

Test Report (SVHC)

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Date : 2013/07/25

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AMAGASAKI FACTORY, KANSAI PLANT, ASAHI GLASS CO., LTD.
2-NISHI-MUKOJIMA-CHO, AMAGASAKI-SHI, HYOGO 660-0857

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

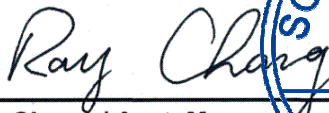
Sample Description : Float Glass Substrate (ELG20130712-1)
JP Reference No. : JP/2013/070799
Sample Receiving Date : 2013/07/19
Testing Period : 2013/07/19 TO 2013/07/25
Sample Submitted By : AMAGASAKI FACTORY, KANSAI PLANT, ASAHI GLASS CO., LTD.

Test Requested : 144 Substances of Very High Concern (SVHC) screening. SVHC candidate list based on the publication by European Chemicals Agency (ECHA) on 2013 June 20, regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Method : Please refer to next page(s).

Test Result(s) : Please refer to next page(s).

Summary : According to the interpretation of ECHA and the majority of EU member states on the definition of an article as well as the specified scope and analytical technique, concentrations of all SVHC are <0.1% in the submitted sample(s).


Ray Chang / Asst. Manager
Signed for and on behalf of
SGS Taiwan Limited



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Test Sample : Transparent Float Glass Substrate (ELG20130712-1)

Test Method : SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES, UV-VIS, GC/MS, LC/MS, GC/FPD, LC/MS/DAD.

Remark:

1. The chemical analysis of 144 SVHC is performed by means of currently available analytical techniques against the list published by ECHA on 2013 June 20.

Refer to: <http://echa.europa.eu/web/guest/candidate-list-table>

2. In accordance with Regulation (EC) No 1907/2006, any producer or importer of articles shall notify ECHA, in accordance with paragraph 2 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 is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) 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 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.
4. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Result(s)

Substance Name	Concentration of Article (%)	RL (%)	Classification
Anthracene (CAS No.: 120-12-7)	n.d.	0.05	PBT
4,4' - Diaminodiphenylmethane (CAS No.: 101-77-9)	n.d.	0.05	CC2
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	n.d.	0.05	TRC2
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	n.d.	0.05	TRC2
Bis (2-ethyl(hexyl)phthalate) (DEHP) (CAS No.: 117-81-7)	n.d.	0.05	TRC2
5-tert-butyl-2,4,6-trinitro- m-xylene (Musk Xylene) (CAS No.: 81-15-2)	n.d.	0.05	vPvB
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α - HBCDD, β - HBCDD, γ - HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	n.d.	0.05	PBT
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No.: 85535-84-8)	n.d.	0.05	PBT
Bis(tributyltin)oxide*** (CAS No.: 56-35-9)	n.d.	-	PBT
Cobalt dichloride (CAS No.: 7646-79-9)	n.d.	0.005	CC2; TRC2

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Substance Name	Concentration of Article (%)	RL (%)	Classification
Diarsenic pentaoxide*** (CAS No.: 1303-28-2)	n.d.	-	CC1
Diarsenic trioxide*** (CAS No.: 1327-53-3)	n.d.	-	CC1
Triethyl arsenate*** (CAS No.: 15606-95-8)	n.d.	-	CC1
Lead hydrogen arsenate*** (CAS No.: 7784-40-9) (※1)	n.d.	-	CC1; TRC1
Sodium chromate*** (CAS No.: 7775-11-3)	n.d.	-	CC2; MC2; TRC2
Ammonium dichromate*** (CAS No.: 7789-09-5)	n.d.	-	CC2; MC2; TRC2
Potassium dichromate*** (CAS No.: 7778-50-9)	n.d.	-	CC2; MC2; TRC2
Potassium chromate*** (CAS No.: 7789-00-6)	n.d.	-	CC2; MC2
Sodium dichromate*** (CAS No.: 10588-01-9, 7789-12-0(*))	n.d.	-	CC2; MC2; TRC2
Chromium trioxide*** (CAS No.: 1333-82-0)	n.d.	-	CC1; MC2
Acids generated from chromium trioxide and their oligomers: Chromic acid*** (CAS No.: 7738-94-5)	n.d.	-	CC2
Acids generated from chromium trioxide and their oligomers: Dichromic acid*** (CAS No.: 13530-68-2)	n.d.	-	CC2
Acids generated from chromium trioxide and their oligomers: Oligomers of chromic acid and dichromic acid (* 1)	n.d.	-	CC2
Strontium chromate*** (CAS No.: 7789-06-2)	n.d.	-	CC2
Anthracene oil (CAS No.: 90640-80-5) (**)	n.d.	0.05	PBT; vPvB; CC2
Anthracene oil, anthracene paste, distn. Lights (CAS No.: 91995-17-4) (**)	n.d.	0.05	PBT; vPvB; CC2; MC2
Anthracene oil, anthracene paste, anthracene fraction (CAS No.: 91995-15-2) (**)	n.d.	0.05	PBT; vPvB; CC2; MC2
Anthracene oil, anthracene-low (CAS No.: 90640-82-7) (**)	n.d.	0.05	PBT; vPvB; CC2; MC2
Anthracene oil, anthracene paste (CAS No.: 90640-81-6) (**)	n.d.	0.05	PBT; vPvB; CC2; MC2
Pitch, coal tar, high-temp. (CAS No.: 65996-93-2) (**)	n.d.	0.05	PBT; vPvB; CC2
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	n.d.	0.05	TRC2
2,4-Dinitrotoluene (CAS No.: 121-14-2)	n.d.	0.05	CC2
Tris(2-chloroethyl) phosphate (TCEP) (CAS No.: 115-96-8)	n.d.	0.05	TRC2
Lead chromate (CAS No.: 7758-97-6)	n.d.	0.01	CC2; TRC1
Lead chromate molybdate sulphate red (C.I. Pigment Red 104) (CAS No.: 12656-85-8)	n.d.	0.01	CC2; TRC1
Lead sulfochromate yellow (C.I. Pigment Yellow 34) (CAS No.: 1344-37-2)	n.d.	0.01	CC2; TRC1

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Substance Name	Concentration of Article (%)	RL (%)	Classification
Acrylamide (CAS No.: 79-06-1)	n.d.	0.05	CC2; MC2
Boric acid*** (CAS No.: 10043-35-3; 11113-50-1)	n.d.	-	TRC2
Disodium tetraborate, anhydrous*** (CAS No.: 1303-96-4, 1330-43-4, 12179-04-3)	n.d.	-	TRC2
Tetraboron disodium heptaoxide, hydrate (CAS No.: 12267-73-1) (*2)	n.d.	-	TRC2
Trichloroethylene (CAS No.: 79-01-6)	n.d.	0.05	CC2
Cobalt(II) sulphate*** (CAS No.: 10124-43-3)	n.d.	-	CC2; TRC2
Cobalt(II) dinitrate*** (CAS No.: 10141-05-6)	n.d.	-	CC2; TRC2
Cobalt(II) carbonate*** (CAS No.: 513-79-1)	n.d.	-	CC2; TRC2
Cobalt(II) diacetate*** (CAS No.: 71-48-7)	n.d.	-	CC2; TRC2
2-Methoxyethanol (CAS No.: 109-86-4)	n.d.	0.05	TRC2
2-Ethoxyethanol (CAS No.: 110-80-5)	n.d.	0.05	TRC2
2-ethoxyethyl acetate (CAS No.: 111-15-9)	n.d.	0.05	TRC2
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (CAS No.: 68515-42-4)	n.d.	0.05	TRC2
Hydrazine (CAS No.: 7803-57-8; 302-01-2)	n.d.	0.05	CC2
1-methyl-2-pyrrolidone (CAS No.: 872-50-4)	n.d.	0.05	TRC2
1,2,3-trichloropropane (CAS No.: 96-18-4)	n.d.	0.05	CC2; TRC2
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (CAS No.: 71888-89-6)	n.d.	0.05	TRC2
Arsenic acid*** (CAS No.: 7778-39-4)	n.d.	-	CC1
Calcium arsenate*** (CAS No.: 7778-44-1)	n.d.	-	CC1
Trilead diarsenate*** (CAS No.: 3687-31-8) (*1)	n.d.	-	CC1; TRC1
Lead diazide, Lead azide*** (CAS No.: 13424-46-9)	n.d.	-	TRC1
Lead styphnate*** (CAS No.: 15245-44-0)	n.d.	-	TRC1
Lead dipicrate*** (CAS No.: 6477-64-1)	n.d.	-	TRC1
Dichromium tris (chromate)*** (CAS No.: 24613-89-6)	n.d.	-	CC2
Potassium hydroxyoctaoxodizincatedi- chromate*** (CAS No.: 11103-86-9)	n.d.	-	CC1
Pentazinc chromate octahydroxide*** (CAS No.: 49663-84-5)	n.d.	-	CC1
Formaldehyde, oligomeric reaction products with aniline (technical MDA) (CAS No.: 25214-70-4)	n.d.	0.05	CC2

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Substance Name	Concentration of Article (%)	RL (%)	Classification
Bis(2-methoxyethyl) phthalate (CAS No.: 117-82-8)	n.d.	0.05	TRC2
2-Methoxyaniline; o-Anisidine (CAS No.: 90-04-0)	n.d.	0.05	CC2
4-(1,1,3,3-tetramethylbutyl) phenol, (4-tert-Octylphenol) (CAS No.: 140-66-9)	n.d.	0.05	Equivalent concern
1,2-Dichloroethane (CAS No.: 107-06-2)	n.d.	0.05	CC2
Bis(2-methoxyethyl) ether (CAS No.: 111-96-6)	n.d.	0.05	TRC2
N,N-dimethylacetamide (DMAC) (CAS No.: 127-19-5)	n.d.	0.05	TRC2
2,2'-dichloro- 4,4'-methylenedianiline (MOCA) (CAS No.: 101-14-4)	n.d.	0.05	CC2
Phenolphthalein (CAS No.: 77-09-8)	n.d.	0.05	CC2
Aluminosilicate, Refractory Ceramic Fibres 【oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges】	n.d.	0.05	CC2
Zirconia Aluminosilicate, Refractory Ceramic Fibres 【oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges】	n.d.	0.05	CC2
1,2-bis (2-methoxyethoxy) ethane (TEGDME; triglyme) (CAS No.: 112-49-2)	n.d.	0.05	TRC2
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) (CAS No.: 110-71-4)	n.d.	0.05	TRC2
Formamide (CAS No.: 75-12-7)	n.d.	0.05	TRC2
Lead(II) bis(methanesulfonate)*** (CAS No.: 17570-76-2)	n.d.	-	TRC2
TGIC (1,3,5-tris(oxiranylmethyl)- 1,3,5-triazine-2,4,6 (1H,3H,5H)-trione) (CAS No.: 2451-62-9)	n.d.	0.05	MC2
β-TGIC (1,3,5-tris [(2S and 2R)-2,3-epoxypropyl]- 1,3,5-triazine-2,4,6-(1H,3H,5H)-trione) (CAS No.: 59653-74-6) (※3)	n.d.	0.05	MC2
4,4'-bis (dimethylamino) benzophenone (Michler's ketone) (CAS No.: 90-94-8)	n.d.	0.05	CC2
N,N,N',N'-tetramethyl- 4,4'-methylenedianiline (Michler's base) (CAS No.: 101-61-1)	n.d.	0.05	CC2
[4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Violet 3) (CAS No.: 548-62-9) [with ≥ 0.1% of Michler's ketone or Michler's base]	n.d.	0.05	CC2

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Substance Name	Concentration of Article (%)	RL (%)	Classification
[4-[[4-anilino-1-naphthyl] [4-(dimethylamino) phenyl] methylene] cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) (CAS No.: 2580-56-5) [with ≥ 0.1% of Michler's ketone or Michler's base]	n.d.	0.05	CC2
α,α-Bis[4-(dimethylamino) phenyl]-4 (phenylamino) naphthalene-1-methanol (C.I. Solvent Blue 4) (CAS No.: 6786-83-0) [with ≥ 0.1% of Michler's ketone or Michler's base]	n.d.	0.05	CC2
Diboron trioxide*** (CAS No.: 1303-86-2)	n.d.	-	TRC2
4,4'-bis (dimethylamino)-4''-(methylamino) trityl alcohol (CAS No.: 561-41-1) [with ≥ 0.1% of Michler's ketone or Michler's base]	n.d.	0.05	CC2
Bis(pentabromophenyl) ether (DecaBDE) (CAS No.: 1163-19-5)	n.d.	0.05	PBT
Pentacosafuorotridecanoic acid (CAS No.: 72629-94-8)	n.d.	0.05	PBT
Tricosafuorododecanoic acid (CAS No.: 307-55-1)	n.d.	0.05	PBT
Henicosafuoroundecanoic acid (CAS No.: 2058-94-8)	n.d.	0.05	PBT
Heptacosafuorotetradecanoic acid (CAS No.: 376-06-7)	n.d.	0.05	PBT
4-(1,1,3,3-tetramethylbutyl) phenol, ethoxylated- covering well-defined substances and UVCB substances, polymers and homologues	n.d.	0.05	Equivalent concern
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	n.d.	0.05	Equivalent concern
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (CAS No.: 123-77-3)	n.d.	0.05	Equivalent concern
Cyclohexane-1,2-dicarboxylic anhydride (HHPA), cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2- dicarboxylic anhydride (Hexahydrophthalic anhydride - HHPA) (CAS No.: 85-42-7, 13149-00-3, 14166-21-3)	n.d.	0.05	Equivalent concern
Hexahydromethylphthalic anhydride (CAS No.: 25550-51-0) Hexahydro-4-methylphthalic anhydride (CAS No.: 19438-60-9) Hexahydro-1-methylphthalic anhydride (CAS No.: 48122-14-1) Hexahydro-3-methylphthalic anhydride (CAS No.: 57110-29-9)	n.d.	0.05	Equivalent concern

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Substance Name	Concentration of Article (%)	RL (%)	Classification
Methoxy acetic acid (CAS No.: 625-45-6)	n.d.	0.05	TRC2
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (CAS No.: 84777-06-0)	n.d.	0.05	TRC2
Diisopentylphthalate (CAS No.: 605-50-5)	n.d.	0.05	TRC2
N-pentyl-isopentylphthalate (CAS No.: 776297-69-9)	n.d.	0.05	TRC2
1,2-Diethoxyethane (CAS No.: 629-14-1)	n.d.	0.05	TRC2
N,N-dimethylformamide; dimethyl formamide (CAS No.: 68-12-2)	n.d.	0.05	TRC2
Dibutyltin dichloride (DBTC) (CAS No.: 683-18-1)	n.d.	0.05	TRC2
Acetic acid, lead salt, basic*** (CAS No.: 51404-69-4)	n.d.	-	TRC1
Trilead bis(carbonate) dihydroxide (basic lead carbonate)*** (CAS No.: 1319-46-6)	n.d.	-	TRC1
Lead oxide sulfate*** (CAS No.: 12036-76-9)	n.d.	-	TRC1
[Phthalato(2-)] dioxotrilead*** (CAS No.: 69011-06-9)	n.d.	-	TRC1
Dioxobis(stearato) trilead*** (CAS No.: 12578-12-0)	n.d.	-	TRC1
Fatty acids, C16-18, lead salts*** (CAS No.: 91031-62-8)	n.d.	-	TRC1
Lead cyanamidate*** (CAS No.: 20837-86-9)	n.d.	-	TRC1
Lead dinitrate*** (CAS No.: 10099-74-8)	n.d.	-	TRC1
Lead oxide (lead monoxide)*** (CAS No.: 1317-36-8)	n.d.	-	TRC1
Lead tetroxide (orange lead)*** (CAS No.: 1314-41-6)	n.d.	-	TRC1
Pentalead tetraoxide sulphate*** (CAS No.: 12065-90-6)	n.d.	-	TRC1
Silicic acid, lead salt*** (CAS No.: 11120-22-2)	n.d.	-	TRC1
Sulfurous acid, lead salt, dibasic*** (CAS No.: 62229-08-7)	n.d.	-	TRC1
Tetraethyllead*** (CAS No.: 78-00-2)	n.d.	-	TRC1
Tetralead trioxide sulphate*** (CAS No.: 12202-17-4)	n.d.	-	TRC1
Lead bis(tetrafluoroborate)*** (CAS No.: 13814-96-5)	n.d.	-	TRC1
Lead titanium trioxide*** (CAS No.: 12060-00-3)	n.d.	-	TRC1
Lead Titanium Zirconium Oxide*** (CAS No.: 12626-81-2)	n.d.	-	TRC1
Pyrochlore, antimony lead yellow*** (CAS No.: 8012-00-8)	n.d.	-	TRC1
Trilead dioxide phosphonate*** (CAS No.: 12141-20-7)	n.d.	-	TRC1
Silicic acid, barium salt, lead-doped*** (CAS No.: 68784-75-8)	n.d.	-	TRC1
Furan (CAS No.: 110-00-9)	n.d.	0.05	CC2
Propylene oxide; 1,2-epoxypropane; methyloxirane (CAS No.: 75-56-9)	n.d.	0.05	CC2; MC2

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Substance Name	Concentration of Article (%)	RL (%)	Classification
Diethyl sulphate (CAS No.: 64-67-5)	n.d.	0.05	CC2; MC2
Dimethyl sulphate (CAS No.: 77-78-1)	n.d.	0.05	CC2
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine (CAS No.: 143860-04-2)	n.d.	0.05	TRC2
Dinoseb (CAS No.: 88-85-7)	n.d.	0.05	TRC2
4,4'-methylenedi-o-toluidine (CAS No.: 838-88-0)	n.d.	0.05	CC2
4,4'-oxydianiline and its salts (CAS No.: 101-80-4)	n.d.	0.05	CC2; MC2
4-Aminoazobenzene; 4-Phenylazoaniline (CAS No.: 60-09-3)	n.d.	0.05	CC2
4-methyl-m-phenylenediamine (2,4-toluenediamine) (CAS No.: 95-80-7)	n.d.	0.05	CC2
6-methoxy-m-toluidine (p-cresidine) (CAS No.: 120-71-8)	n.d.	0.05	CC2
Biphenyl-4-ylamine (CAS No.: 92-67-1)	n.d.	0.05	CC1
o-aminoazotoluene (CAS No.: 97-56-3)	n.d.	0.05	CC2
o-Toluidine; 2-Aminotoluene (CAS No.: 95-53-4)	n.d.	0.05	CC2
N-methylacetamide (CAS No.: 79-16-3)	n.d.	0.05	TRC2
1-bromopropane (CAS No.: 106-94-5)	n.d.	0.05	TRC2
Pentadecafluorooctanoic acid (PFOA) (CAS No.: 335-67-1)	n.d.	0.05	TRC 1B & PBT
Ammoniumpentadecafluorootanoate (APFO)*** (CAS No.: 3825-26-1)	n.d.	0.05	TRC 1B & PBT
Cadmium (Cd) (CAS No.: 7440-43-9)	n.d.	0.005	CC 1B & EQC
Cadmium oxide*** (CAS No.: 1306-19-0)	n.d.	-	CC 1B & EQC
DPP (Di-pentyl phthalate) (CAS No.: 131-18-0)	n.d.	0.05	TRC 1B
4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]	n.d.	0.05	EQC

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Note :

1. mg/kg = ppm; 0.1wt% = 1000ppm
2. n.d.= not detected = below Reporting Limit
3. RL = Reporting Limit
4. (*): conc. of Sodium dichromate dihydrate (CAS No.: 7789-12-0) = conc. of sodium dichromate $\times$ 1.1374
5. (**): The concentrations of above-mentioned mixtures are evaluated per the gained composition rate between the selected marks and the mixtures.
6. (*1): Oligomers of chromic acid and dichromic acid : since the oligomers are made of the 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.
7. (*2): Tetraboron disodium heptaoxide, hydrate: Only anhydrous form of disodium tetraborate is relevant and considered according to ECHA explanation (Ref no.: INC 000000032519).
8. ***: The substance was calculated by the test results of Tributyl Tin, PFOA or element (Ex. Arsenic, Lead, Cr(VI), Boron, Cobalt, Barium, Cadmium respectively).

The test result is given as:

Substance Name	Concentration of Article (%)	RL (%)
Tributyl Tin (TBT)	n.d.	0.05
Arsenic (As) (※2)	n.d.	0.005
Lead (Pb)	n.d.	0.005
Hexavalent Chromium Cr(VI)	n.d.	0.005
Boron (B) (※2)	n.d.	0.005
Cobalt (Co)	n.d.	0.005

9. (※1): 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.
10. " - " = Not Regulated
11. F Parameter Conversion Table : Please refer to http://twap.sgs.com/V3attachment/News/N_20130415_1.pdf
12. Classification : Please refer to http://twap.sgs.com/V3attachment/News/N_20130415_2.pdf
13. (※2): The extracted soluble Boron / Arsenic are detected by ICP-AES.
14. (※3): 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.

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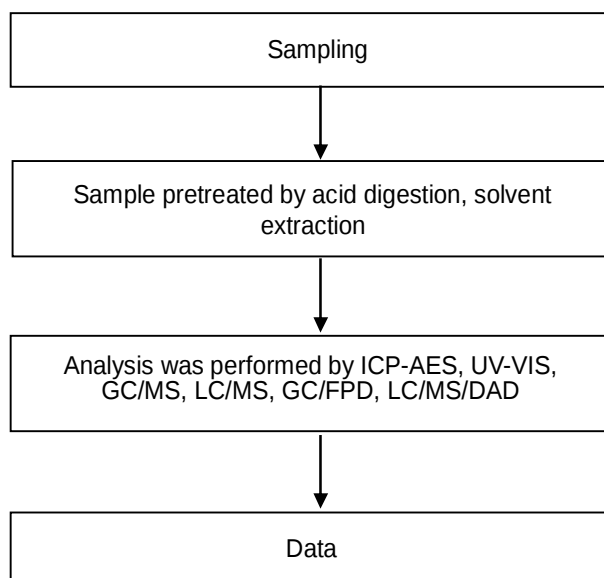
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Analytical flow chart of SVHC

- Name of the person who made measurement: Alex Chang/Anson Tsao
- Name of the person in charge of measurement: Ray Chang



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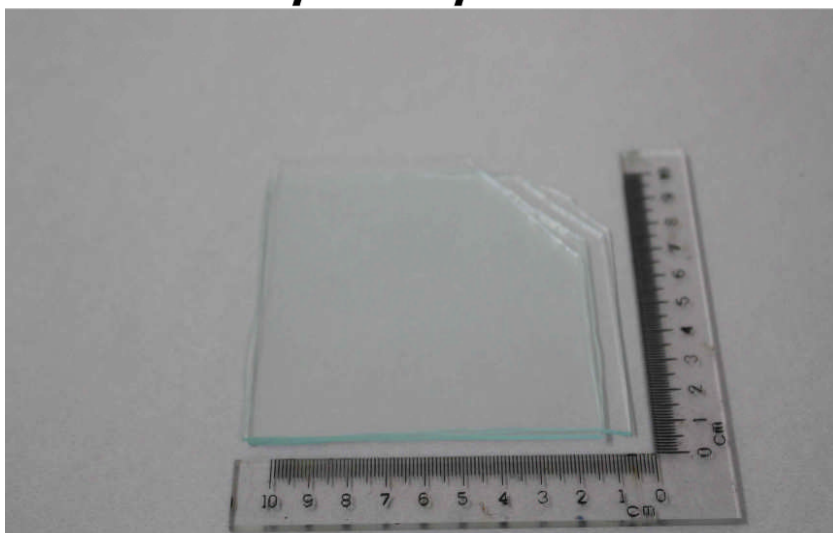
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*** The tested sample / part is marked by an arrow if it's shown on the photo. ***

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**** End of Report ****

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