

Test Report

Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
<http://echa.europa.eu/web/guest/candidate-list-table>
 These lists are under evaluation by ECHA and may subject to change in the future.

2. REACH obligation:

- 2.1 Concerning article(s):

- Communication:

- Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance 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 substance in the Candidate List.

- Notification:

- In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:
<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

- 2.2 Concerning material(s):

- 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. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

- 2.3 Concerning substance and preparation:

- If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
 - a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
 - a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:



**Test Report
(SVHC)**

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 3 of 14

- (a) a substance posing human health or environmental hazards in an individual concentration of 1 % by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or 0.2 % by volume for gaseous mixtures; or
- (b) a substance that is PBT, or vPvB in an individual concentration of 0.1 % by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
- (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of 0.1 % by weight for non-gaseous mixtures; or
- (d) a substance for which there are Europe-wide workplace exposure limits

3. If a SVHC is found over the reporting limit, client is suggested to identify the composite component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample:

Testing Group:

Test Result ID	Description	Test Part ID	SGS Sample ID
001	Colorful silicon wafer	A1	SHA23-0092664-0001.C001

Test Method:

With reference to SGS In-House method, analysis was performed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



Test Report (SVHC)

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 4 of 14

Test Results: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
-	All tested SVHC in Candidate list	-	ND	-

Test Results: (Potential SVHC)

Batch	Substance Name	CAS No.	001 Concentration (%)	RL (%)
/	All tested Potential SVHC	-	ND	-

Notes:

- (1) The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
- (2) RL = Reporting Limit (Test data will be shown if it RL. RL is not regulatory limit.)
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
- (3) * The test result is based on the calculation of selected element(s) and to the worst-case scenario.
** The test result is based on the calculation of selected marker(s) and to the worst-case scenario.
Calculated concentration of boric compounds are based on water extractive boron detected by ICP-OES.
Calculated concentration of Barium diboron tetraoxide is based on water extractive boron and barium detected by ICP-OES.
RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium, cadmium respectively), except molybdenum
RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)), fluorine RL=0.050%.
- (4) § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) 0.1% (w/w).
- (5) / = Potential SVHC

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.



**Test Report
(SVHC)**

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 6 of 14

Batch	No.	Substance Name	CAS No.	RL (%)
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	-	0.005
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-		



**Test Report
(SVHC)**

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 7 of 14

Batch	No.	Substance Name	CAS No.	RL (%)
		ylidene]dimethylammonium chloride (C.I. Basic Violet 3) §		
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	, -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) §	6786-83-0	0.050
VII	84	-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050

Test Report (SVHC)

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 8 of 14

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosafuoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosafuorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	-	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-Dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosafuorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetrolead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosafuorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005



**Test Report
(SVHC)**

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 9 of 14

Batch	No.	Substance Name	CAS No.	RL (%)
X	146	Dihexyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	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	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Trixylyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005
XII	156	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050



Test Report (SVHC)

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 10 of 14

Batch	No.	Substance Name	CAS No.	RL (%)
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	-	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	-	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus" TM) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3	0.050
XVIII	177	Cadmium nitrate*	10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with 0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclotrasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005
XIX	187	Dodecamethylcyclotetrasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine (EDA)	107-15-3	0.050
XIX	189	Lead	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl, hydrogenated	61788-32-7	0.050
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050
XX	194	Benzo[k]fluoranthene	207-08-9	0.050
XX	195	Fluoranthene	206-44-0	0.050
XX	196	Phenanthrene	85-01-8	0.050
XX	197	Pyrene	129-00-0	0.050
XXI	198	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	-	0.050
XXI	199	2-methoxyethyl acetate	110-49-6	0.050
XXI	200	4-tert-butylphenol (PTBP)	98-54-4	0.050



**Test Report
(SVHC)**

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 11 of 14

Batch	No.	Substance Name	CAS No.	RL (%)
XXI	201	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	-	0.050
XXII	202	2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	119313-12-1	



**Test Report
(SVHC)**

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 12 of 14

Batch	No.	Substance Name	CAS No.	RL (%)
		(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate		
XXVI	223	Tris(2-methoxyethoxy)vinylsilane	1067-53-4	0.050
XXVII	224	N-(hydroxymethyl)acrylamide	924-42-5	0.050
XXVIII	225	1,1'-[ethane-1,2-diylbisoxy]bis[2,4,6-tribromobenzene]	37853-59-1	0.050
XXVIII	226	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol	79-94-7	0.050
XXVIII	227	4,4'-sulphonyldiphenol	80-09-1	0.050
XXVIII	228	Barium diboron tetraoxide*	13701-59-2	0.005
XXVIII	229			

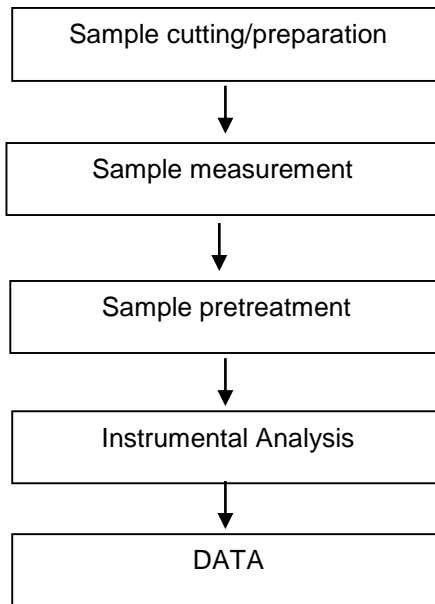


ATTACHMENTS

Testing Flow Chart

Name of the person who made testing: Jo Li/ Winnie Shi

Name of the person in charge of testing: Katie Huang



Test Report (SVHC)

No.: SHAEC23009266409

Date: Jul 11, 2023

Page 14 of 14

Sample photos:



SGS authenticate the photo on original report only

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