

DOC **Declaration Of Conformity**

Santon International by

Hekendorpstraat 69 • 3079 DX Rotterdam The Netherlands

DECLARE ON OUR SOLE RESPONSIBILITY THAT THE PRODUCT

KIND OF EQUIPMENT : PV DC Switch

TYPE-DESIGNATION : X-XA-XB-XC Type

This EC-Declaration of conformity is following the provisions of RoHS DIRECTIVE 2011/65/EU and its amending.

It is confirmed that a sample of the product has been tested and found in conformity with below standard(s):

RoHS IEC 62321-4: 2017

IEC 62321-5: 2013

IEC 62321-6 : 2015

IEC 62321-7-1 : 2015

IEC 62321-7-2: 2017

IEC 62321-8: 2017

Detailed specification of the tested product shown in the following test report(s):

RoHS Test Report: ETLR190305.0640~ETLR190305.0655

Date of issue :

0

Authorized By:

Santon International by

Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands



Page 1 of 4

Applicant:	Santon	International	bν
• •	Caritori	mitornational	~ .

Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Knob screw

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



by TÜV SÜD lab and the qualified TÜV SÜD mark means our lab is qualified and registered as TÜV SÜD partner lab program with the specific scope and test standards or methods. This special TÜV SÜD mark is property of TÜV SÜD and valid only with the related valid attestation.

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Page 2 of 4

■ Result

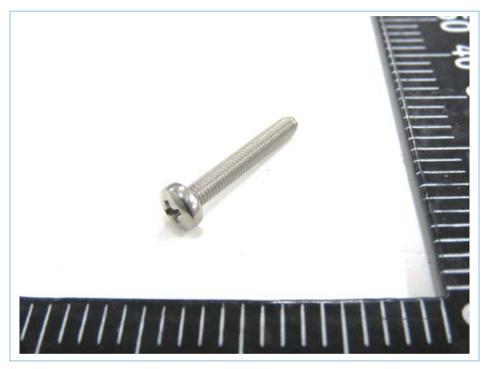
Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 62224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	μg/cm²	IEC 62321-7-1 : 2015, UV-VIS.	0.1	Negative

* Note:



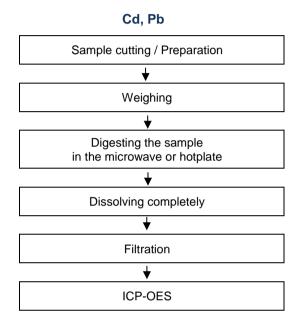


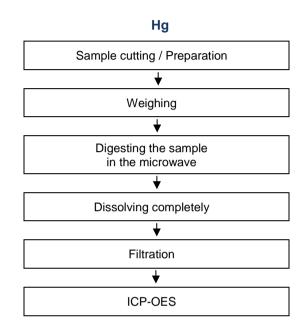


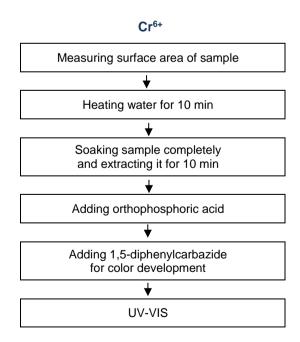
The tested sample is marked by an arrow if it's shown on the photograph.



■ Flow chart









Page 1 of 4

Applicant	. :	Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Mechanism screw

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 4

■ Result

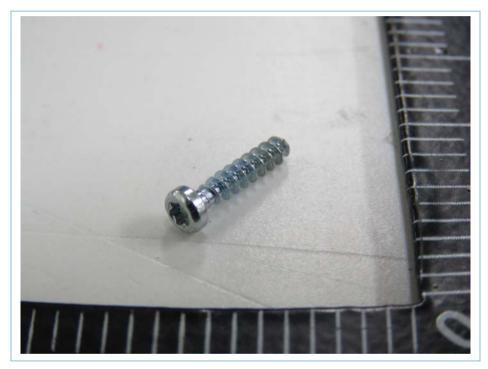
Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 62224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	μg/cm²	IEC 62321-7-1 : 2015, UV-VIS.	0.1	Negative

* Note:



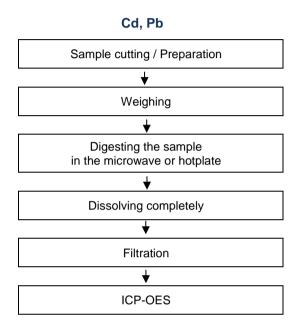


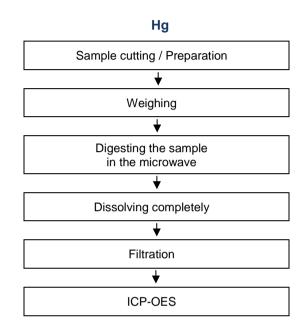


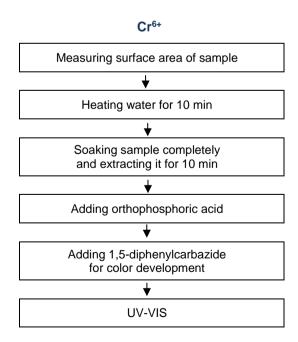
The tested sample is marked by an arrow if it's shown on the photograph.



■ Flow chart









Page 1 of 4

Αp	plicant	:		Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Driving shaft

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period: Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 4

■ Result

Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 62224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	μg/cm²	IEC 62321-7-1 : 2015, UV-VIS.	0.1	Negative

* Note:



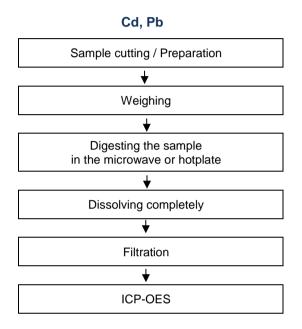


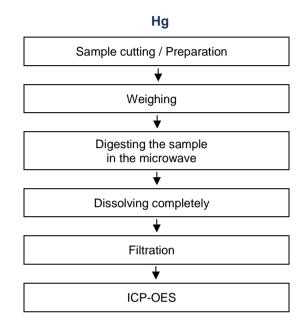


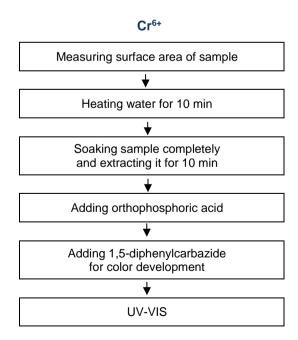
The tested sample is marked by an arrow if it's shown on the photograph.



■ Flow chart









Page 1 of 4

Applicant	. :	Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Driving pin

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 4

■ Result

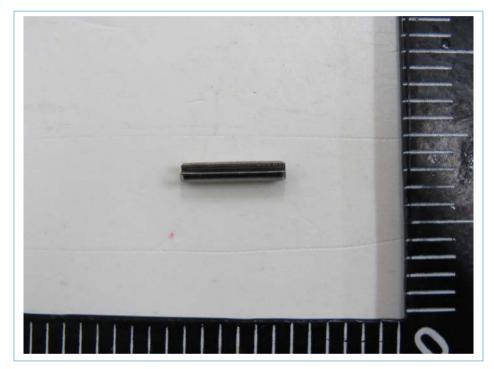
Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 62224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	μg/cm²	IEC 62321-7-1 : 2015, UV-VIS.	0.1	Negative

* Note:



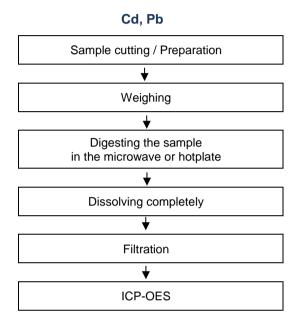


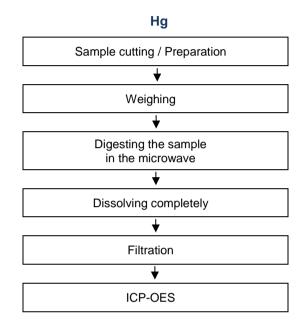


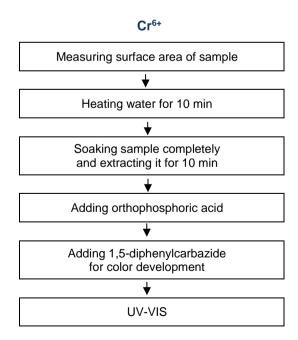
The tested sample is marked by an arrow if it's shown on the photograph.



■ Flow chart









Page 1 of 4

Applicant	:	Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Terminal screw assembly

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 4

■ Result

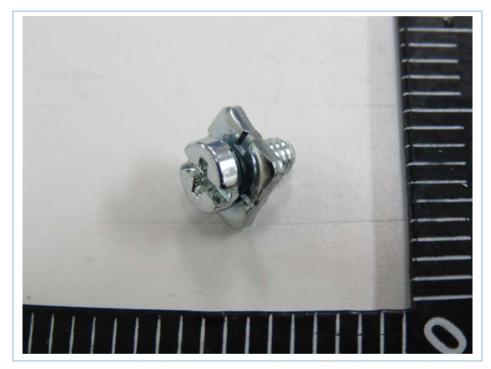
Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 62224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	μg/cm²	IEC 62321-7-1 : 2015, UV-VIS.	0.1	Negative

* Note:



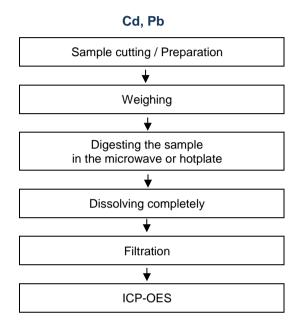


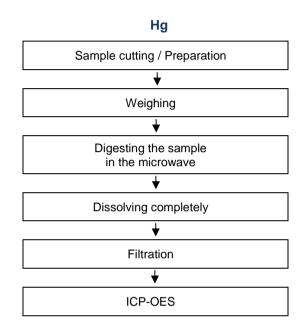


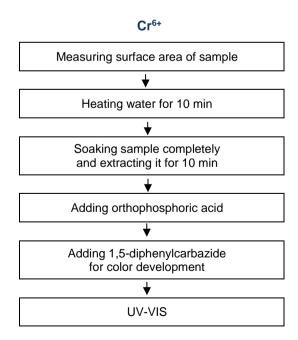
The tested sample is marked by an arrow if it's shown on the photograph.



■ Flow chart









Page 1 of 4

Santon Int	ternational	bν
	Santon In	Santon International

Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Operating spring

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 4

■ Result

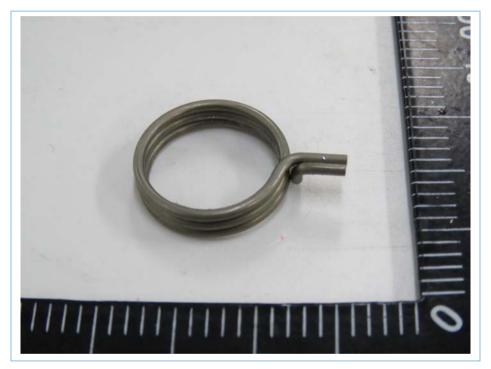
Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 62224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	μg/cm²	IEC 62321-7-1 : 2015, UV-VIS.	0.1	Negative

* Note:



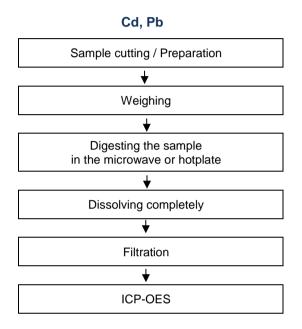


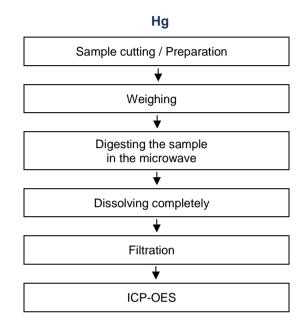


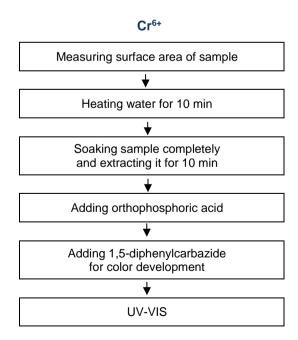
The tested sample is marked by an arrow if it's shown on the photograph.



■ Flow chart









Page 1 of 4

Applicant	. :	Santon	International	bν

Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Terminal

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 4

■ Result

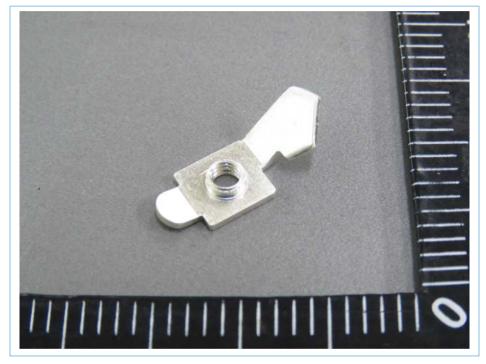
Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IFO 00004 F - 2042 IOD OFO	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	µg/cm²	IEC 62321-7-1 : 2015, UV-VIS.	0.1	Negative

* Note:



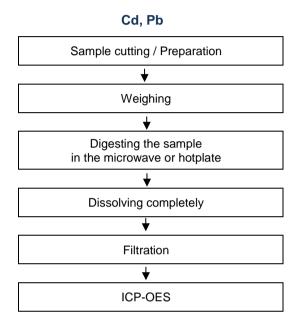


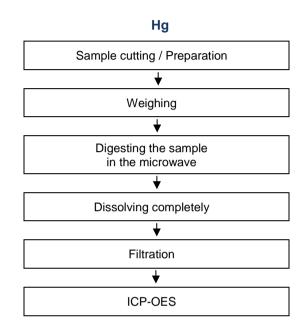


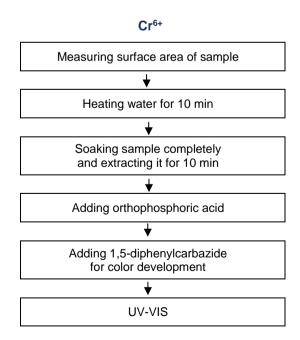
The tested sample is marked by an arrow if it's shown on the photograph.



■ Flow chart









Page 1 of 4

Applicant	:	Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Conductor assy

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 4

■ Result

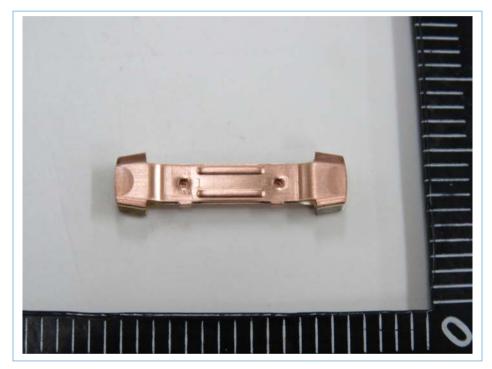
Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IFO 00004 F : 2042 IOD OFO	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	μg/cm²	IEC 62321-7-1 : 2015, UV-VIS.	0.1	Negative

* Note:



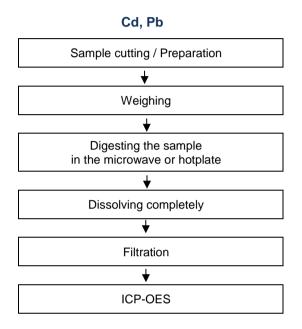


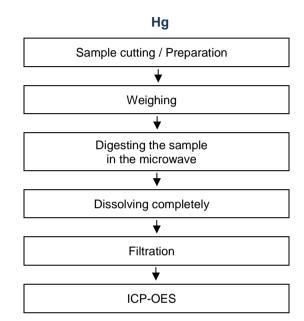


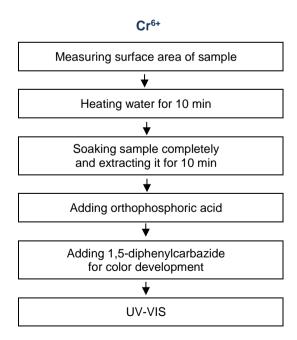
The tested sample is marked by an arrow if it's shown on the photograph.



■ Flow chart









Page 1 of 6

Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Top plate

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period: Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 6

■ Result

Polybrominated biphenyls (PBBs)

Item(s)	Unit	Test Method	MDL	Result
Monobromobiphenyl	mg/kg		5	N.D.
Dibromobiphenyl	mg/kg		5	N.D.
Tribromobiphenyl	mg/kg		5	N.D.
Tetrabromobiphenyl	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromobiphenyl	mg/kg		5	N.D.
Hexabromobiphenyl	mg/kg		5	N.D.
Heptabromobiphenyl	mg/kg		5	N.D.
Octabromobiphenyl	mg/kg		5	N.D.
Nonabromobiphenyl	mg/kg		5	N.D.
Decabromobiphenyl	mg/kg		5	N.D.

Polybrominated diphenyl ethers (PBDEs)

Item(s)	Unit	Test Method	MDL	Result
Monobromodiphenyl ether	mg/kg		5	N.D.
Dibromodiphenyl ether	mg/kg		5	N.D.
Tribromodiphenyl ether	mg/kg		5	N.D.
Tetrabromodiphenyl ether	mg/kg		5	N.D.
Pentabromodiphenyl ether	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Hexabromodiphenyl ether	mg/kg		5	N.D.
Heptabromodiphenyl ether	mg/kg		5	N.D.
Octabromodiphenyl ether	mg/kg		5	N.D.
Nonabromodiphenyl ether	mg/kg		5	N.D.
Decabromodiphenyl ether	mg/kg		5	N.D.





Page 3 of 6

■ Result

Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	150 00004 5, 0040 10D 050	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	mg/kg	IEC 62321-7-2 : 2017, UV-VIS.	1	N.D.

Phthalate

Item(s)	CAS No.	Unit	Test Method	MDL	Result
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	IEC 62321-8 : 2017, GC-MS.	50	N.D.
Di-n-butyl phthalate (DBP)	84-74-2	mg/kg		50	N.D.
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg		50	N.D.
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	mg/kg		50	N.D.

* Note:

MDL = Method detection limit
N.D. = Not detected
Negative = Undetectable / Positive = Detectable
mg/kg = ppm (part per million)

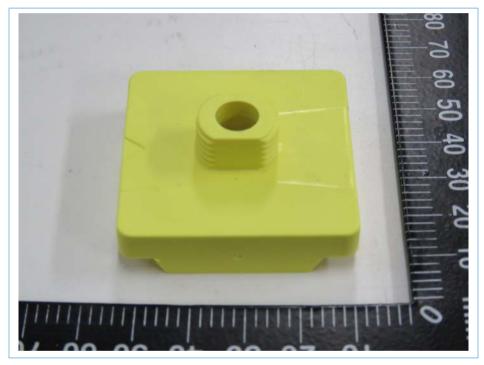
If the star mark (*) is shown on the item, it isn't the scope recognized by TÜV SÜD.

Tested by Na Rae Kim and(or) Hyae Yeon Yoo





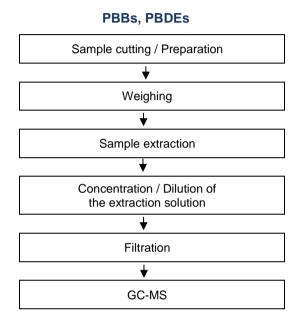
■ Photograph

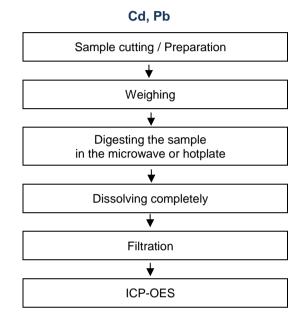


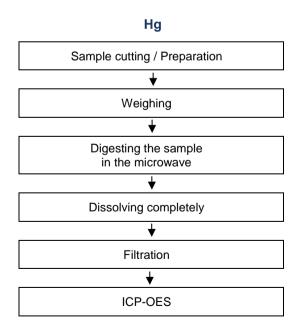
The tested sample is marked by an arrow if it's shown on the photograph.

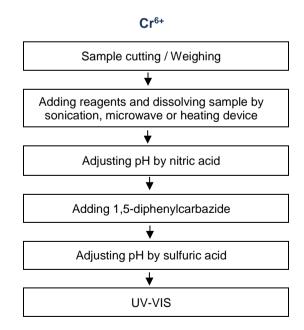


■ Flow chart



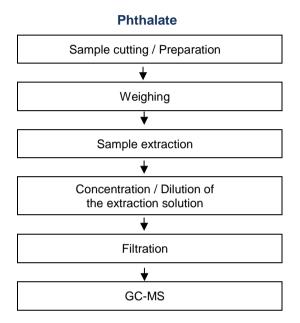








■ Flow chart



- E N D -





Page 1 of 6

Applicant:	Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Conductor Isolator

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



by TÜV SÜD lab and the qualified TÜV SÜD mark means our lab is qualified and registered as TÜV SÜD partner lab program with the specific scope and test standards or methods. This special TÜV SÜD mark is property of TÜV SÜD and valid only with the related valid attestation.

This report is made solely on the basis of your instructions and / or information and sample(s) supplied by you and only responds to the tested sample(s) and doesn't guarantee the quality of your all products. The report is not intended to be a recommendation for any particular course of action. You are responsible for acting as you see fit on the basis of the report results. ETL is under no obligation to refer to or report upon any facts for any matters arising outside the agreed scope of the works. This test report is not the accredited test result by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA. This report shall not be reproduced except in full, without the written approval of ETL Inc.



Page 2 of 6

■ Result

Polybrominated biphenyls (PBBs)

Item(s)	Unit	Test Method	MDL	Result
Monobromobiphenyl	mg/kg		5	N.D.
Dibromobiphenyl	mg/kg		5	N.D.
Tribromobiphenyl	mg/kg		5	N.D.
Tetrabromobiphenyl	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromobiphenyl	mg/kg		5	N.D.
Hexabromobiphenyl	mg/kg		5	N.D.
Heptabromobiphenyl	mg/kg		5	N.D.
Octabromobiphenyl	mg/kg		5	N.D.
Nonabromobiphenyl	mg/kg		5	N.D.
Decabromobiphenyl	mg/kg		5	N.D.

Polybrominated diphenyl ethers (PBDEs)

Item(s)	Unit	Test Method	MDL	Result
Monobromodiphenyl ether	mg/kg		5	N.D.
Dibromodiphenyl ether	mg/kg		5	N.D.
Tribromodiphenyl ether	mg/kg		5	N.D.
Tetrabromodiphenyl ether	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromodiphenyl ether	mg/kg		5	N.D.
Hexabromodiphenyl ether	mg/kg		5	N.D.
Heptabromodiphenyl ether	mg/kg		5	N.D.
Octabromodiphenyl ether	mg/kg		5	N.D.
Nonabromodiphenyl ether	mg/kg		5	N.D.
Decabromodiphenyl ether	mg/kg		5	N.D.





Page 3 of 6

■ Result

Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 02224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	mg/kg	IEC 62321-7-2 : 2017, UV-VIS.	1	N.D.

Phthalate

Item(s)	CAS No.	Unit	Test Method	MDL	Result
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg		50	N.D.
Di-n-butyl phthalate (DBP)	84-74-2	mg/kg	IEC 62321-8 : 2017,	50	N.D.
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg	GC-MS.	50	N.D.
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	mg/kg		50	N.D.

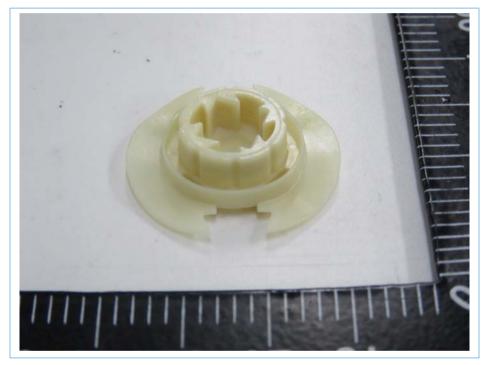
* Note:

MDL = Method detection limit
N.D. = Not detected
Negative = Undetectable / Positive = Detectable
mg/kg = ppm (part per million)
If the star mark (*) is shown on the item, it isn't the scope recognized by TÜV SÜD.
Tested by Na Rae Kim and(or) Hyae Yeon Yoo





■ Photograph

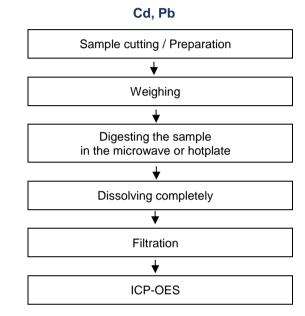


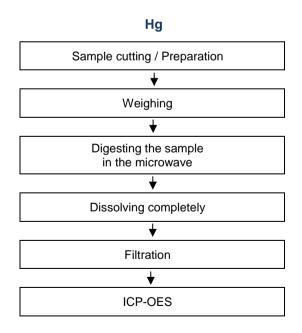
The tested sample is marked by an arrow if it's shown on the photograph.

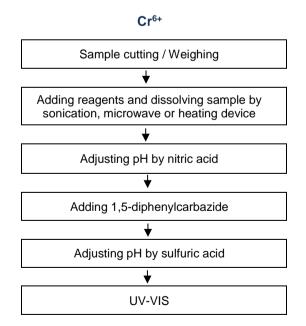


■ Flow chart

PBBs, PBDEs Sample cutting / Preparation Weighing Veighing Sample extraction Concentration / Dilution of the extraction solution Filtration GC-MS

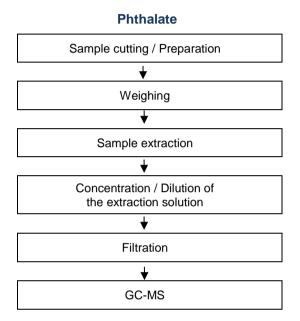








■ Flow chart



- E N D -





Page 1 of 6

Santon Int	ternational	bν
	Santon In	Santon International

Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Locking disk

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



by TÜV SÜD lab and the qualified TÜV SÜD mark means our lab is qualified and registered as TÜV SÜD partner lab program with the specific scope and test standards or methods. This special TÜV SÜD mark is property of TÜV SÜD and valid only with the related valid attestation.

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Head Office: # 114 Gasan digital 2-ro. Genuncheon-on. Republic of Korea Tel. 82-2-858-0786. FAX: 82-2-858-0788. www.etl.re.kr.



Page 2 of 6

■ Result

Polybrominated biphenyls (PBBs)

Item(s)	Unit	Test Method	MDL	Result
Monobromobiphenyl	mg/kg		5	N.D.
Dibromobiphenyl	mg/kg		5	N.D.
Tribromobiphenyl	mg/kg		5	N.D.
Tetrabromobiphenyl	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromobiphenyl	mg/kg		5	N.D.
Hexabromobiphenyl	mg/kg		5	N.D.
Heptabromobiphenyl	mg/kg		5	N.D.
Octabromobiphenyl	mg/kg		5	N.D.
Nonabromobiphenyl	mg/kg		5	N.D.
Decabromobiphenyl	mg/kg		5	N.D.

Polybrominated diphenyl ethers (PBDEs)

Item(s)	Unit	Test Method	MDL	Result
Monobromodiphenyl ether	mg/kg		5	N.D.
Dibromodiphenyl ether	mg/kg		5	N.D.
Tribromodiphenyl ether	mg/kg		5	N.D.
Tetrabromodiphenyl ether	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromodiphenyl ether	mg/kg		5	N.D.
Hexabromodiphenyl ether	mg/kg		5	N.D.
Heptabromodiphenyl ether	mg/kg		5	N.D.
Octabromodiphenyl ether	mg/kg		5	N.D.
Nonabromodiphenyl ether	mg/kg		5	N.D.
Decabromodiphenyl ether	mg/kg		5	N.D.





Page 3 of 6

■ Result

Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 02224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	mg/kg	IEC 62321-7-2 : 2017, UV-VIS.	1	N.D.

Phthalate

Item(s)	CAS No.	Unit	Test Method	MDL	Result
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg		50	N.D.
Di-n-butyl phthalate (DBP)	84-74-2	mg/kg	IEC 62321-8 : 2017,	50	N.D.
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg	GC-MS.	50	N.D.
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	mg/kg		50	N.D.

* Note:

MDL = Method detection limit
N.D. = Not detected
Negative = Undetectable / Positive = Detectable
mg/kg = ppm (part per million)
If the star mark (*) is shown on the item, it isn't the score

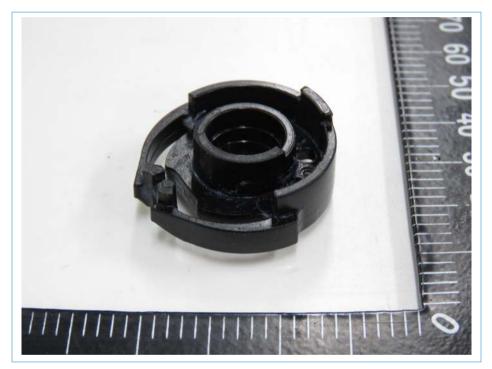
If the star mark (*) is shown on the item, it isn't the scope recognized by TÜV SÜD.

Tested by Na Rae Kim and(or) Hyae Yeon Yoo





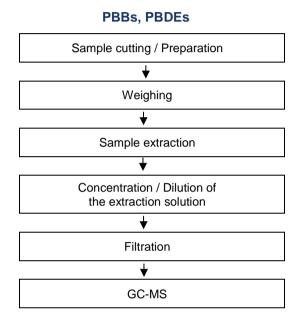
■ Photograph

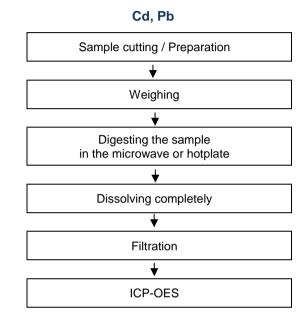


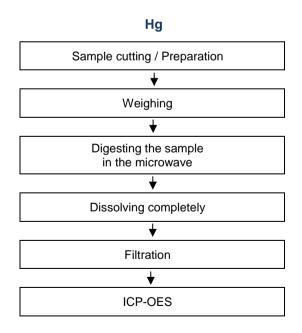
The tested sample is marked by an arrow if it's shown on the photograph.

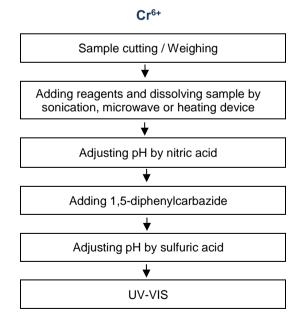


■ Flow chart



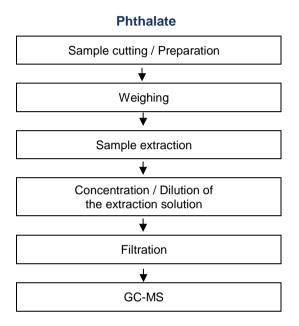








■ Flow chart



- E N D -





Page 1 of 6

Applicant	:	Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: O-ring

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



This test report is not issued by TÜV SÜD lab and the qualified TÜV SÜD mark means our lab is qualified and registered as TÜV SÜD partner lab program with the specific scope and test standards or methods. This special TÜV SÜD mark is property of TÜV SÜD and valid only with the related valid attestations.

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Page 2 of 6

■ Result

Polybrominated biphenyls (PBBs)

Item(s)	Unit	Test Method	MDL	Result
Monobromobiphenyl	mg/kg		5	N.D.
Dibromobiphenyl	mg/kg		5	N.D.
Tribromobiphenyl	mg/kg		5	N.D.
Tetrabromobiphenyl	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromobiphenyl	mg/kg		5	N.D.
Hexabromobiphenyl	mg/kg		5	N.D.
Heptabromobiphenyl	mg/kg		5	N.D.
Octabromobiphenyl	mg/kg		5	N.D.
Nonabromobiphenyl	mg/kg		5	N.D.
Decabromobiphenyl	mg/kg		5	N.D.

Polybrominated diphenyl ethers (PBDEs)

Item(s)	Unit	Test Method	MDL	Result
Monobromodiphenyl ether	mg/kg		5	N.D.
Dibromodiphenyl ether	mg/kg		5	N.D.
Tribromodiphenyl ether	mg/kg		5	N.D.
Tetrabromodiphenyl ether	mg/kg		5	N.D.
Pentabromodiphenyl ether	mg/kg		5	N.D.
Hexabromodiphenyl ether	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Heptabromodiphenyl ether	mg/kg		5	N.D.
Octabromodiphenyl ether	mg/kg		5	N.D.
Nonabromodiphenyl ether	mg/kg		5	N.D.
Decabromodiphenyl ether	mg/kg		5	N.D.





Page 3 of 6

■ Result

Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 02224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	mg/kg	IEC 62321-7-2 : 2017, UV-VIS.	1	N.D.

Phthalate

Item(s)	CAS No.	Unit	Test Method	MDL	Result
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	IEC 62321-8 : 2017, GC-MS.	50	N.D.
Di-n-butyl phthalate (DBP)	84-74-2	mg/kg		50	N.D.
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg		50	N.D.
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	mg/kg		50	N.D.

* Note:

MDL = Method detection limit
N.D. = Not detected
Negative = Undetectable / Positive = Detectable
mg/kg = ppm (part per million)

If the star mark (*) is shown on the item, it isn't the scope recognized by TÜV SÜD.

Tested by Na Rae Kim and(or) Hyae Yeon Yoo





■ Photograph

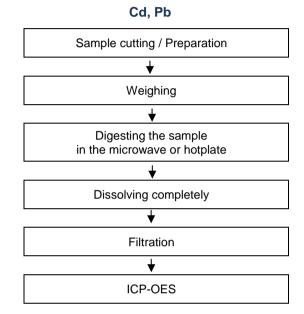


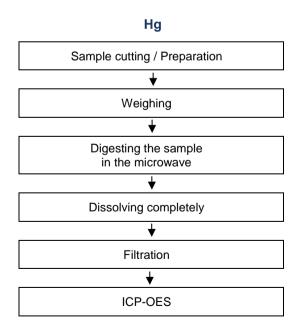
The tested sample is marked by an arrow if it's shown on the photograph.

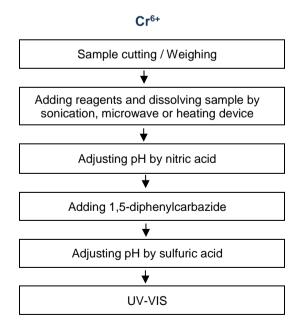


■ Flow chart

PBBs, PBDEs Sample cutting / Preparation Weighing Veighing Sample extraction Concentration / Dilution of the extraction solution Filtration GC-MS

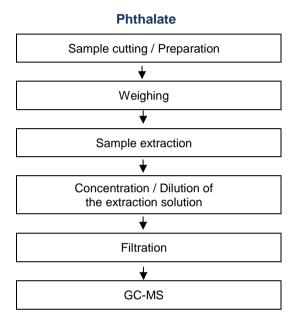








■ Flow chart



- E N D -





Page 1 of 6

Applicant	:	Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Knob

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



by TÜV SÜD lab and the qualified TÜV SÜD mark means our lab is qualified and registered as TÜV SÜD partner lab program with the specific scope and test standards or methods. This special TÜV SÜD mark is property of TÜV SÜD and valid only with the related valid attestation.

This report is made solely on the basis of your instructions and / or information and sample(s) supplied by you and only responds to the tested sample(s) and doesn't guarantee the quality of your all products. The report is not intended to be a recommendation for any particular course of action. You are responsible for acting as you see fit on the basis of the report results. ETL is under no obligation to refer to or report upon any facts for any matters arising outside the agreed scope of the works. This test report is not the accredited test result by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA. This report shall not be reproduced except in full, without the written approval of ETL Inc.

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Page 2 of 6

■ Result

Polybrominated biphenyls (PBBs)

Item(s)	Unit	Test Method	MDL	Result
Monobromobiphenyl	mg/kg		5	N.D.
Dibromobiphenyl	mg/kg		5	N.D.
Tribromobiphenyl	mg/kg		5	N.D.
Tetrabromobiphenyl	mg/kg		5	N.D.
Pentabromobiphenyl	mg/kg		5	N.D.
Hexabromobiphenyl	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Heptabromobiphenyl	mg/kg		5	N.D.
Octabromobiphenyl	mg/kg		5	N.D.
Nonabromobiphenyl	mg/kg		5	N.D.
Decabromobiphenyl	mg/kg		5	N.D.

Polybrominated diphenyl ethers (PBDEs)

Item(s)	Unit	Test Method	MDL	Result
Monobromodiphenyl ether	mg/kg		5	N.D.
Dibromodiphenyl ether	mg/kg		5	N.D.
Tribromodiphenyl ether	mg/kg		5	N.D.
Tetrabromodiphenyl ether	mg/kg		5	N.D.
Pentabromodiphenyl ether	mg/kg		5	N.D.
Hexabromodiphenyl ether	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Heptabromodiphenyl ether	mg/kg		5	N.D.
Octabromodiphenyl ether	mg/kg		5	N.D.
Nonabromodiphenyl ether	mg/kg		5	N.D.
Decabromodiphenyl ether	mg/kg		5	N.D.





Page 3 of 6

■ Result

Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 02224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	mg/kg	IEC 62321-7-2 : 2017, UV-VIS.	1	N.D.

Phthalate

Item(s)	CAS No.	Unit	Test Method	MDL	Result
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	IEC 62321-8 : 2017, GC-MS.	50	N.D.
Di-n-butyl phthalate (DBP)	84-74-2	mg/kg		50	N.D.
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg		50	N.D.
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	mg/kg		50	N.D.

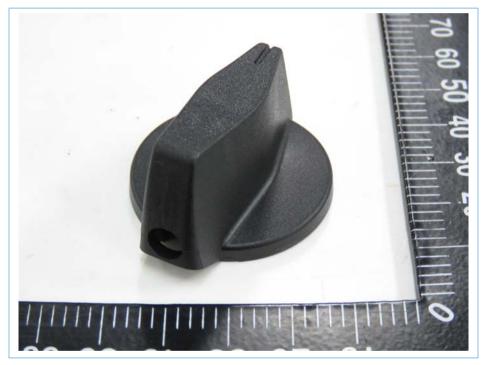
* Note:

MDL = Method detection limit
N.D. = Not detected
Negative = Undetectable / Positive = Detectable
mg/kg = ppm (part per million)
If the star mark (*) is shown on the item, it isn't the scope recognized by TÜV SÜD.
Tested by Na Rae Kim and(or) Hyae Yeon Yoo





■ Photograph

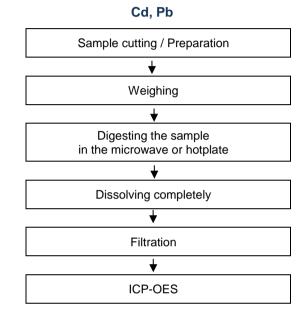


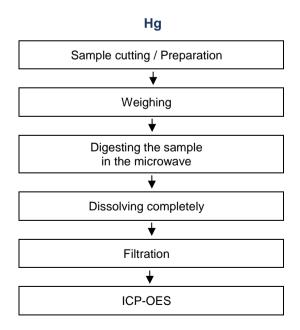
The tested sample is marked by an arrow if it's shown on the photograph.

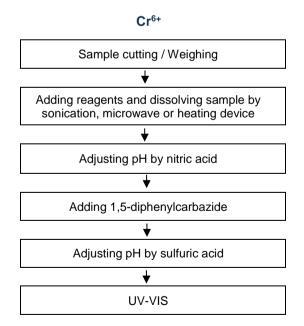


■ Flow chart

PBBs, PBDEs Sample cutting / Preparation Weighing Veighing Sample extraction Concentration / Dilution of the extraction solution Filtration GC-MS

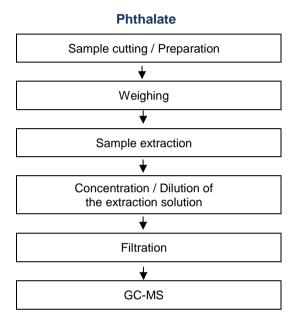








■ Flow chart



- E N D





Page 1 of 6

Applicant	:	Santon	International	bν

Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Cell rubber seal

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 6

■ Result

Polybrominated biphenyls (PBBs)

Item(s)	Unit	Test Method	MDL	Result
Monobromobiphenyl	mg/kg		5	N.D.
Dibromobiphenyl	mg/kg		5	N.D.
Tribromobiphenyl	mg/kg		5	N.D.
Tetrabromobiphenyl	mg/kg		5	N.D.
Pentabromobiphenyl	mg/kg		5	N.D.
Hexabromobiphenyl	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Heptabromobiphenyl	mg/kg		5	N.D.
Octabromobiphenyl	mg/kg		5	N.D.
Nonabromobiphenyl	mg/kg		5	N.D.
Decabromobiphenyl	mg/kg		5	N.D.

Polybrominated diphenyl ethers (PBDEs)

Item(s)	Unit	Test Method	MDL	Result
Monobromodiphenyl ether	mg/kg		5	N.D.
Dibromodiphenyl ether	mg/kg		5	N.D.
Tribromodiphenyl ether	mg/kg		5	N.D.
Tetrabromodiphenyl ether	mg/kg		5	N.D.
Pentabromodiphenyl ether	mg/kg		5	N.D.
Hexabromodiphenyl ether	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Heptabromodiphenyl ether	mg/kg		5	N.D.
Octabromodiphenyl ether	mg/kg		5	N.D.
Nonabromodiphenyl ether	mg/kg		5	N.D.
Decabromodiphenyl ether	mg/kg		5	N.D.





Page 3 of 6

■ Result

Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 02224 E . 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	mg/kg	IEC 62321-7-2 : 2017, UV-VIS.	1	N.D.

Phthalate

Item(s)	CAS No.	Unit	Test Method	MDL	Result
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	IEC 62321-8 : 2017, GC-MS.	50	N.D.
Di-n-butyl phthalate (DBP)	84-74-2	mg/kg		50	N.D.
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg		50	N.D.
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	mg/kg		50	N.D.

* Note:

MDL = Method detection limit
N.D. = Not detected
Negative = Undetectable / Positive = Detectable
mg/kg = ppm (part per million)

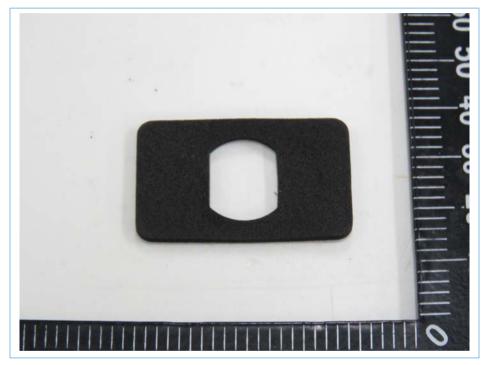
If the star mark (*) is shown on the item, it isn't the scope recognized by TÜV SÜD.

Tested by Na Rae Kim and(or) Hyae Yeon Yoo





■ Photograph

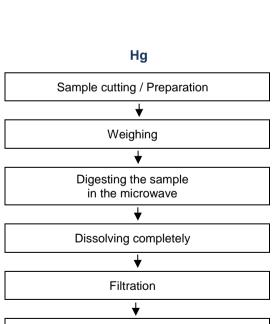


The tested sample is marked by an arrow if it's shown on the photograph.

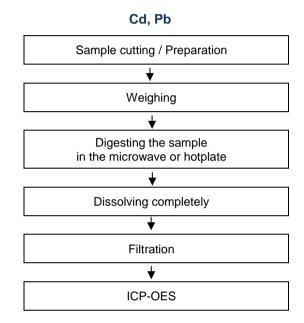


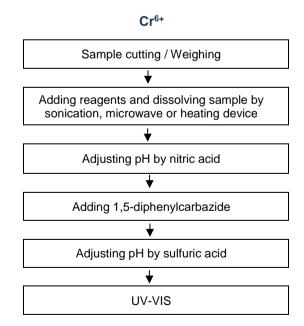
■ Flow chart

PBBs, PBDEs Sample cutting / Preparation Weighing Sample extraction Concentration / Dilution of the extraction solution Filtration GC-MS



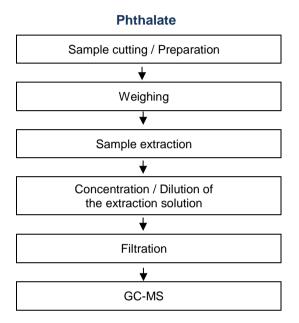
ICP-OES







■ Flow chart



- E N D -





Page 1 of 6

Applicant	:	Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Nut

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 6

■ Result

Polybrominated biphenyls (PBBs)

Item(s)	Unit	Test Method	MDL	Result
Monobromobiphenyl	mg/kg		5	N.D.
Dibromobiphenyl	mg/kg		5	N.D.
Tribromobiphenyl	mg/kg		5	N.D.
Tetrabromobiphenyl	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromobiphenyl	mg/kg		5	N.D.
Hexabromobiphenyl	mg/kg		5	N.D.
Heptabromobiphenyl	mg/kg		5	N.D.
Octabromobiphenyl	mg/kg		5	N.D.
Nonabromobiphenyl	mg/kg		5	N.D.
Decabromobiphenyl	mg/kg		5	N.D.

Polybrominated diphenyl ethers (PBDEs)

Item(s)	Unit	Test Method	MDL	Result
Monobromodiphenyl ether	mg/kg		5	N.D.
Dibromodiphenyl ether	mg/kg		5	N.D.
Tribromodiphenyl ether	mg/kg		5	N.D.
Tetrabromodiphenyl ether	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromodiphenyl ether	mg/kg		5	N.D.
Hexabromodiphenyl ether	mg/kg		5	N.D.
Heptabromodiphenyl ether	mg/kg		5	N.D.
Octabromodiphenyl ether	mg/kg		5	N.D.
Nonabromodiphenyl ether	mg/kg		5	N.D.
Decabromodiphenyl ether	mg/kg		5	N.D.





Page 3 of 6

■ Result

Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IEC 62224 E - 2042 ICD OEC	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	mg/kg	IEC 62321-7-2 : 2017, UV-VIS.	1	N.D.

Phthalate

Item(s)	CAS No.	Unit	Test Method	MDL	Result
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	IEC 62321-8 : 2017, GC-MS.	50	N.D.
Di-n-butyl phthalate (DBP)	84-74-2	mg/kg		50	N.D.
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg		50	N.D.
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	mg/kg		50	N.D.

* Note:

MDL = Method detection limit
N.D. = Not detected
Negative = Undetectable / Positive = Detectable
mg/kg = ppm (part per million)
If the star mark (*) is shown on the item, it isn't the scope recognized by TÜV SÜD.
Tested by Na Rae Kim and(or) Hyae Yeon Yoo





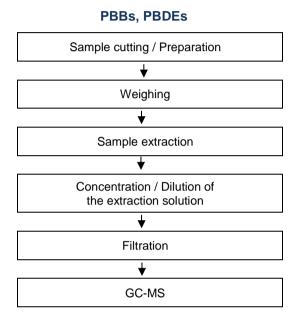
■ Photograph

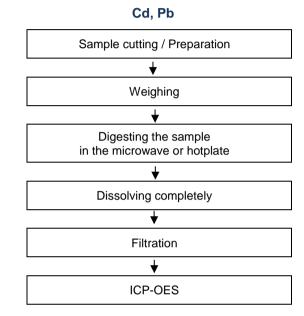


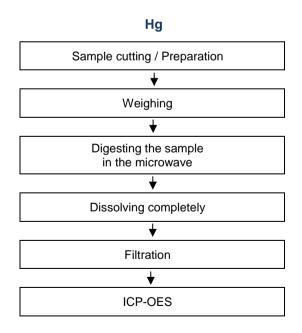
The tested sample is marked by an arrow if it's shown on the photograph.

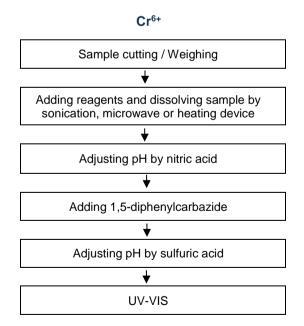


■ Flow chart



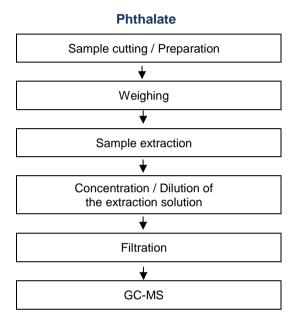








■ Flow chart



- E N D -





Page 1 of 6

Applicant	:	Santon	International	bν
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Hekendorpstraat 69 ● 3079 DX Rotterdam The Netherlands

The following sample(s) was/were submitted and identified on behalf of the applicant as: -

Sample Name: Standard plate

Sample ID/Description: -

Date of receipt: Mar 05, 2019

Test Period : Mar 05 ~ 11, 2019

Date of issue Mar 11, 2019

For further details, please refer to the following pages.

Approved by:

Technical Manager: Jeong Ryeol Baik



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Page 2 of 6

■ Result

Polybrominated biphenyls (PBBs)

Item(s)	Unit	Test Method	MDL	Result
Monobromobiphenyl	mg/kg		5	N.D.
Dibromobiphenyl	mg/kg		5	N.D.
Tribromobiphenyl	mg/kg		5	N.D.
Tetrabromobiphenyl	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromobiphenyl	mg/kg		5	N.D.
Hexabromobiphenyl	mg/kg		5	N.D.
Heptabromobiphenyl	mg/kg		5	N.D.
Octabromobiphenyl	mg/kg		5	N.D.
Nonabromobiphenyl	mg/kg		5	N.D.
Decabromobiphenyl	mg/kg		5	N.D.

Polybrominated diphenyl ethers (PBDEs)

Item(s)	Unit	Test Method	MDL	Result
Monobromodiphenyl ether	mg/kg		5	N.D.
Dibromodiphenyl ether	mg/kg		5	N.D.
Tribromodiphenyl ether	mg/kg		5	N.D.
Tetrabromodiphenyl ether	mg/kg	IEC 62321-6 : 2015, GC-MS.	5	N.D.
Pentabromodiphenyl ether	mg/kg		5	N.D.
Hexabromodiphenyl ether	mg/kg		5	N.D.
Heptabromodiphenyl ether	mg/kg		5	N.D.
Octabromodiphenyl ether	mg/kg		5	N.D.
Nonabromodiphenyl ether	mg/kg		5	N.D.
Decabromodiphenyl ether	mg/kg		5	N.D.





Page 3 of 6

■ Result

Heavy metal

Item(s)	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	IFO 00004 F - 0040 IOD OFO	1	N.D.
Lead (Pb)	mg/kg	IEC 62321-5 : 2013, ICP-OES.	5	N.D.
Mercury (Hg)	mg/kg	IEC 62321-4 : 2017, ICP-OES.	5	N.D.
Hexavalent Chromium (Cr ⁶⁺)	mg/kg	IEC 62321-7-2 : 2017, UV-VIS.	1	N.D.

Phthalate

Item(s)	CAS No.	Unit	Test Method	MDL	Result
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	IEC 62321-8 : 2017, GC-MS.	50	N.D.
Di-n-butyl phthalate (DBP)	84-74-2	mg/kg		50	N.D.
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg		50	N.D.
Di(2-ethyl hexyl) phthalate (DEHP)	117-81-7	mg/kg		50	N.D.

* Note:

MDL = Method detection limit
N.D. = Not detected
Negative = Undetectable / Positive = Detectable
mg/kg = ppm (part per million)
If the star mark (*) is shown on the item, it isn't the scope recognized by TÜV SÜD.
Tested by Na Rae Kim and(or) Hyae Yeon Yoo





■ Photograph



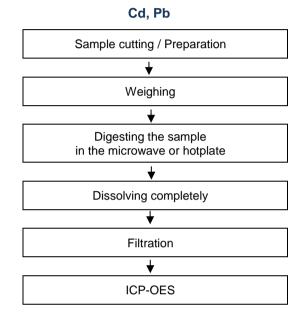
The tested sample is marked by an arrow if it's shown on the photograph.

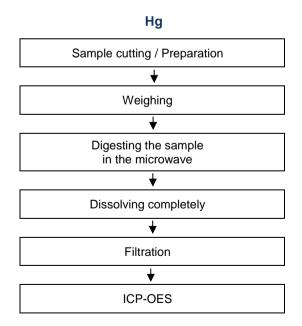


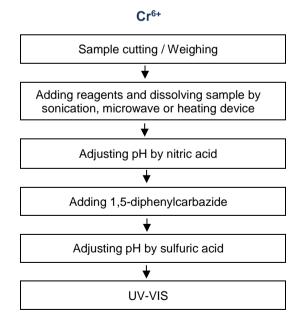


■ Flow chart

PBBs, PBDEs Sample cutting / Preparation Weighing Sample extraction Concentration / Dilution of the extraction solution Filtration GC-MS

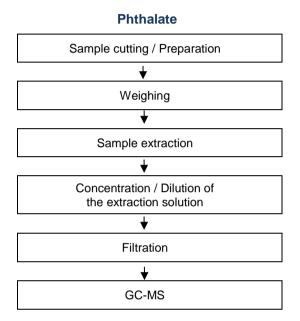








■ Flow chart



- E N D -

