

SVHC Assessment Report

Number : TWNC00422999

Applicant: Formosa Plastics Corporation
Technical department plastics division
100,Suei-Guan Road,Jen-Wu Hsiang,
Kaohsiung County

Date : Mar 19, 2015

Sample Description:

One (1) group of submitted samples said to be :

Sample Description : M-HT

Date Sample Received : Feb 05, 2015

Date Test Started : Feb 05, 2015

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

Summary:

According to the client's request, screening test was conducted for the **161** Substances of Very High Concern (SVHC) in the Candidate List promulgated by the European Chemicals Agency (ECHA). The criterion defined in Article 33 of the REACH regulation for providing information on the safe use of substances in articles is less than 0.1% (w/w). For the submitted sample, the test results show the SVHC are less than 0.1% (w/w).

The thresholds and substances of SVHC are defined in Article 7 and 57 of Regulation (EC) No 1907/2006 (REACH Regulation).

According to the REACH regulation, the Candidate List of SVHC is proposed and evaluated by European Chemicals Agency (ECHA) and may be subject to change in the future. As of Dec 17, 2014, there are total of **161** SVHC in this list. The applicant should be ready to note the latest list.

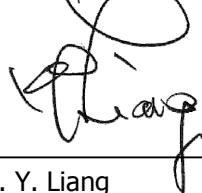
Please refer to the following link for further details:

http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

Authorized by:

On Behalf of Intertek Testing Services

Taiwan Limited



K. Y. Liang
Director



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Summary of SVHC:

The information about REACH regulation below is quoted from the ECHA. The applicant should find this information relevant.

Further detail can be found at the following links:

- <http://echa.europa.eu/regulations/reach/authorisation>
- http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

1. Substances of Very High Concern (SVHC) are classified as:

- a. carcinogenic, mutagenic or toxic to reproduction (CMR) classified in category 1 or 2,
- b. PBT (PBT) or vPvB (vPvB) according to the criteria in Annex XIII of the REACH Regulation, and/or
- c. Identified, on a case-by-case basis, from scientific evidence as causing probable serious effects to humans or the environment of an equivalent level of concern as those above e.g. endocrine disrupters

2. Legal obligations

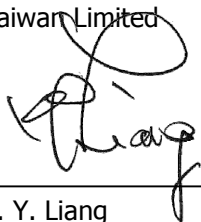
- a. EU and EEA producers and importers of articles have a legal obligation to submit a notification to ECHA with regard to any substance on the Candidate List in their articles, if both the following conditions are met:
 - the substance is present in their relevant articles above a concentration of 0,1% weight by weight, and
 - the substance is present in their relevant articles in quantities totalling over 1 tonne per year.
- b. EU and EEA suppliers of articles which contain substances on the Candidate List in a concentration above 0.1% (w/w) have to provide sufficient information to allow safe use of the article to their customers or upon request, to a consumer within 45 days of the receipt of the request. This information must contain as a minimum the name of the substance.

Disclaimers:

This assessment report for Substances of Very High Concern (SVHC) in the Candidate List promulgated by European Chemicals Agency (ECHA) is for reference purposes only. The applicant shall make their own judgment as to whether the information provided in assessment report is sufficient for their purposes.

The screening results shown in this assessment report will be in relation to various factors, including but not limited to, the weight or size of dismantled component and composite test approach, etc. If the contents of SVHC are out of the threshold, further identification is recommended to obtain the information of SVHC in each material.

Authorized by:
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Taiwan Limited



K. Y. Liang
Director



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Test Conducted

Test Method:

By Intertek in-house method

1. Acid digestion or aqueous extraction methods were used and the relevant elements were determined by ICP-OES.
 2. Further confirmation tests were performed by UV-Vis (non-metal part) or spot test (metal part) for Cr⁶⁺ and by ED-XRF or SEM-EDX for ceramic fiber after decomposition if necessary.
 3. Solvent extraction method was used for semi-volatile and non-volatile organic compounds and the relevant compounds were determined by GC-MS, GC-ECD, HPLC-DAD or LC-MS-MS.
 4. Volatile organic compounds were determined by GC-MS linked with Headspace.
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Test Conducted

Test Result Summary:

Compound	Result (ppm)
	White powder
Cobalt dichloride	ND
Diarsenic pentaoxide	ND
Diarsenic trioxide	ND
Lead hydrogen arsenate	ND
Triethyl arsenate	ND
Sodium dichromate, dihydrate	ND
Bis (tributyltin) oxide (TBTO)	ND
Anthracene	ND
4,4'-diaminodiphenylmethane (MDA)	ND
Dibutyl phthalate (DBP)	ND
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	ND
Bis (2-ethylhexyl) phthalate (DEHP)	ND
Hexabromocyclododecane (HBCDD)	ND
Benzyl butyl phthalate (BBP)	ND
Short chain chlorinated parafins (C10-13)	ND
Anthracene oil	ND
Anthracene oil, anthracene paste, distn. Lights	ND
Anthracene oil, anthracene paste, anthracene	ND
Anthracene oil, anthracene-low	ND
Anthracene oil, anthracene paste	ND
Coal tar pitch, high temp.	ND
Acrylamide	ND
2,4-dinitrotoluene	ND
Diisobutyl Phthalate (DIBP)	ND
Lead chromate	ND
Lead chromate molybdate sulphate red (C.I. pigment red 104)	ND
Lead sulfochromate yellow (C.I. pigment yellow 34)	ND
Tris(2-chloroethyl)phosphate (TCEP)	ND
Trichloroethylene	ND
Boric acid	ND
Disodium tetraborate, anhydrous	ND
Tetraboron disodium heptaoxide, hydrate	ND
Sodium chromate	ND
Potassium chromate	ND
Ammonium dichromate	ND
Potassium dichromate	ND
Cobalt(II) sulphate	ND
Cobalt(II) dinitrate	ND
Cobalt(II) carbonate	ND
Cobalt(II) diacetate	ND



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Compound	Result (ppm)
	White powder
2-methoxyethanol	ND
2-ethoxyethanol	ND
Chromium trioxide	ND
Acids generated from chromium trioxide and their oligomers : Chromic acid Dichromic acid Oligomers of chromic acid and dichromic acid	ND
2-ethoxyethyl acetate (2-EEA)	ND
Strontium chromate	ND
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	ND
Hydrazine	ND
1-methyl-2-pyrrolidone (NMP)	ND
1,2,3-trichloropropane	ND
1,2-Benzenedicarboxylic acid, di-c6-8-branched alkyl esters, c7-rich (DIHP)	ND
Dichromium tris(chromate)	ND
Potassium hydroxyoctaoxodizincatedichromate	ND
Pentazinc chromate octahydroxide	ND
Formaldehyde, oligomeric reaction products with aniline (technical MDA)	ND
Aluminosilicate refractory ceramic fibres (RCF)**	ND
Zirconia aluminosilicate refractory ceramic fibres (Zr-RCF)**	ND
Bis(2-methoxyethyl) phthalate(DMEP)	ND
2-Methoxyaniline(o-anisidine)	ND
4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-octylphenol)	ND
1,2-dichloroethane	ND
Bis(2-methoxyethyl) ether	ND
Arsenic acid	ND
Calcium arsenate	ND
Trilead diarsenate	ND
N,n-dimethylacetamide (DMAC)	ND
2,2'-dichloro-4,4'-methylenedianiline (MOCA)	ND
Phenolphthalein	ND
Lead azide (lead diazide)	ND
Lead styphnate	ND
Lead dipicrate	ND
1,2-bis(2-methoxyethoxy)ethane (TEGDME; Triglyme)	ND
1,2-Dimethoxyethane; Ethylene Glycol Dimethyl ether (EGDME)	ND
Diboron trioxide	ND
Formamide	ND



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Compound	Result (ppm)
	White powder
Lead(II) bis(methanesulfonate)	ND
1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (TGIC)	ND
1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)	ND
4,4'-bis(dimethylamino)benzophenone (michler's ketone)	ND
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (michler's base)	ND
[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	ND
[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa -2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	ND
4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	ND
α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino) naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	ND
Bis(pentabromophenyl) ether (DecaBDE)	ND
Pentacosafuorotridecanoic acid	ND
Tricosafuorododecanoic acid	ND
Henicosafuoroundecanoic acid	ND
Heptacosafuorotetradecanoic acid	ND
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated - covering well-defined substances and UVCB substances, polymers and homologues	ND
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
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	ND
Cyclohexane-1,2-dicarboxylic anhydride (Hexahydrophthalic anhydride – HHPA)	ND
Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	ND
Methoxy acetic acid	ND
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (PIPP)	ND



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Compound	Result (ppm)
	White powder
Diisopentylphthalate (DIPP)	ND
N-pentyl-isopentylphthalate (PIPP)	ND
1,2-Diethoxyethane	ND
N,N-dimethylformamide; dimethyl formamide (DMFA)	ND
Dibutyltin dichloride (DBT)	ND
Acetic acid, lead salt, basic	ND
Basic lead carbonate (trilead bis(carbonate) dihydroxide)	ND
Lead oxide sulfate (basic lead sulfate)	ND
[Phthalato(2-)]dioxotrilead (dibasic lead phthalate)	ND
Dioxobis(stearato)trilead	ND
Fatty acids, C16-18, lead salts	ND
Lead bis(tetrafluoroborate)	ND
Lead cyanamate	ND
Lead dinitrate	ND
Lead oxide (lead monoxide)	ND
Lead tetroxide (orange lead)	ND
Lead titanium trioxide	ND
Lead Titanium Zirconium Oxide	ND
Pentalead tetraoxide sulphate	ND
Pyrochlore, antimony lead yellow	ND
Silicic acid, barium salt, lead-doped	ND
Silicic acid, lead salt	ND
Sulfurous acid, lead salt, dibasic	ND
Tetraethyllead	ND
Tetralead trioxide sulphate	ND
Trilead dioxide phosphonate	ND
Furan	ND
Propylene oxide; 1,2-epoxypropane; methyloxirane	ND
Diethyl sulphate	ND
Dimethyl sulphate	ND
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	ND
Dinoseb	ND
4,4'-methylenedi-o-toluidine	ND
4,4'-oxydianiline and its salts	ND
4-Aminoazobenzene; 4-Phenylazoaniline	ND
4-methyl-m-phenylenediamine (2,4-toluene-diamine)	ND
6-methoxy-m-toluidine (p-cresidine)	ND
Biphenyl-4-ylamine ; 4-Aminobiphenyl	ND
o-aminoazotoluene	ND
o-Toluidine; 2-Aminotoluene	ND
N-methylacetamide	ND
1-bromopropane; n-propyl bromide	ND



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Compound	Result (ppm)
	White powder
Cadmium	ND
Cadmium oxide	ND
Ammoniumpentadecafluorooctanoate (APFO)	ND
Pentadecafluorooctanoic acid (PFOA)	ND
Dipentyl phthalate (DPP)	ND
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]	ND
Cadmium sulphide	ND
Lead di(acetate)	ND
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)	ND
Disodium 3,3'-[[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	ND
Triethyl phosphate	ND
Diethyl phthalate (DnHP)	ND
Imidazolidine-2-thione; 2-imidazoline-2-thiol	ND
1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	ND
Cadmium chloride	ND
Sodium perborate; perboric acid, sodium salt	ND
Sodium peroxometaborate	ND
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	ND
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	ND
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	ND
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
Cadmium fluoride	ND
Cadmium sulphate	ND

Remarks: ppm = Parts per million = mg/kg
 ND = Not detected
 Detection Limit = 100 ppm (for each compound)
 ** = The Dec 19, 2011 'Aluminosilicate Refractory Ceramic Fibres' and 'Zirconia Aluminosilicate Refractory Ceramic Fibres' listings open the scope of these items from the original listing (Jan 1, 2010). Although these two modified substances are counted as additions to the existing list, they are revisions of the original substance listings to ensure all hazardous versions are covered. As of Jun 18, 2012, these entries have been consolidated; there is now one entry for 'Aluminosilicate Refractory Ceramic Fibres' and one entry for 'Zirconia Aluminosilicate Refractory Ceramic Fibres'.



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Test Conducted

Classification:

Substance Name	EC Number	CAS Number	Reason for Inclusion
Cobalt dichloride	231-589-4	7646-79-9	Carcinogenic Mutagenic
Diarsenic pentaoxide	215-116-9	1303-28-2	Carcinogenic
Diarsenic trioxide	215-481-4	1327-53-3	Carcinogenic
Lead hydrogen arsenate	232-064-2	7784-40-9	Carcinogenic TRC
Triethyl arsenate	427-700-2	15606-95-8	Carcinogenic
Sodium dichromate, dihydrate	234-190-3	7789-12-0	Carcinogenic Mutagenic TRC
Bis (tributyltin) oxide (TBTO)	200-268-0	56-35-9	PBT
Anthracene	204-371-1	120-12-7	PBT
4,4'-diaminodiphenylmethane (MDA)	202-974-4	101-77-9	Carcinogenic
Dibutyl phthalate (DBP)	201-557-4	84-74-2	TRC
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	201-329-4	81-15-2	vPvB
Bis (2-ethylhexyl) phthalate (DEHP)	204-211-0	117-81-7	Carcinogenic Equivalent Concern
Hexabromocyclododecane (HBCDD)	247-148-4 221-695-9	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	PBT
Benzyl butyl phthalate (BBP)	201-622-7	85-68-7	TRC
Short chain chlorinated parafins (C10-13)	287-476-5	85535-84-8	PBT
Anthracene oil	292-602-7	90640-80-5	PBT, vPvB
Anthracene oil, anthracene paste, distn. Lights	295-278-5	91995-17-4	PBT, vPvB, Carcinogenic Mutagenic
Anthracene oil, anthracene paste, anthracene fraction	295-275-9	91995-15-2	PBT, vPvB, Carcinogenic Mutagenic
Anthracene oil, anthracene-low	292-604-8	90640-82-7	PBT, vPvB, Carcinogenic Mutagenic
Anthracene oil, anthracene paste	292-603-2	90640-81-6	PBT, vPvB, Carcinogenic Mutagenic
Coal tar pitch, high temp.	266-028-2	65996-93-2	PBT, vPvB, Carcinogenic
Acrylamide	201-173-7	79-06-1	Carcinogenic Mutagenic
2,4-dinitrotoluene	204-450-0	121-14-2	Carcinogenic
Diisobutyl Phthalate (DIBP)	201-553-2	84-69-5	TRC



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Substance Name	EC Number	CAS Number	Reason for Inclusion
Lead chromate	231-846-0	7758-97-6	Carcinogenic TRC
Lead chromate molybdate sulphate red (C.I. pigment red 104)	235-759-9	12656-85-8	Carcinogenic TRC
Lead sulfochromate yellow (C.I. pigment yellow 34)	215-693-7	1344-37-2	Carcinogenic TRC
Tris(2-chloroethyl)phosphate (TCEP)	204-118-5	115-96-8	TRC
Trichloroethylene	201-167-4	79-01-6	Carcinogenic
Boric acid	233-139-2 234-343-4	10043-35-3 11113-50-1	TRC
Disodium tetraborate, anhydrous	215-540-4	1330-43-4 12179-04-3 1303-96-4	TRC
Tetraboron disodium heptaoxide, hydrate	235-541-3	12267-73-1	TRC
Sodium chromate	231-889-5	7775-11-3	Carcinogenic Mutagenic TRC
Potassium chromate	232-140-5	7789-00-6	Carcinogenic Mutagenic
Ammonium dichromate	232-143-1	7789-09-5	Carcinogenic Mutagenic TRC
Potassium dichromate	231-906-6	7778-50-9	Carcinogenic Mutagenic TRC
Cobalt(II) sulphate	233-334-2	10124-43-3	Carcinogenic TRC
Cobalt(II) dinitrate	233-402-1	10141-05-6	Carcinogenic TRC
Cobalt(II) carbonate	208-169-4	513-79-1	Carcinogenic TRC
Cobalt(II) diacetate	200-755-8	71-48-7	Carcinogenic TRC
2-methoxyethanol	203-713-7	109-86-4	TRC
2-ethoxyethanol	203-804-1	110-80-5	TRC
Chromium trioxide	215-607-8	1333-82-0	Carcinogenic Mutagenic
Acids generated from chromium trioxide and their oligomers : Chromic acid Dichromic acid Oligomers of chromic acid and dichromic acid	231-805-5 236-881-5 --	7738-94-5 13530-68-2 --	Carcinogenic
2-ethoxyethyl acetate (2-EEA)	203-839-2	111-15-9	TRC
Strontium chromate	232-142-6	7789-06-2	Carcinogenic
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	271-084-6	68515-42-4	TRC
Hydrazine	206-114-9	7803-57-8 302-01-2	Carcinogenic



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Substance Name	EC Number	CAS Number	Reason for Inclusion
1-methyl-2-pyrrolidone (NMP)	212-828-1	872-50-4	TRC
1,2,3-trichloropropane	202-486-1	96-18-4	Carcinogenic TRC
1,2-Benzenedicarboxylic acid, di-c6-8-branched alkyl esters, c7-rich (DIHP)	276-158-1	71888-89-6	TRC
Dichromium tris(chromate)	246-356-2	24613-89-6	Carcinogenic
Potassium hydroxyoctaoxodizincatedichromate	234-329-8	11103-86-9	Carcinogenic
Pentazinc chromate octahydroxide (C.I. pigment yellow 36)	256-418-0	49663-84-5	Carcinogenic
Formaldehyde, oligomeric reaction products with aniline (technical MDA)	500-036-1	25214-70-4	Carcinogenic
Aluminosilicate refractory ceramic fibres (RCF)	--	--	Carcinogenic
Zirconia aluminosilicate refractory ceramic fibres (Zr-RCF)	--	--	Carcinogenic
Bis(2-methoxyethyl) phthalate(DMEP)	204-212-6	117-82-8	TRC
2-Methoxyaniline(o-anisidine)	201-963-1	90-04-0	Carcinogenic
4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-octylphenol)	205-426-2	140-66-9	PBT, vPvB
1,2-dichloroethane	203-458-1	107-06-2	Carcinogenic
Bis(2-methoxyethyl) ether	203-924-4	111-96-6	TRC
Arsenic acid	231-901-9	7778-39-4	Carcinogenic
Calcium arsenate	231-904-5	7778-44-1	Carcinogenic
Trilead diarsenate	222-979-5	3687-31-8	Carcinogenic TRC
N,N-dimethylacetamide (DMAC)	204-826-4	127-19-5	TRC
2,2'-dichloro-4,4'-methylenedianiline (MOCA)	202-918-9	101-14-4	Carcinogenic
Phenolphthalein	201-004-7	77-09-8	Carcinogenic
Lead azide (lead diazide)	236-542-1	13424-46-9	TRC
Lead styphnate	239-290-0	15245-44-0	TRC
Lead dipicrate	229-335-2	6477-64-1	TRC
1,2-bis(2-methoxyethoxy)ethane (TEGDME; Triglyme)	203-977-3	112-49-2	TRC
1,2-Dimethoxyethane; Ethylene Glycol Dimethyl ether(EGDME)	203-794-9	110-71-4	TRC
Diboron trioxide	215-125-8	1303-86-2	TRC
Formamide	200-842-0	75-12-7	TRC
Lead(II) bis(methanesulfonate)	401-750-5	17570-76-2	TRC
1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (TGIC)	219-514-3	2451-62-9	Mutagenic
1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)	423-400-0	59653-74-6	Mutagenic
4,4'-bis(dimethylamino)benzophenone (michler's ketone)	202-027-5	90-94-8	Carcinogenic
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (michler's base)	202-959-2	101-61-1	Carcinogenic
[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl] methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	219-943-6	2580-56-5	Carcinogenic



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Substance Name	EC Number	CAS Number	Reason for Inclusion
[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)]	208-953-6	548-62-9	Carcinogenic
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)]	209-218-2	561-41-1	Carcinogenic
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)]	229-851-8	6786-83-0	Carcinogenic
Bis(pentabromophenyl) ether (DecaBDE)	214-604-9	1163-19-5	PBT, vPvB
Pentacosafuorotridecanoic acid	276-745-2	72629-94-8	vPvB
Tricosafuorododecanoic acid	206-203-2	307-55-1	vPvB
Henicosafuoroundecanoic acid	218-165-4	2058-94-8	vPvB
Heptacosafuorotetradecanoic acid	206-803-4	376-06-7	vPvB
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated - covering well-defined substances and UVCB substances, polymers and homologues	--	--	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	--	--	Equivalent Concern
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	204-650-8	123-77-3	Equivalent Concern
Cyclohexane-1,2-dicarboxylic anhydride (Hexahydrophthalic anhydride - HHPA)	201-604-9, 236-086-3, 238-009-9	85-42-7, 13149-00-3, 14166-21-3	Equivalent Concern
Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	247-094-1, 243-072-0, 256-356-4, 260-566-1	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	Equivalent Concern
Methoxy acetic acid	210-894-6	625-45-6	TRC
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (PIPP)	284-032-2	84777-06-0	TRC
Diisopentylphthalate (DIPP)	210-088-4	605-50-5	TRC
N-pentyl-isopentylphthalate (PIPP)	--	776297-69-9	TRC
1,2-Diethoxyethane	211-076-1	629-14-1	TRC
N,N-dimethylformamide; dimethyl formamide (DMFA)	200-679-5	68-12-2	TRC
Dibutyltin dichloride (DBT)	211-670-0	683-18-1	TRC
Acetic acid, lead salt, basic	257-175-3	51404-69-4	TRC
Basic lead carbonate (trilead bis(carbonate) dihydroxide)	215-290-6	1319-46-6	TRC
Lead oxide sulfate (basic lead sulfate)	234-853-7	12036-76-9	TRC



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[Phthalato(2-)]dioxotrilead (dibasic lead phthalate)	273-688-5	69011-06-9	TRC
Dioxobis(stearato)trilead	235-702-8	12578-12-0	TRC
Fatty acids, C16-18, lead salts	292-966-7	91031-62-8	TRC
Lead bis(tetrafluoroborate)	237-486-0	13814-96-5	TRC
Lead cyanamidate	244-073-9	20837-86-9	TRC
Lead dinitrate	233-245-9	10099-74-8	TRC
Lead oxide (lead monoxide)	215-267-0	1317-36-8	TRC
Lead tetroxide (orange lead)	215-235-6	1314-41-6	TRC
Lead titanium trioxide	235-038-9	12060-00-3	TRC
Lead Titanium Zirconium Oxide	235-727-4	12626-81-2	TRC
Pentalead tetraoxide sulphate	235-067-7	12065-90-6	TRC
Pyrochlore, antimony lead yellow	232-382-1	8012-00-8	TRC
Silicic acid, barium salt, lead-doped	272-271-5	68784-75-8	TRC
Silicic acid, lead salt	234-363-3	11120-22-2	TRC
Sulfurous acid, lead salt, dibasic	263-467-1	62229-08-7	TRC
Tetraethyllead	201-075-4	78-00-2	TRC
Tetralead trioxide sulphate	235-380-9	12202-17-4	TRC
Trilead dioxide phosphonate	235-252-2	12141-20-7	TRC
Furan	203-727-3	110-00-9	Carcinogenic
Propylene oxide; 1,2-epoxypropane; methyloxirane	200-879-2	75-56-9	Carcinogenic Mutagenic
Diethyl sulphate	200-589-6	64-67-5	Carcinogenic Mutagenic
Dimethyl sulphate	201-058-1	77-78-1	Carcinogenic
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	421-150-7	143860-04-2	TRC
Dinoseb	201-861-7	88-85-7	TRC
4,4'-methylenedi-o-toluidine	212-658-8	838-88-0	Carcinogenic
4,4'-oxydianiline and its salts	202-977-0	101-80-4	Carcinogenic Mutagenic
4-Aminoazobenzene; 4-Phenylazoaniline	200-453-6	60-09-3	Carcinogenic
4-methyl-m-phenylenediamine (2,4-toluene-diamine)	202-453-1	95-80-7	Carcinogenic
6-methoxy-m-toluidine (p-cresidine)	204-419-1	120-71-8	Carcinogenic
Biphenyl-4-ylamine ; 4-Aminobipheny	202-177-1	92-67-1	Carcinogenic
o-aminoazotoluene	202-591-2	97-56-3	Carcinogenic
o-Toluidine; 2-Aminotoluene	202-429-0	95-53-4	Carcinogenic
N-methylacetamide	201-182-6	79-16-3	TRC
1-bromopropane; n-propyl bromide	203-445-0	106-94-5	TRC
Cadmium	231-152-8	7440-43-9	Carcinogenic Equivalent Concern
Cadmium oxide	215-146-2	1306-19-0	Carcinogenic
Ammoniumpentadecafluorooctanoate (APFO)	223-320-4	3825-26-1	TRC
Pentadecafluorooctanoic acid (PFOA)	206-397-9	335-67-1	TRC



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<u>Substance Name</u>	<u>EC Number</u>	<u>CAS Number</u>	<u>Reason for Inclusion</u>
Dipentyl phthalate (DPP)	205-017-9	131-18-0	TRC
4-Nonylphenol, branched and linear, ethoxylated <i>[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]</i>	--	--	Equivalent Concern
Cadmium sulphide	215-147-8	1306-23-6	Carcinogenic Equivalent Concern
Lead di(acetate)	206-104-4	301-04-2	TRC
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)	217-710-3	1937-37-7	Carcinogenic
Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	209-358-4	573-58-0	Carcinogenic
Trixylyl phosphate	246-677-8	25155-23-1	TRC
Dihexyl phthalate (DnHP)	201-559-5	84-75-3	TRC
Imidazolidine-2-thione; 2-imidazoline-2-thiol	202-506-9	96-45-7	TRC

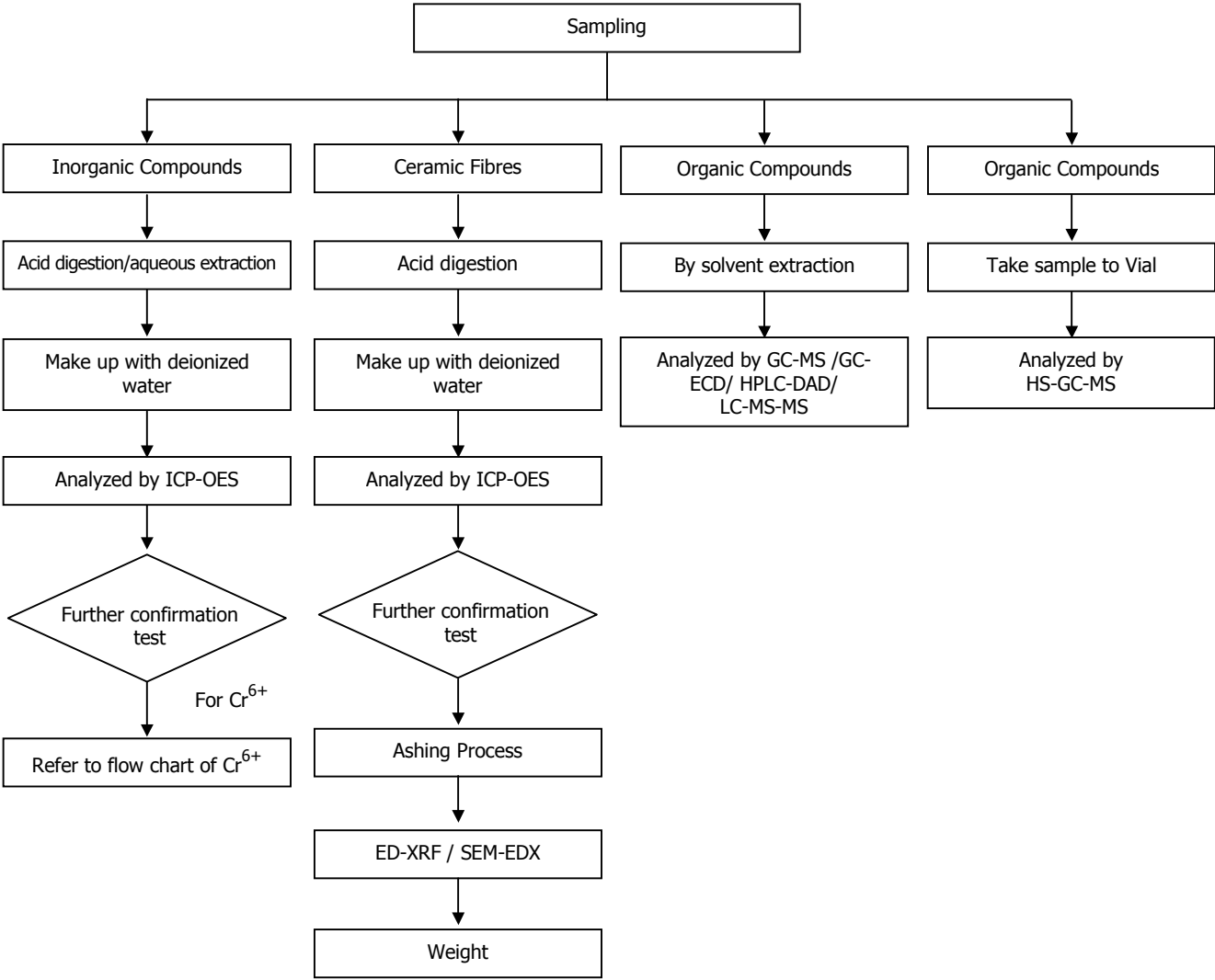
Remarks: TRC = Toxic for Reproduction
PBT = Persistent, Bioaccumulative and Toxic
vPvB = Very Persistent And Very Bioaccumulative



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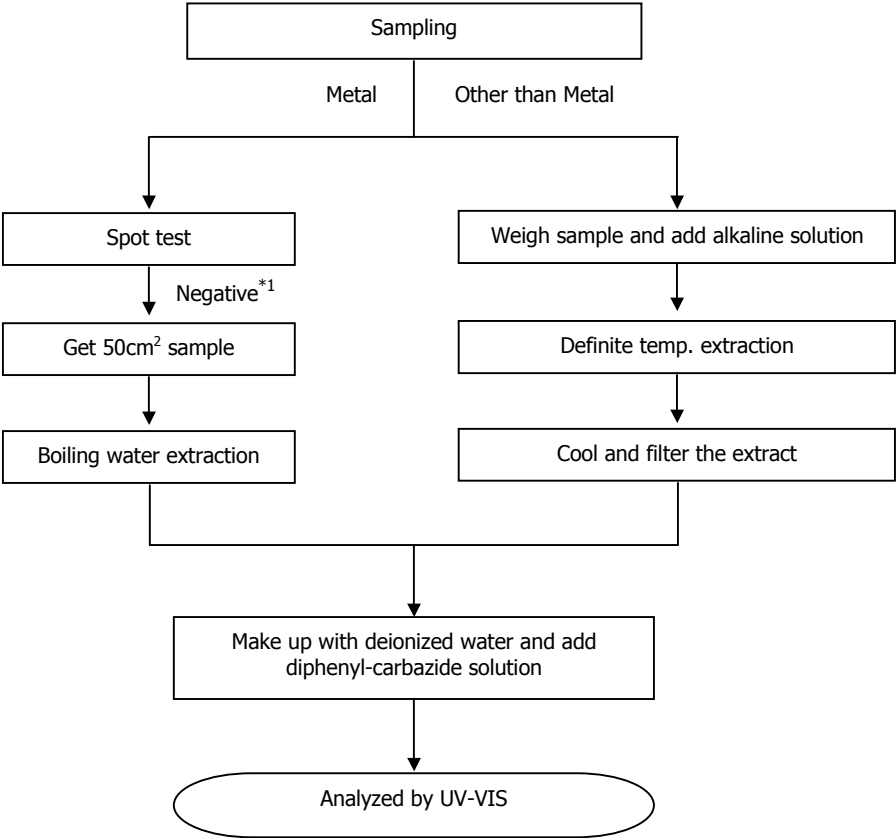
Test Conducted
Measurement Flowchart:



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Test Conducted
Test for Chromium (VI) Content



Remark :
*1: If the result of spot test is positive, Chromium VI would be determined as detected.



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End of Report

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



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TERMS AND CONDITIONS OF BUSINESS

1. Intertek Testing Services Taiwan Ltd. (hereinafter "the Company") agrees to provide its services in accordance with and subject to the terms and conditions herein contained (hereinafter "the Conditions"). The Conditions may only be modified by a variation expressed in writing and signed on behalf of the Company by a director and no other action on the part of the Company or its employees or agents shall be construed as an acceptance of any other terms and conditions.
2. The Company acts for the person or body from whom the request to provide its services has originated (hereinafter "the Principal"). No other party is entitled to give instructions to the Company unless agreed by the Company.
3. All rights (including but not limited to copyright) in any test reports, surveys, certificates of inspection or other material produced by the Company in the course of providing its services shall remain vested in the Company. The Principal shall not reproduce or make copies, publish or disclose the contents of any such material or extracts thereof to any third party without the Company's prior written consent, which may be refused at its discretion. The Principal further undertakes that its servants and agents shall keep confidential and shall not publish or otherwise use any information that may be acquired relating to the Company's activities.
4.
 - 4.1 The Company undertakes to exercise due care and skill in the performance of its services and accepts responsibility only where such skill and care is not exercised.
 - 4.2 The liability of the Company in respect of any claims for loss, damage or expense of whatsoever nature and howsoever arising in respect of any breach of contract and/or any failure to exercise due skill and care by the Company shall in no circumstances exceed a total aggregate sum equal to ten (10) times the amount of the fee or commission payable in respect of the specific service required under the particular contract with the Company which gives rise to such claims provided however that the Company shall have no liability in respect of any claims for indirect or consequential loss including loss of profit and/or loss of future business and/or loss of production and/or cancellation of contracts entered into by the Principal.
 - 4.3 The Company shall not in any event be liable for any loss or damage caused by delay in performance or non-performance of any of its services where the same is occasioned by any cause whatsoever that is beyond the Company's control including but not limited to war, civil disturbance, requisitioning, governmental or parliamentary restriction, prohibitions or enactment of any kind, import or export regulations, strike or trade dispute (whether involving its own employees or those of any other person), difficulties in obtaining workmen or materials, breakdown of machinery, fire or accident. Should any such event occur the Company may cancel or suspend any contract for the provision of services without incurring any liability whatsoever.
 - 4.4 The Company will not be liable to the Principal for any loss or damage whatsoever sustained by the Principal as a result of any failure by the Company to comply with any time estimate given by the Company relating to the provision of its services. [See clause 9.1] [See clause 9.2]
 - 4.5 The Principal acknowledges that samples may be damaged or destroyed in the course of testing carried out by the Company or any of the Company's agent or subcontractor as part of the necessary testing process and the Company shall not in any event be liable for any loss or damage arising from the damage or destruction of the samples subject to testing.
 - 4.6 In the event that the Principal requests for the return of the samples, the Company shall not be responsible for any re-packaging of the samples prior to such return and the Company shall in no circumstances be liable for any loss or damage caused to any of the samples during or as a result of their shipment to the Principal for the purpose of this Clause 4.6.
5.
 - 5.1 Subject to the Principal's instructions as accepted by the Company, the test reports, surveys, certificates of inspection or other material produced by the Company shall contain statements of opinion made with due care within the limitation of the instructions received by the Company. The Company is under no obligation to refer to or report upon any facts or circumstances which are outside the specific instructions received.
 - 5.2 For pre-shipment inspection or survey of goods, the Company's inspector shall perform the inspection or survey when goods are 100% completed, packed and marked (unless otherwise agreed between the Company and the Principal). Goods for inspection or survey shall be unpacked in the presence of the Company's inspector and inspection or survey shall, subject to Condition 5.3, take place at the place specified by the Principal.
 - 5.3 If the Company's inspector finds that the location is not suitable for carrying out a proper inspection or survey of goods or where necessary equipment for inspection or survey is not available the inspector may, if practical in the circumstances, draw samples of goods from the location and carry out the inspection or survey at the premises of the Company. The Principal shall be responsible for all costs and expenses incurred in relation thereto.
 - 5.4 Reports, surveys or certificates issued following testing or analysis of samples contain the Company's specific opinion on those samples only but do not express any opinion upon the bulk from which the samples were drawn. If an opinion on the bulk is requested special arrangements in writing must be made in advance with the Company for the inspection and sampling of the bulk. In no circumstances shall the Company's responsibility extend beyond inspection, testing and reporting upon the samples actually drawn from the bulk and inspected, tested and surveyed by the Company and any inference to be drawn from the results of such inspection or survey or testing shall be entirely in the discretion and at the sole and exclusive responsibility of the Principal.
6. The Company shall be entitled at its discretion to delegate the performance of the whole or any part of the services contracted for with the Principal to any agent or subcontractor.
7. Every officer, employee, agent or subcontractor of the Company shall have the benefit of the limitations of liability and the indemnities contained in the General Conditions. So far as relates to such limitations and indemnities, any contract entered into by the Company is entered into not only on its own behalf but also as agent and trustee for every such person as aforesaid.
8. If the requirements of the Principal necessitate the analysis of samples by the Principal or by any third party the Company will pass on the results of the analysis but without responsibility for its accuracy. Where the Company is only able to witness an analysis by the Principal or by any third party the Company will provide confirmation, if such be the case, that a correct sample has been analysed but will not otherwise be responsible for the accuracy of such analysis.
9. The Principal will:
 - 9.1 ensure that instructions to the Company are given in due time and are accompanied by sufficient information to enable the required services to be performed effectively;
 - 9.2 accept that documents reflecting arrangements or agreements made between the Principal and any third party, or third party documents such as copies of contracts of sale, letters of credit, bills of lading, etc. are -if received by the Company considered to be for information only, without extending or restricting the services to be provided or obligations accepted by the Company;
 - 9.3 procure all necessary access for the Company's representatives to enable the required services to be performed effectively;
 - 9.4 supply, if required, any special equipment and personnel necessary for the performance of the required services;
 - 9.5 ensure that all necessary measures are taken for safety and security of working conditions, sites and installations during the performance of the required services;



- 9.6 take all necessary steps to eliminate or remedy any obstruction to or interruptions in the performance of the required services and repack all inspected goods immediately after any inspection or survey of them;
- 9.7 inform the Company in advance of any known hazards or dangers, actual or potential, associated with any request for the provision of services by the Company including but not limited to the presence or risk of radiation, toxic or noxious or explosive elements or materials, environmental pollution or poisons;
10. The Principal shall guarantee, hold harmless and indemnify the Company and its officers, employees, agents or subcontractors against:
- 10.1 all claims made by any third party for any loss, damage or expense of whatsoever nature and howsoever arising relating to the performance, purported performance or non-performance of any of services to the extent that the aggregate of any such claims relating to any one service exceeds the limit mentioned in Condition 4.2.
- 10.2 any loss or damage suffered by the Company as a result of the provision of services by the Company to the Principal otherwise than resulting from the Company's own error, negligence or wilful default.
11. 11.1 The Principal will punctually pay the Company immediately upon presentation of the relevant invoice or within such other period as may have been agreed in writing by the Company all charges rendered by the Company failing which interest will become due at the rate of 1.5 per cent per month from the date of invoice until payment. The Principal further agrees and undertakes to reimburse the Company all disbursements reasonably incurred in connection with the provision of its services.
- 11.2 The Principal shall not be entitled to retain or defer payment of any sums due to the Company on account of any dispute, cross claim or set off which it may allege against the Company.
- 11.3 In the event of any suspension of payment arrangement with creditors, bankruptcy, insolvency, receivership or cessation of business or failure of the Principal to pay part or all of any sums owing to the Company, the Company shall be entitled to suspend all further performance of its services and withhold the issue of any test report, survey, certificate of inspection or other material requested forthwith and without liability until payment of all sums owing to the Company together with interest thereon is made
12. Without prejudice to any rights the Company may have at law or under the Conditions, the Company has the following rights in the event of non-payment of sums owing to the Company as set out below:
- 12.1 The Company has a general and particular lien over all samples delivered to be tested for all claims and sums owing by the Principal to the Company under any contract whatsoever and in any other way whatsoever.
- 12.2 During the currency of any such lien the Company is entitled to be paid reasonable storage charges for samples retained in the Company's custody.
- 12.3 Without prejudice to the Company's lien and other rights under Conditions 12.1 to 12.2 above, if test, inspection or survey of the goods takes place on the premises of the Company, the Company may give notice to the Principal that the goods (or any part thereof) are ready for collection and the Principal shall collect the same within three (3) calendar days (Saturdays, Sundays and Public Holidays excepted). Upon the expiry of this period, if the goods are not collected by the Principal, at the sole discretion of the Company the goods may be deemed abandoned and/or destroyed.
- 12.4 Without prejudice to Conditions 12.3 above, the Company shall have the discretion to store the goods (or any of them) at their own premises or elsewhere at the Principal's expense if the Principal has deposited the goods at the Company's premises for the performance of these services and has subsequently failed to collect the said goods.
- 12.5 The expenses by way of disbursements that the Company may reclaim from the Principal include all reasonable costs incurred by the Company (whether by way of storage, insurance or otherwise) in respect of the goods and it is expressly declared that it shall be reasonable but not mandatory for the Company to effect comprehensive insurance in respect of the goods.
- 12.6 Without prejudice to the Company's lien and other rights under Conditions 12.1 to 12.5 above, the risk and property in the goods shall remain at all times in the Principal.
13. In the event of the Company being prevented by reason of any cause whatsoever outside the Company's control from performing or completing any service for which an order has been given or an agreement made, the Principal will pay to the Company:
- 13.1 the amount of all abortive expenditure actually made or incurred; and
- 13.2 a proportion of the agreed fee or commission equal to the proportion (if any) of the service actually carried out; and the Company shall be relieved of all responsibility whatsoever for the partial or total non-performance of the required service.
14. The Company shall be discharged from all liability to the Principal for all claims for loss, damage or expense unless suit is brought within twelve (12) months after the date of the performance by the Company of the service which gives rise to the claim or in the event of any alleged non-performance within twelve (12) months of the date when such service should have been completed.
15. In the event that any unforeseen additional time or costs are incurred in the course of carrying out any of its services the Company shall be entitled to render additional charges as shall reasonably reflect such additional time and costs incurred.
16. All contracts for provision of services by the Company and the Conditions shall be construed in accordance with and governed by the laws of the ROC and for the purpose of any arbitral or litigation proceedings such contracts shall be deemed to have been made and performed in Taiwan. If any provision contained in the Conditions is and/or becomes invalid, illegal or unenforceable in any respect under the laws of the ROC, the validity, legality and enforceability of the remaining provisions hereof shall not in any way be affected or impaired thereby.
17. Any dispute or claim arising out of or relating to the provision of, or any agreement to provide, services by the Company shall be referred to and determined by arbitration subject to the Company's sole and overriding discretion to commence litigation proceedings in the courts of Taiwan or the courts of any other country as the Company may choose. The parties may agree to the appointment of an arbitrator failing which either party may, after having made a written request to concur in the appointment of an arbitrator, request the ROC Arbitration Association to appoint an arbitrator. The place of arbitration shall be in Taiwan. There shall only be one arbitrator.

