above figure, in the case that 1) is a silicon chip in the semiconductor product, if the data for the surface passivation layer and 2) electrode layer cannot be obtained, you may regard 1) silicon chip as a sole component part.
- Each of plural coating layers is regarded as a component part.
- Example) In the case of a product plated on the substrate as shown below, component parts are counted as 4 from 1) to 4).



- The alloy in the electric contact of relays or switches is also regarded as one component part.
- It is not required to survey any component part which does not compose any part of our product.

(e.g. packing materials of your product).

Example) Tubes or cans containing adhesive agent need not be surveyed.

(5) Material manufacturers

Please enter the name of the material manufacturer of each component part.

[Remarks]

- The material manufacturer is requested to enter names of manufacturers of molding resin, ink, paint, printed circuit board, wire/cable, lead frame, adhesive agent, solder etc.. This does not apply to chemical manufacturers, steel manufacturers or vendors like a trading company etc. supplying basic materials.
- For example, in the case of molding resin subparts, please enter the name of the manufacturer of resin who supplies molding resin, not the name of an entity processing the molding work.
- In the case of the surface coating layer, please enter the name of an entity which processes surface coating. (It is not required to survey the manufacturer of original plating solution, ingot for evaporation, surface treatment solution etc..)

(6) Country of production

Please enter the country of production of the component part.

(7) Results of high precision analysis of six RoHS substances

Please enter the results of high precision analysis of 6 RoHS substances for each component part. In principle, the high precision analysis data should be provided by the material manufacturer, but if it is not possible, the data obtained from outside institutes or laboratories to which you ask the analysis (or the data obtained from your own analysis) are acceptable.

(8) Reference number of high precision analysis data sheet.

The attached high precision analysis data measured for each component part shall be

identified by assigning the reference numbers and the reference numbers and measurement date there of shall be entered.

You may use your own management numbers.

[Remarks]

- Please attach the high precision analysis data for each component part without fail. The data shall be obtained within one year prior to submission to us.

(9) Reference number of the Survey Sheet for contained chemical substances.

In conformity with the analysis result list, please enter the reference number of the Survey Sheet for contained chemical substances and the date of preparation of the sheet.

★ High precision analysis

1) Analysis institutes:

The analysis shall be done by a professional institute publicly certified. In the case that you do it for yourself, the management system equivalent to that of the professional institute will be required.

2) Validity period:

The validity period of the high precision analysis data shall be, in principle, one year from the date of the measurement. Therefore, you will be required to update the data subject to the expiration of the current validity period.

3) Our judgment criteria (threshold levels):

RoHS substances		Cd		Pb		Hg/Cr ⁶⁺ /PBBs/PBDEs DEHP or DOP BBP/DBP/DIBP		
		Controlled values	Regulated values	Controlled values	Regulated values	Controlled values (each substance)	Regulated values (each substance)	
Sanken	Plastics, paints, and inks	5	100	50	300	100	1000	
	Solders	Lead free solders	20	100	500	1000	100	1000
		Lead contained solders						
	Electroless nickel plating	50	100	750	1000	100	1000	
	Others	50	100	500	1000	100	1000	
Packaging materials for shipping of Sanken products to customers		Controlled values			Regulated values			
		Cd+Pb+Hg+Cr6+: 50 Cd for plastics, paints, and inks: 5 PBBs, PBDEs: 100 (each			Cd+Pb+Hg+Cr6+: 100 PBBs, PBDEs: 1000 (each substance)			

	substance)	
	<ul style="list-style-type: none"> ● Unit of controlled value and regulated value: “Less than __ ppm” per each homogeneous material ● Intentional use of RoHS substances is prohibited regardless of the content density, excluding Pb in electroless nickel plated. ● RoHS/ELV exemptions are allowed. However, RoHS exemption for deca BDE is not allowed. 	

4) Measurement of hexavalent chromium

- The use of hexavalent chromium is restricted, while that of metal chromium and trivalent chromium is out of the restriction.
- At first, the total chromium is measured.
- In the case that the content of the total chromium meets the judgment criteria of 3), even if the total chromium is regarded as hexavalent chromium, it is judged that the criteria are passed. In this case, you need not identify the hexavalent chromium for analysis.
- If the judgment criteria are not met in the above case, it is required to perform the analysis in order to specify the content of the hexavalent chromium for judgment.

5) Measurement of PBB and PBDE

- a) Noninflammable materials such as metal, ceramic and glass.
 - The high precision analysis of PBB and PBDE is not required.
- b) Inflammable materials such as resin, ink and paint in brominated flame retardant is not intentionally added.
 - It is required to establish by the data of the high precision analysis method (ICP-AES method, AAS method etc.) that bromine is less than 100 ppm.

In the event that bromine of 100 ppm or more is detected, please perform the measurement of c).

- c) Materials in which brominated flame retardant is intentionally added.
 - Is it required to establish by the data of the high precision analysis method (GC-MS method etc.) that PBB and PBDE are less than 100 ppm.

6) Measurement of DEHP (or DOP), BBP, DBP, DIBP

- It is required to establish by the data of the high precision analysis method (GC-MS method etc.) that bromine is less than 100 ppm.