

TÜV Rheinland Malaysia Sdn. Bhd.



Test Report

according to:

Customer Specific Requirement

(SVCH – REACH)

for:

IGL Coatings Ecocoat Series

TÜV Rheinland Malaysia Sdn. Bhd.
No.27, Jalan Para U8/103
Metropolitan Business Park
Seksyen U8, Bukit Jelutong
40150 Shah Alam Selangor, Malaysia

Tel. +60 3 7859 8023
Fax. +60 3 7859 8020
Email: asia@my.tuv.com
Web: www.tuv.com



Table of contents

1. Applicant Details and Scope of Assessment
2. Testing Description
3. Testing Objectives, basis and scope of Application
4. Testing Procedure
5. Testing Evaluations
6. Testing Summary
7. Statement of Conformity
8. Appendix : Photographic Documentation
9. List of Test Measurement / Equipment

 TÜVRheinland®

1. Applicant Details and Scope of Application

Applicant : **Ominent Sdn. Bhd.**
12, Jalan Saudagar Satu, U1/16A, Hicom Glenmarie Industrial Park, 40150, Shah Alam, Selangor Darul Ehsan, Malaysia.

Applicants Representative : **Mr Keong Chun Chieh**

Order Number : **Sign back quotation number 722007907 (Date: 08.06.2016)**

Confirmation Order Number : **1173005242**

Locations of System evaluation : **TUV RHEINLAND MALAYSIA SDN. BHD.**
No.27, Jalan Para U8/103, Metropolitan Business Park, Seksyen U8, Bukit Jelutong, 40150 Shah Alam, Selangor, Malaysia.

Scope of Application : **SVCH-REACH**

Test Sample : **IGL Coatings Ecocoat Series**

Test Sample Receiving Date : **10/06/2016**

Date of Inspection : **From 14/06/2016 To 28/06/2016**

Standards Applied : **Customer Specific Requirement (SVCH-REACH) (Quotation number 722007907)**

Tester / Evaluator : **Nor Ilmi B Hj. Ibrahim**

Participants during testing : **Not Applicable**

Communication Language : **English**

Reported by:

Reviewed by:

28/06/2016
Date


NOR ILMI B HJ IBRAHIM
PROJECT ENGINEER
MOBILITY


MOHD SYAFIQ B HJ MOHD AYOB
ENGINEERING MANAGER
MOBILITY

2. Testing Description

No.	Testing Scope	Testing Description
1	SVCH-REACH	<ol style="list-style-type: none"> 1. Test method is according to Customer Specific Requirement. 2. Test requirement is according to Customer Specific Requirement.

3. Testing Objectives, Basis and Scope of Assessment

No.	Testing Scope	Testing Objective, Basis and Scope of Assessment
1	SVCH-REACH	<ol style="list-style-type: none"> 1. Screening of one hundred and sixty-eight (168) Substances in Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on 2015 December, 17 regarding Regulation (EC) no 1907/2006 concerning the REACH. 2. Screening of four (4) Substances in Proposed List of Substances of Very High Concern (SVHC) published by European Chemicals Agency (ECHA) on February 29, 2016 regarding Regulation (EC) no 1907/2006 concerning the REACH.

4. Testing Procedure

No.	Testing Scope	Testing Procedure
1	SVCH-REACH	<ol style="list-style-type: none"> 1. The sample was subjected to pre-treatment by Microwave assisted acid digestion, solvent extraction, alkaline digestion and solvent sonication. 2. The result was obtained and analyzed by ICP-AES, UV-VIS, GC/MS, LC/MS, GC/FPD and LC/MS/DAD method.

5. Testing Evaluations

No.	Testing Scope	Testing Evaluation
1	SVCH-REACH	<ol style="list-style-type: none"> 1. According to the specified scope and analytical techniques, concentrations of all SVHC are ≤ 0.1 % (w/w) in the submitted sample. 2. Refer APPENDIX 2 and APPENDIX 3.

6. Testing Summary

No.	Testing Scope	Result
1	SVCH-REACH	Reported

7. Statement of Conformity

This report is CONFIDENTIAL and is the customer property as mention above. TUV Rheinland Malaysia Sdn. Bhd. shall not be responsible for any distribution copies of this report or any implications arise from such distribution.

The results of analysis performed by TUV Rheinland Malaysia Sdn. Bhd. apply to the particular samples at the time of its analysis. They do not indicate or imply that TUV Rheinland Malaysia Sdn. Bhd. approves, recommended or endorses the manufacturers or suppliers or users of products and it shall not be used to imply product certification.

TUV Rheinland Malaysia is listed in the group certification of TÜV Rheinland Kraftfahrt GmbH as competent according to DIN EN ISO / IEC 17025. DAR-Registration-No.: KBA-P00010-96.



8. Appendix: Photographic Documentation

APPENDIX 1: TEST SAMPLE



Photo 1: Test sample - IGL Coatings Ecocoat Series


TÜVRheinland®

APPENDIX 2: SVCH CANDIDATE LIST (17/12/2015)

No.	Parameter	CAS No.	Concentration of Article	Unit
1	4,4'-Diaminodiphenylmethane	101-77-9	ND(<0.005)	%
2	5-tert-butyl-2,4,6-trinitro-m-xylene (Musk Xylene)	81-15-2	ND(<0.005)	%
3	Hexabromocyclododecane(HBCDD) and all major diastereoisomers identified: α -HBCDD, β -HBCDD, γ -HBCDD)	25637-99-4 and 3194-55-6 (134237-506, 134237-51-7, 134247-52-8)	ND(<0.005)	%
4	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffin)	85535-84-8	ND(<0.05)	%
5	Anthracene	120-12-7	ND(<0.005)	%
6	*Bis(tributyltin)oxide (TBTO)	56-35-9	ND(<0.005)	%
7	*Cobalt Dichloride	7646-79-9	ND(<0.005)	%
8	*Sodium Dichromate	7789-12-0	ND(<0.005)	%
9	*Diarsenic pentaoxide	1303-28-2	ND(<0.005)	%
10	*Diarsenic trioxide	1327-53-3	ND(<0.005)	%
11	*Triethyl arsenate	15606-95-8	ND(<0.005)	%
12	*Lead hydrogen arsenate	7784-40-9	ND(<0.005)	%
13	Acrylamide	79-06-1	ND(<0.005)	%
14	2,4-Dinitrotoluene	121-14-2	ND(<0.05)	%
15	Tris (2-chloroethyl) phosphate (TCEP)	115-96-8	ND(<0.05)	%
16	Anthracene oil	90640-80-5	ND(<0.05)	%
17	Anthracene oil, Anthracene paste, distn.Lights	91995-17-4	ND(<0.05)	%
18	Anthracene oil, Anthracene paste, Anthracene fraction	91995-15-2	ND(<0.05)	%
19	Anthracene oil, Anthracene-low	90640-82-7	ND(<0.05)	%
20	Anthracene oil, Anthracene paste	90640-81-6	ND(<0.05)	%

No.	Parameter	CAS No.	Concentration of Article	Unit
21	Pitch, coal tar, high temperature	65996-93-2	ND(<0.05)	%
22	Lead chromate	7758-97-6	ND(<0.01)	%
23	Lead sulfochromate yellow (C.I. Pigment yellow 34)	1344-37-2	ND(<0.01)	%
24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	ND(<0.01)	%
25	Zirconia Aluminosilicate Refractory Ceramic Fibres [Oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges]	Extracted from Index No. 650-017-00-8	ND(<0.05)	%
26	Aluminosilicate Refractory Ceramic Fibers [Oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges]	Extracted from Index No. 650-017-00-8	ND(<0.05)	%
27	Trichloroethylene	79-01-6	ND(<0.05)	%
28	#Boric Acid	10043-35-3/ 11113-50-1	ND(<0.01)	%
29	#Disodium Tetraborate, anhydrous	1303-96-4, 1330-43-4, 12179-04-3	ND(<0.01)	%
30	Tetraboron Disodium Heptaoxide, hydrate	12267-73-1	ND(<0.01)	%
31	#Potassium Chromate	7789-00-6	ND(<0.005)	%
32	#Sodium Chromate	7775-11-3	ND(<0.005)	%
33	#Potassium Dichromate	7778-50-9	ND(<0.005)	%
34	#Ammonium Dichromate	7789-09-5	ND(<0.005)	%
35	2-Methoxyethanol	109-86-4	ND(<0.05)	%
36	2-Ethoxyethanol	110-80-5	ND(<0.05)	%
37	#Cobalt (II) Sulphate	10124-43-3	ND(<0.01)	%
38	#Cobalt (II) Dinitrate	10141-05-6	ND(<0.01)	%
39	#Cobalt (II) Diacetate	71-48-7	ND(<0.01)	%

No.	Parameter	CAS No.	Concentration of Article	Unit
40	#Cobalt (II) Carbonate	513-79-1	ND(<0.01)	%
41	#Chromium Trioxide	1333-82-0	ND(<0.005)	%
42	#Chromium Acid Oligomers of Chromic acid and dichromic acid, Dichromic Acid	7738-94-5 - 13530-68-2	ND(<0.005)	%
43	1-Methyl-2-pyrrolidone	872-50-4	ND(<0.05)	%
44	2-Ethoxyethyl Acetate	111-15-9	ND(<0.05)	%
45	1,2,3,Trichloropropane	96-18-4	ND(<0.05)	%
46	Hydrazine	302-01-2/ 7803-57-8	ND(<0.05)	%
47	#Strontium Chromate	7789-06-2	ND(<0.005)	%
48	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	ND(<0.05)	-
49	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	ND(<0.05)	-
50	#Calcium arsenate	7778-44-1	ND(<0.005)	%
51	Bis(2-methoxyethyl) ether	111-96-6	ND(<0.05)	%
52	#Potassium hydroxyoctaoxodizincatedichromate	11103-86-9	ND(<0.005)	%
53	#Lead dipicrate	6477-64-1	ND(<0.01)	%
54	N,N-dimethylacetamide	127-19-5	ND(<0.05)	%
55	#Arsenic acid	7778-39-4	ND(<0.005)	%
56	2-Methoxyaniline; o-Anisidine	90-04-0	ND(<0.05)	%
57	#Trilead diarsenate	3687-31-8	ND(<0.005)	%
58	1,2-dichloroethane	107-06-2	ND(<0.05)	%
59	#Pentazinc chromate octahydroxide	49663-84-5	ND(<0.005)	%

No.	Parameter	CAS No.	Concentration of Article	Unit
60	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	ND(<0.05)	%
61	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	ND(<0.05)	%
62	Bis(2-methoxyethyl) phthalate	117-82-8	ND(<0.05)	%
63	#Lead diazide, Lead azide	13424-46-9	ND(<0.01)	%
64	#Lead styphnate	15245-44-0	ND(<0.01)	%
65	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	ND(<0.05)	%
66	Phenolphthalein	77-09-8	ND(<0.05)	%
67	#Dichromium tris(chromate)	24613-89-6	ND(<0.005)	%
68	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	548-62-9	ND(<0.05)	%
69	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β -TGIC)	59653-74-6	ND(<0.05)	%
70	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	ND(<0.05)	%
71	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	561-41-1	ND(<0.05)	%
72	#Lead(II) bis(methanesulfonate)	17570-76-2	ND(<0.005)	%
73	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	ND(<0.05)	%
74	#Diboron trioxide	1303-86-2	ND(<0.05)	%
75	α,α -Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	ND(<0.05)	%

No.	Parameter	CAS No.	Concentration of Article	Unit
75	α,α -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	ND(<0.05)	%
76	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	ND(<0.05)	%
77	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	ND(<0.05)	%
78	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	ND(<0.05)	%
79	4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	ND(<0.05)	%
80	Formamide	75-12-7	ND(<0.05)	%
81	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	ND(<0.05)	%
82	Pentacosafuorotridecanoic acid	72629-94-8	ND(<0.05)	%
83	Tricosafuorododecanoic acid	307-55-1	ND(<0.05)	%
84	Henicosafuoroundecanoic acid	2058-94-8	ND(<0.05)	%
85	Heptacosafuorotetradecanoic acid	376-06-7	ND(<0.05)	%
86	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	ND(<0.05)	%
87	Cyclohexane-1,2-dicarboxylic anhydride [1] cis-cyclohexane-1,2-dicarboxylic anhydride[2] trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry].	85-42-7, 13149-00-3, 14166-21-3	ND(<0.05)	%

No.	Parameter	CAS No.	Concentration of Article	Unit
88	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	ND(<0.05)	%
89	4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	-	ND(<0.05)	%
90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]	-	ND(<0.05)	%
91	Methoxyacetic acid	625-45-6	ND(<0.05)	%
92	N,N-dimethylformamide; dimethyl formamide	68-12-2	ND(<0.05)	%
93	Dibutyltin dichloride (DBTC)	683-18-1	ND(<0.05)	%
94	#Lead monoxide (Lead oxide)	1317-36-8	ND(<0.005)	%
95	#Orange lead (Lead tetroxide)	1314-41-6	ND(<0.005)	%
96	#Lead bis(tetrafluoroborate)	13814-96-5	ND(<0.005)	%
97	#Trilead bis(carbonate)dihydroxide (basic lead carbonate)	1319-46-6	ND(<0.005)	%
98	#Lead titanium trioxide	12060-00-3	ND(<0.005)	%
99	#Lead titanium zirconium oxide	12626-81-2	ND(<0.005)	%
100	#Silicic acid, lead salt	11120-22-2	ND(<0.005)	%

No.	Parameter	CAS No.	Concentration of Article	Unit
101	#Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	68784-75-8	ND(<0.005)	%
102	1-bromopropane (n-propyl bromide)	106-94-5	ND(<0.05)	%
103	Methyloxirane (Propylene oxide); 1,2-epoxypropane	75-56-9	ND(<0.05)	%
104	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	ND(<0.05)	%
105	Diisopentylphthalate (DIPP)	605-50-5	ND(<0.05)	%
106	N-pentyl-isopentylphthalate	776297-69-9	ND(<0.05)	%
107	1,2-diethoxyethane	629-14-1	ND(<0.05)	%
108	#Acetic acid, lead salt, basic	51404-69-4	ND(<0.005)	%
109	#Lead oxide sulfate	12036-76-9	ND(<0.005)	%
110	#[Phthalato(2-)]dioxotrilead	69011-06-9	ND(<0.005)	%
111	#Dioxobis(stearato)trilead	12578-12-0	ND(<0.005)	%
112	#Fatty acids, C16-18, lead salts	91031-62-8	ND(<0.005)	%
113	#Lead cyanamide	20837-86-9	ND(<0.005)	%
114	#Lead dinitrate	10099-74-8	ND(<0.005)	%
115	#Pentalead tetraoxide sulphate	12065-90-6	ND(<0.005)	%
116	#Pyrochlore, antimony lead yellow	8012-00-8	ND(<0.005)	%
117	#Sulfurous acid, lead salt, dibasic	62229-08-7	ND(<0.005)	%
118	#Tetraethyllead	78-00-2	ND(<0.005)	%

No.	Parameter	CAS No.	Concentration of Article	Unit
119	#Tetralead trioxide sulphate	12202-17-4	ND(<0.005)	%
120	#Trilead dioxide phosphonate	12141-20-7	ND(<0.005)	%
121	Furan	110-00-9	ND(<0.05)	%
122	Diethyl sulphate	64-67-5	ND(<0.05)	%
123	Dimethyl sulphate	77-78-1	ND(<0.05)	%
124	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	ND(<0.05)	%
125	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	ND(<0.05)	%
126	4,4'-methylenedi-o-toluidine	838-88-0	ND(<0.05)	%
127	4,4'-oxydianiline and its salts	101-80-4	ND(<0.05)	%
128	4-aminoazobenzene ; 4-Phenylazoaniline	60-09-3	ND(<0.05)	%
129	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	ND(<0.05)	%
130	6-methoxy-m-toluidine (p-cresidine)	120-71-8	ND(<0.05)	%
131	Biphenyl-4-ylamine	92-67-1	ND(<0.05)	%
132	o-aminoazotoluene [(4-o-tolylazo-o-toluidine)]	97-56-3	ND(<0.05)	%
133	o-toluidine ; 2-Aminotoluene	95-53-4	ND(<0.05)	%
134	N-methylacetamide	79-16-3	ND(<0.05)	%
135	Pentadecafluorooctanoic Acid (PFOA)	335-67-1	ND(<0.05)	%
136	Ammoniumpentadecafluorootanoate (APFO)	3825-26-1	ND(<0.05)	%
137	Cadmium (Cd)	7440-43-9	ND(<0.005)	%
138	#Cadmium oxide	1306-19-0	ND(<0.005)	%
139	DPP (Di-pentyl phthalate)	131-18-0	ND(<0.05)	%

No.	Parameter	CAS No.	Concentration of Article	Unit
140	4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	-	ND(<0.05)	%
141	#Cadmium sulphide	1306-23-6	ND(<0.005)	%
142	Dihexyl phthalate	84-75-3	ND(<0.05)	%
143	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)] bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	ND(<0.05)	%
144	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	ND(<0.05)	%
145	Imidazolidine-2-thione; 2-imidazoline-2-thiol	96-45-7	ND(<0.05)	%
146	#Lead di (acetate)	301-04-2	ND(<0.01)	%
147	Trixylyl phosphate	25155-23-1	ND(<0.05)	%
148	#Sodium peroxometaborate	7632-04-4	ND(<0.05)	%
149	#Cadmium chloride	10108-64-2	ND(<0.005)	%
150	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	ND(<0.01)	%
151	#Perboric acid, sodium salt; sodium perborate	15120-21-5	ND(<0.01)	%
152	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV 328)	25973-55-1	ND(<0.05)	%
153	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV 320)	3846-71-7	ND(<0.05)	%
154	#Cadmium Fluoride	7790-79-6	ND(<0.05)	%
155	#Cadmium Sulphate	10124-36-4 31119-53-6	ND(<0.05)	%
156	#2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	ND(<0.05)	%

No.	Parameter	CAS No.	Concentration of Article	Unit
157	#Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	-	ND(<0.05)	%
158	Dibutyl phthalate (DBP)	84-74-2	ND(<0.05)	%
159	Benzyl butyl phthalate (BBP)	85-68-7	ND(<0.05)	%
160	Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND(<0.05)	%
161	Diisobutyl phthalate (DIBP)	84-69-5	ND(<0.05)	%
162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1	ND(<0.01)	%
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]	-	ND(<0.01)	%
164	1,3-propanesultone	1120-71-4	ND(<0.05)	%
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	ND(<0.05)	%
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	ND(<0.05)	%
167	Nitrobenzene	98-95-3	ND(<0.05)	%
168	Perfluorononan-1-oic acid (2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-heptadecafluorononanoic acid and its sodium and ammonium salts	375-95-1 21049-39-8 4149-60-4	ND(<0.05)	%

APPENDIX 3: SVCH PROPOSED LIST (29/02/2016)

No.	Parameter	CAS No.	Concentration of Article	Unit
1	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one (4-methylbenzylidene camphor)	36861-47-9	ND(<0.05)	%
2	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-Benzylidenecamphor)	15087-24-8	ND(<0.05)	%
3	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	ND(<0.05)	%
4	Dicyclohexyl phthalate (DCHP)	84-61-7	ND(<0.05)	%



TÜVRheinland®

APPENDIX 4: NOTES

1. The analysis of 168 SVHC is performed by means of currently available analytical techniques and scientific equipment against 170 SVHC candidates and propose list published by ECHA 17 December 2015.
The chemical analysis 4 SVHC is performed by means of currently available analytical techniques against the list published ON February 29, 2016. This list is under evaluation by ECHA and may subject to change in the future.
2. In accordance with Regulation (EC) No 1907/2006 Article 7 paragraph (2), any producer or importer of articles shall notify the ECHA, if a substances meets the criteria in Article 57 and is identified in accordance with Article 59(1), if both the following condition are meets:
 - i. The substance is present in those articles in quantities totaling over one tonne per producer or importer per year; and
 - ii. The substance is present in those articles above a concentration of 0.1% weight by weight (w/w).
3. Article 33 of Regulation (EC) No 1907/2006 stated that any supplier of an article containing a substances meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substances.
4. If a SVHC is detected and exceeded reporting limit, customer is suggested to identify those component which contains the SVHC and the exact concentration of the SVHC shall be determined quantitative by the laboratory.
5. Reporting limit is derived from the detection limit of selected element(s) and/or ion(s). Reported concentration as per compound is calculated based upon the detected concentration of selected element(s) and/or ion(s).
6. 0.1% (w/w) = 1000 ppm = 1000 mg/kg
7. mg/kg = ppm ; 0.1 wt% =1000ppm
8. ND = not detected = below Reporting Limit
9. Definition of classification is listed in Page 18 to 20 of this report in accordance with 67/548/EEC and Regulation (EC) No 1907/2006

10. conc. Of Sodium dichromate dehydrate (CAS No.: 7789-12-0) = conc. Of sodium dichromate x 1.1374
11. The concentrations of above-mentioned mixtures are evaluated per the gained composition rate between the selected marks and the mixtures. The mixtures test with a couple of articles was implemented according to the applicant's request. Even though the test result "ND" (Not Detected) for the submitted article is obtained, but the obtained test result doesn't stand for the test result of the respective articles. Therefore, the conclusion can't be made for a mixed test.
12. Oligomers of chromic acid and dichromic acid: since the oligomers are made of unknown amount of chromic acid or dichromic acid that results in no fixed molecular weight, therefore the monomer of chromic acid or dichromic acid is relevant and considered.
13. Tetraboron disodium heptaoxide, hydrate: Only anhydrous form of disodium tetraborate is relevant and considered according to ECHA explanation (Ref no.: INC000000032519).
14. Respectively used for the calculation of independent concentration of the compound containing Arsenic, Lead, Cr(VI), Boron, Cobalt, Barium and Cadmium was calculated respectively. The minimum value of the two independently calculated concentrations is used as the final concentration for the report.
15. TGIC is a mixture and also contains β -TGIC. According to the ECHA's technical dossier the ratio of β -TGIC to TGIC is around 1 to 10. Therefore β -TGIC is issued based on the above-mentioned ratio.
16. Regarding the compound containing arsenic and lead, lead and arsenic are tested and respectively used for the calculation of the independent concentration of the compound containing arsenic and lead. The minimum value of the two independently calculated concentrations is used as the final concentration for the report.
17. Only if both qualitative results of lead and silicon are positive, the test result of the compound will be calculated based on the concentration of barium.
18. The below substance was calculated by the test results of Tributyl Tin (TBT), PFOA or element Arsenic, Lead, Cr(VI), Boron, Cobalt, Barium, Cadmium, Dioctyl Tin (DOT) and Monoctyl Tin (MOT) respectively with formula $AX = A \times F$:

AX	A	F
Diarsenic pentaoxide	Arsenic	1.5339
Diarsenic trioxide		1.3203
Triethyl arsenate		3.0179
Lead hydrogen arsenate	Lead	4.6332
Lead dipicrate		1.6753
Lead styphnate		3.2017
Lead diazine, Lead azide		2.1732
Trilead diarsenate	Arsenic	1.4056
Arsenic acid		1.447
Calcium arsenate	Cobalt	6.0025
Cobalt (II) sulphate		1.8946
Cobalt (II) dinitrate		2.6566
Cobalt (II) carbonate		2.63
Cobalt (II) diacetate		3.1042
Sodium dichromate	Hexavalent Chromium Cr(VI)	2.0183
Sodium chromate		3.0038
Ammonium dichromate		2.5192
Potassium dichromate		3.1151
Potassium chromate		2.4239
Chromium trioxide		2.8289
Chromium acid		3.7347
Dichromic acid		1.9231
Strontium chromate		2.2696
Pentazinc chromate octahydroxide		2.0963
Potassium hydroxyoctaoxidizincatedi-chromate		3.9159
Dichromium tris (chromate)		11.1345
Bis(tributyltin) oxide		Tributyl Tin (TBT)
Dibutyltin Hydrogen Borate (DBB)	Dibutyl Tin (DBT)	2.8975
Diboron trioxide	Boron	1.0276
Boric acid		1.2568
Disodium tetraborate, anhydrous		3.2199
Disodium tetraborate, pentahydrate		5.7195
Disodium tetraborate, decahydrate		4.6531
Sodium perborate; perboric acid, sodium salt		6.7361
Sodium peroxometaborate		8.8191
Disodium Octaborate Tetrahydrate	9.2333	
Cadmium oxide	Cadmium	7.5668
Cadmium sulphide		4.770
cadmium chloride		1.1423
Lead di(acetate)		1.2852
Cadmium fluoride		1.6307
Cadmium sulphate	Barium	1.57
Silicic acid, barium salt, lead-doped		1.338
Ammoniumpentadecafluorooctanote(APFO)	PFOA	1.8546
Antimony Trioxide	Antimony	1.9916
Antimony Pentaoxide		1.0411
Bismuth Monoxide	Bismuth	1.1971
Beryllium Oxide	Beryllium	1.3285
Silicon Dioxide	Silicon	1.0766
Sodium Oxide	Sodium	2.7753
Aluminium Oxide	Aluminium	2.1393
Zinc Oxide	Zinc	1.348
Titanium Dioxide	Titanium	1.8895
		1.2447
		1.6685

AX	A	F
Lead (II) bis (methanesulfonate)	Lead	1.9179
Acetic acid, lead salt, basic		1.367
Trilead bis(carbonate) dihydroxide (basic lead carbonate)		1.2478
Lead oxide sulfate		1.2704
[Phthalato (2-)] dioxotrilead		1.3155
Dioxobis (stearate) trilead		1.9635
Fatty acids, C16-18, lead salts		3.7362
Lead cyanamidate		1.2029
Lead dinitrate		1.5985
Lead oxide (lead monoxide)		1.0772
Lead tetraoxide (orange lead)		1.103
Pentalead tetraoxide sulphate		1.1545
Silicic acid, lead salt		1.3672
Sulfurous acid, lead salt, dibasic		1.2753
Tetraethyllead		1.561
Tetralead trioxide sulphate		1.1738
Lead bis (tetrafluoroborate)		1.8379
Lead titanium trioxide		1.4627
Lead Titanium Zirconium Oxide		1.9029
Pyrochlore, antimony lead yellow		1.1801
Trilead dioxide phosphate	1.1801	

Formula: $AX = A1 \times F1 + A2 \times F2$

AX	A	F
Reaction mass of 2-ethylhexyl 10-ethyl-4,4- dioctyl-7-oxo-8-oxa-3, 5-dithia-4- stannatetradecanoate and 2-ethylhexyl 10-ethyl-4[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4- octyl-7-oxo-8 -oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	Diocetyl Tin (DOT)	2.1781
	Monooctyl Tin (MOT)	3.6299

TÜVRheinland

19. Definition of classification in accordance with 67/548/EEC and Regulation (EC) No 1907/2006 as below:

Classification	Definition under Regulation (EC) No. 1272/2008 (CLP) Regulation (EC) No. 1907/2006
Carcinogen Category 1A	Substances known to be carcinogenic to man. There is sufficient evidence to establish a causal association between human exposure to a substance and the development of cancer.
Carcinogen Category 1B	Substances which should be regarded as if they are carcinogenic to man. There is sufficient evidence to provide a strong presumption that human exposure to a substance may result in the development of cancer. Generally on the basis of : Appropriate long-term animal studies. Other relevant information.
Mutagen Category 1A	Substances known to be mutagenic to man. There is sufficient evidence to establish a causal association between human exposure to a substance and heritable genetic damage.
Mutagen Category 1B	Substances which should be regarded as if they are mutagenic to man. There is sufficient evidence to provide a strong presumption that human exposure to the substance may result in the development of heritable genetic damage, generally on the basis of : <ul style="list-style-type: none"> • Appropriate animal studies. • other relevant information.
PBT & vPvB	Substances which are persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) pose a particular challenge to the chemicals safety management. For these substances a "safe" concentration in the environment cannot be established with sufficient reliability.
EQC (Equivalent concern)	Substances which are those having endocrine disrupting (ED) properties or those having persistent, bioaccumulative and toxic properties or very persistent and very bioaccumulative properties, which do not fulfil the criteria of points PBT & vPvB - for which there is scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern to those of other substances listed in points CC1A, CC1B, MC1A, MC1B, TRC1A, TRC1B, PBT and vPvB and which are identified on a case by case basis in accordance with the procedure set out in Article 59.

Classification	Definition under Regulation (EC) No. 1272/2008 (CLP) Regulation (EC) No. 1907/2006
Toxic to Reproduction	<p>Substances known to impair fertility in humans. There is sufficient evidence to establish a causal relationship between human exposure to the substance and impaired fertility.</p> <p>Substances known to cause developmental toxicity in humans. There is sufficient evidence to establish a causal relationship between human exposure to the substance and subsequent developmental toxic effects in the progeny.</p>
Category 1B	<p>Substances which should be regarded as if they impair fertility in humans. There is sufficient evidence to provide a strong presumption that human exposure to the substance may result in impaired fertility on the basis of :</p> <ul style="list-style-type: none"> • Clear evidence in animal studies of impaired fertility in the absence of toxic effects, or, evidence of impaired fertility occurring at around the same dose levels as other toxic effects but which is not a secondary nonspecific consequence of the other toxic effects. • Other relevant information <p>Substances which should be regarded as if they cause developmental toxicity to humans. There is sufficient evidence to provide a strong presumption that human exposure to the substance may result in developmental toxicity, generally on the basis of :</p> <ul style="list-style-type: none"> • Clear results in appropriate animal studies where effects have been observed in the absence of signs of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not a secondary non-specific consequence of the other toxic effects. • Other relevant information.

Remark:

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article.

9. List of Test Measurement / Equipment

No.	Test Measurement / Equipment	Serial / Inventory Number	Next Calibration
1	ICP Optima	7300DV	June 2017
2	UV Spectrophotometer	A10753401245	November 2016

--- End of Report ---