



**BUREAU
VERITAS**

TEST REPORT

Technical Report:

(6215)257-0527AMD-1

October 19, 2015

Date Received:

September 14, 2015

Page 1 of 19

LYN IP

Supplier 5102

Factory Company Name:

Factory Address:

Project No.:

Client Reference No.:

Sample Type:

Sample Pick Up Date:

Test Period:

Grab Sample*

September 14, 2015

September 14, 2015 to October 19, 2015

Sample Description:

Sample received is stated to be:

I001) Wastewater after treatment

REMARK

If there are questions or concerns on this report, please contact:

chemical.inquiry@tw.bureauveritas.com

**BUREAU VERITAS CONSUMER PRODUCTS
SERVICES (H.K.) LIMITED, TAIWAN BRANCH**

PREPARED BY : Jack Chiu


**QUEENY CHEN
SENIOR MANAGER
ANALYTICAL DEPARTMENT**

CN: (6215)257-0527AMD-1/QC/JK

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Photo of the Sample/ Sampling Location



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Executive Summary

11 Priority Chemical Groups	I001
Phthalates	●
Brominated and Chlorinated Flame Retardants	○
Azo Dyes	○
Organotin Compounds	○
Chlorobenzenes	○
Brominated and Chlorinated Solvents	○
Chlorophenols	○
Short-Chained Chlorinated Paraffins	○
Heavy Metals	●
APs and APEOs	○
Perfluorinated Chemicals	○

Traditional Parameters	I001
Color	See result in page 10 - 12
pH Value	
Total Suspended Solids (TSS)	
Total Dissolved Solids (TDS)	
Biochemical Oxygen Demand (BOD ₅)	
Chemical Oxygen Demand (COD)	
Sulfide	
Total Phenolics	
Ca & Mg Hardness	

Note / Key :

- ● – Detected
- ○ – Not Detected

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Objective

The environment samples were tested for below 11 Priority Chemical Groups according to the Joint Roadmap: Toward Zero Discharge of Hazardous Chemicals.

11 Priority Chemical Groups

- 1) Phthalates
- 2) Brominated and Chlorinated Flame Retardants
- 3) Azo Dyes
- 4) Organotin Compounds
- 5) Chlorobenzenes
- 6) Brominated and Chlorinated Solvents
- 7) Chlorophenols
- 8) Short-Chain Chlorinated Paraffins
- 9) Heavy Metals
- 10) APs and APEOs
- 11) Perfluorinated Chemicals

The environment sample was also tested for below General Parameters.

General Parameters

- 1) Color
- 2) pH Value
- 3) Total Suspended Solids (TSS)
- 4) Total Dissolved Solids (TDS)
- 5) Biochemical Oxygen Demand (BOD₅)
- 6) Chemical Oxygen Demand (COD)
- 7) Sulfide
- 8) Total Phenolics
- 9) Ca & Mg Hardness

Sampling Plan

Basically, four environment samples were sampled per factory, including 1) Incoming water; 2) Wastewater before treatment; 3) Wastewater after treatment; and 4) Sludge in clarifier. Total number of sample collected will be depended on the actual factory facilities and manufacturing processes.

Method of sampling used is grab sampling (agreed with client.). Grab samples are discrete samples that are taken at a location to provide a 'snapshot' of the water quality characteristics at that time. For the purposes of quantifying water or wastewater constituents, grab samples will show the concentrations at that location and time of sampling. They will not provide any information about the concentrations outside that point in time.

Remark :

- Sampling procedure is with reference to below standards:
 - 1) South Australia EPA Guidelines (June 2007), Regulatory Monitoring and Testing Water and Wastewater Sampling.
 - 2) Australia EPA (Victoria) Guideline (June 2009), Sampling and Analysis of Waters, Wastewaters, Soils and Wastes.
 - 3) ISO 5667-3:2003, Water Quality - Sampling - Part 3: Guidance on the Preservation and Handling of Water Samples.
 - 4) ASTM D3976-92 (Reapproved 2010), Standard Practice for Preparation of Sediment Samples for Chemical Analysis.
- Field data records are attached in Appendix B.

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Test Result

11 Priority Chemical Groups

Phthalates

Test results of Phthalates are as below.

Phthalates	I001
Butyl benzyl phthalate (BBP)	ND
Dibutyl phthalate (DBP)	ND
Di-2-ethylhexyl phthalate (DEHP)	0.00124
Di-n-octyl phthalate (DNOP)	ND
Di-iso-nonyl phthalate (DINP)	0.00156
Di-iso-decyl phthalate (DIDP)	ND
Dimethyl phthalate (DMP)	ND
Diethyl phthalate (DEP)	ND
Di-n-propyl phthalate (DPRP)	ND
Di-iso-butyl phthalate (DIBP)	ND
Di-cyclohexyl phthalate (DCHP)	ND
Di-n-hexyl phthalate (DnHP)	ND
Dinonyl phthalate (DNP)	ND
Di-iso-octyl phthalate (DIOP)	ND
Dimethoxyethyl phthalate (DMEP)	ND
1,2-benzenedicarboxylic acid, di-C7-11 branched alkyl ester and linear alkyl ester (DHNUP)	ND
1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl ester, C7-rich (DIHP)	ND

Brominated and Chlorinated Flame Retardants

Test results of Brominated and Chlorinated Flame Retardants are as below.

Brominated and Chlorinated Flame Retardants	I001
Polybromobiphenyls (PBBs)	ND
Polybromodiphenyl ethers (PBDEs)	ND
Bis(2,3-dibromopropyl) phosphate	ND
Hexabromocyclododecane (HBCDD)	ND
2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	ND
Tetrabromobisphenol A (TBBPA)	ND
Tris(2,3-dibromopropyl) phosphate (TRIS)	ND
Tris(2-chloroethyl) phosphate (TCEP)	ND
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	ND

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Test Result

Azo Dyes

Test results of Azo Dyes are as below.

Amines	I001
4-Aminodiphenyl	ND
Benzidine	ND
4-Chloro-o-toluidine	ND
2-Naphthylamine	ND
o-Aminoazotoluene	ND
5-nitro-o-toluidine	ND
4-Chloroaniline	ND
4-Methoxy-m-phenylenediamine	ND
4,4'-Diaminodiphenylmethane	ND
3,3'-Dichlorobenzidine	ND
3,3'-Dimethoxybenzidine	ND
3,3'-Dimethylbenzidine	ND
4,4'-Methylenedi-o-toluidine	ND
p-Cresidine	ND
4,4'-Methylene-bis-(2-chloraniline)	ND
4,4'-Oxydianiline	ND
4,4'-Thiodianiline	ND
o-Toluidine	ND
4-Methyl-m-phenylenediamine	ND
2,4,5-Trimethylaniline	ND
o-Anisidine	ND
4-Aminoazobenzene	ND
2,4-Xylidine	ND
2,6-Xylidine	ND
Aniline	ND
1,4-Phenylenediamine	ND
2-Chloroaniline	ND
5-Nitro-o-anisidine	ND
m-Toluidine	ND
N,N-Diethylaniline	ND
N-Ethylaniline	ND
N-Methylaniline	ND
p-Toluidine	ND

Organotin Compounds

Test results of Organotin Compounds are as below.

Organotin Compounds	I001
Monobutyltin (MBT)	ND
Dibutyltin (DBT)	ND
Diocetyltn (DOT)	ND
Tributyltin (TBT)	ND
Triphenyltin (TPhT)	ND
Tricyclohexyltin (TCyHT)	ND
Triocetyltn (TOT)	ND
Tripropyltin (TPT)	ND
Monooctyltin (MOT)	ND
Trimethyltin (TMT)	ND
Tetrabutyltin (TebT)	ND

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Test Result

Chlorobenzenes

Test results of Chlorobenzenes are as below.

Chlorobenzenes	I001
Chlorobenzene	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene, 1,4-Dichlorobenzene	ND
1,2,3-Trichlorobenzene	ND
1,2,4-Trichlorobenzene	ND
1,3,5-Trichlorobenzene	ND
1,2,3,4-Tetrachlorobenzene	ND
1,2,3,5-Tetrachlorobenzene, 1,2,4,5-Tetrachlorobenzene	ND
Pentachlorobenzene	ND
Hexachlorobenzene	ND
4-Chlorotoluene	ND

Brominated and Chlorinated Solvents

Test results of Brominated and Chlorinated Solvents are as below.

Brominated and Chlorinated Solvents	I001
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Methylene Chloride	ND
cis-1,2-Dichloroethylene	ND
trans-1,2-Dichloroethylene	ND
Chloroform	ND
1,1,1-Trichloroethane	ND
Carbon Tetrachloride	ND
Trichloroethylene	ND
1,1,2-Trichloroethane	ND
1,1,1,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Bromodichloromethane	ND
Bromoform	ND
Chlorodibromomethane	ND
Chloroethane	ND
Dibromomethane	ND
1,1-Dichloroethane	ND
trans-1,3-Dichloropropene	ND
Hexachlorobutadiene	ND
1,1,2,2-Tetrachloroethane	ND
Vinyl chloride	ND
Hexachloroethane	ND
Pentachloroethane	ND

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Test Result

Chlorophenols

Test results of Chlorophenols are as below.

Chlorophenols	I001
Pentachlorophenol	ND
2,3,4,5-Tetrachlorophenol	ND
2,3,4,6-Tetrachlorophenol	ND
2,3,5,6-Tetrachlorophenol	ND
2,4,6-Trichlorophenol	ND
2,3,5-Trichlorophenol	ND
2,4,5-Trichlorophenol	ND
3,4,5-Trichlorophenol, 2,3,4-Trichlorophenol	ND
2,3-Dichlorophenol	ND
3,4-Dichlorophenol	ND
2,4-Dichlorophenol, 2,5-Dichlorophenol, 2,6-Dichlorophenol, 3,5-Dichlorophenol	ND
2-Chlorophenol	ND
3-Chlorophenol	ND
4-Chlorophenol	ND
4-Chloro-3-methylphenol	ND

Short-Chain Chlorinated Paraffins

Test results of Short-Chain Chlorinated Paraffins are as below.

Short-Chain Chlorinated Paraffins (SCCP)	I001
	ND

Heavy Metals

Test results of Heavy Metals are as below.

Heavy Metals	I001
Arsenic (As)	ND
Cadmium (Cd)	ND
Mercury (Hg)	ND
Lead (Pb)	0.00389
Antimony (Sb)	0.287
Cobalt (Co)	ND
Nickel (Ni)	0.00123
Copper (Cu)	0.0492
Zinc (Zn)	0.0299
Chromium (Cr)	0.00254
Manganese (Mn)	0.0731
Chromium VI (Cr VI)	ND
Cyanide (CN ⁻)	0.005

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Test Result

APs and APEOs

Test results of APs and APEOs are as below.

APs and APEOs	I001
Octylphenol (OP)	ND
Nonylphenol (NP)	ND
Octylphenol monoethoxylates (OP1EO)	ND
Nonylphenol monoethoxylates (NP1EO)	ND
Octylphenol monoethoxylates (OP2EO)	ND
Nonylphenol monoethoxylates (NP2EO)	ND
Octylphenolethoxylates, (n=4 to n=15)	ND
Nonylphenolethoxylates, (n=4 to n=15)	ND

Perfluorinated Chemicals

Test results of Perfluorinated Chemicals are as below.

Perfluorinated Chemicals	I001
Perfluorooctanoic acid (PFOA)	ND
Perfluorooctane sulphonates (PFOS)	ND
Perfluoro-n-hexanoic acid (PFHxA)	ND
Perfluorohexane sulphonates (PFHxS)	ND
Perfluorobutanoic acid (PFBA)	ND
Perfluorobutane sulphonates (PFBS)	ND

Remark :

- Test method, reporting limit and list of chemical are summarized in tables of Appendix A.
- ND = Not detected (Please refer to reporting limit shown in Appendix A.).
- NA = Not applicable.
- All results are in ppm as unit.
- ppm = part(s) per million.

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General Parameters

Color

Test Method : With reference to ISO 7887: 2011

Tested Item(s)	Result	Unit	Conclusion
I001	57	Pt-Co	DATA

pH Value

Test Method : With reference to APHA 4500-H+ B:2012 & U. S. EPA 150.2

-	Unit	Result
Test Item(s)	-	I001
Parameter	-	-
Temp. of sample	deg. C	32.4
pH value of sample	-	7.2
Conclusion	-	DATA

Note:

Temp. = Temperature

deg. C = degree Celsius (°C)

APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

U. S. EPA = United States Environmental Protection Agency

Total Suspended Solids (TSS)

Test Method : With reference to APHA 2540 D:2012

Tested Item(s)	Result	Unit	Conclusion
I001	1.2	mg/L	DATA

Note:

mg/L = milligram per liter

Detection Limit (mg/L) : 5

APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

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Total Dissolved Solids (TDS)

Test Method : With reference to APHA 2540 C:2012

Tested Item(s)	Result	Unit	Conclusion
I001	1470	mg/L	DATA

Note:

mg/L = milligram per liter

Detection Limit (mg/L) : 10

APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

Biochemical Oxygen Demand (BOD₅)

Test Method : With reference to APHA 5210 B:2012

Tested Item(s)	Result	Unit	Conclusion
I001	27.6	mg/L	DATA

Note:

mg/L = milligram per liter

Detection Limit (mg/L) : 1.0

APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

Chemical Oxygen Demand (COD)

Test Method : With reference to APHA 5220 B:2012 & U. S. EPA 410.3

Tested Item(s)	Result	Unit	Conclusion
I001	152	mg/L	DATA

Note:

mg/L = milligram per liter

Detection Limit (mg/L) : 1.82

APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

U. S. EPA = United States Environmental Protection Agency

Sulfide

Test Method : With reference to APHA 4500 S2- D:2011

Tested Item(s)	Result	Unit	Conclusion
I001	<0.020	mg/L	DATA

Note:

mg/L = milligram per liter

Detection Limit (mg/L) : 0.020

APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

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Total Phenolics

Test Method : With reference to EPA 420.1 or HJ 503:2009

Tested Item(s)	Result	Unit	Conclusion
I001	0.0422	mg/L	DATA

Note:

mg/L = milligram per liter

Detection Limit (mg/L) : 0.0001

Ca & Mg Hardness

Test Method : With reference to APHA 2340 C:2011, 3500-Ca:2011 & 3500-Mg:1997

-	Unit	Result
Tested Item(s)	-	I001
Parameter	-	-
Total Hardness	mg/L	81.0
Conclusion	-	DATA

Note:

mg/L = milligram per liter

Detection Limit (mg/L) : 0.1

APHA = American Public Health Association Standard Methods for the Examination of Water and Wastewater

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APPENDIX A

List of Phthalates :					
No.	Test Method			Reporting Limit	Unit
1	With reference to U. S. EPA 8270D. (For Wastewater)			Each: 0.001	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Butyl benzyl phthalate (BBP)	85-68-7	10	Di-iso-butyl phthalate (DIBP)	84-69-5
2	Dibutyl phthalate (DBP)	84-74-2	11	Di-cyclohexyl phthalate (DCHP)	84-61-7
3	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	12	Di-n-hexyl phthalate (DnHP)	84-75-3
4	Di-n-octyl phthalate (DNOP)	117-84-0	13	Dinonyl phthalate (DNP)	84-76-4
5	Di-iso-nonyl phthalate (DINP)	28553-12-0 & 68515-48-0	14	Di-iso-octyl phthalate (DIOP)	27554-26-3
6	Di-iso-decyl phthalate (DIDP)	26761-40-0 & 68515-49-1	15	Dimethoxyethyl phthalate (DMEP)	117-82-8
7	Dimethyl phthalate (DMP)	131-11-3	16	1,2-benzenedicarboxylic acid, di-C7-11 branched alkyl ester and linear alkyl ester (DHNUP)	68515-42-4
8	Diethyl phthalate (DEP)	84-66-2	17	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl ester, C7-rich (DIHP)	71888-89-6
9	Di-n-propyl phthalate (DPRP)	131-16-8	-	-	-

List of Brominated and Chlorinated Flame Retardants :					
No.	Test Method			Reporting Limit	Unit
1	With reference to U. S. EPA 527 and with reference to U. S. EPA 8321B. (For Wastewater)			Each (PBBs & PBDEs): 0.00005; Each (TRIS, TBBPA & HBCDD): 0.0005; Each (Others): 0.025 TCEP: 0.00005; TDCP: 0.0005	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Polybromobiphenyls (PBBs)	Various	6	Hexabromocyclododecane (HBCDD)	Various
2	Tris(2,3-dibromopropyl) phosphate (TRIS)	126-72-7	7	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0
3	Polybromodiphenyl ethers (PBDEs)	Various	8	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8
4	Tetrabromobisphenol A (TBBPA)	79-94-7	9	Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8
5	Bis(2,3-dibromopropyl) phosphate	5412-25-9	-	-	-

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List of Aromatic Amines in Azo Colorants :					
No.	Test Method			Reporting Limit	Unit
1	With reference to German Standard DIN 38407-16, with reference to European Standard EN 14362-1 incorporating Corrigendum and with reference to European Standard EN 14362-3. (For Wastewater)			Each: 0.0001	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	4-Aminodiphenyl (Biphenyl-4-ylamine or Xenylamine)	92-67-1	18	o-Toluidine (2-Aminotoluene)	95-53-4
2	Benzidine	92-87-5	19	4-Methyl-m-phenylenediamine (2,4-Toluenediamine)	95-80-7
3	4-Chloro-o-toluidine	95-69-2	20	2,4,5-Trimethylaniline	137-17-7
4	2-Naphthylamine	91-59-8	21	o-Anisidine (2-Methoxyaniline)	90-04-0
5	o-Aminoazotoluene (4-Amino-2',3'-dimethylazobenzene or 4-o-tolyazo-o-toluidine)	97-56-3	22	4-Aminoazobenzene (p-Aminoazobenzene)	60-09-3
6	5-nitro-o-toluidine (2-Amino-4-nitrotoluene)	99-55-8	23	2,4-Xylidine (2,4-dimethylaniline)	95-68-1
7	4-Chloroaniline (p-Chloroaniline)	106-47-8	24	2,6-Xylidine (2,6-dimethylaniline)	87-62-7
8	4-Methoxy-m-phenylenediamine (2,4-Diaminoanisole)	615-05-4	25	Aniline	62-53-3
9	4,4'-Diaminodiphenylmethane (4,4'-Methylenedianiline)	101-77-9	26	1,4-Phenylenediamine	106-50-3
10	3,3'-Dichlorobenzidine (3,3'-Dichlorobiphenyl-4,4'-ylenediamine)	91-94-1	27	2-Chloroaniline	95-51-2
11	3,3'-Dimethoxybenzidine (o-Dianisidine)	119-90-4	28	5-Nitro-o-anisidine	99-59-2
12	3,3'-Dimethylbenzidine (4,4'-Bi-o-tolidine)	119-93-7	29	m-Toluidine	108-44-1
13	4,4'-Methylenedi-o-toluidine (3,3'-Dimethyl-4,4'-diaminodiphenylmethane)	838-88-0	30	N,N-Diethylaniline	91-66-7
14	p-Cresidine (6-Methoxy-m-toluidine)	120-71-8	31	N-Ethylaniline	103-69-5
15	4,4'-Methylene-bis-(2-chloroaniline) (2,2'-Dichloro-4,4'-methylene-dianiline)	101-14-4	32	N-Methylaniline	100-61-8
16	4,4'-Oxydianiline	101-80-4	33	p-Toluidine	106-49-0
17	4,4'-Thiodianiline	139-65-1	-	-	-

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List of Organotin Compounds :					
No.	Test Method			Reporting Limit	Unit
1	With reference to European Standard EN ISO 17353. (For Wastewater)			Each: 0.00001	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Monobutyltin (MBT)	Various	7	Trioctyltin (TOT)	Various
2	Dibutyltin (DBT)		8	Tripropyltin (TPT)	
3	Dioctyltin (DOT)		9	Monooctyltin (MOT)	
4	Tributyltin (TBT)		10	Trimethyltin (TMT)	
5	Triphenyltin (TPhT)		11	Tetrabutyltin (TebT)	
6	Tricyclohexyltin (TCyHT)		-	-	

List of Chlorobenzenes :					
No.	Test Method			Reporting Limit	Unit
1	With reference to U. S. EPA 8260B and with reference to U. S. EPA 8270D. (For Wastewater)			Each: 0.00002	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Chlorobenzene	108-90-7	7	1,2,3,4-Tetrachlorobenzene	634-66-2
2	1,2-Dichlorobenzene	95-50-1	8	1,2,3,5-Tetrachlorobenzene, 1,2,4,5-Tetrachlorobenzene	634-90-2, 95-94-3
3	1,3-Dichlorobenzene, 1,4-Dichlorobenzene	541-73-1, 106-46-7	9	Pentachlorobenzene	608-93-5
4	1,2,3-Trichlorobenzene	87-61-6	10	Hexachlorobenzene	118-74-1
5	1,2,4-Trichlorobenzene	120-82-1	11	4-Chlorotoluene	106-43-4
6	1,3,5-Trichlorobenzene	108-70-3	-	-	-

List of Brominated and Chlorinated Solvents :					
No.	Test Method			Reporting Limit	Unit
1	With reference to U. S. EPA 8260B. (For Wastewater)			Each: 0.1	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	1,2-Dichloroethane	107-06-2	13	Bromodichloromethane	75-27-4
2	1,1-Dichloroethylene	75-35-4	14	Bromoform	75-25-2
3	Methylene Chloride	75-09-2	15	Chlorodibromomethane	124-48-1
4	cis-1,2-Dichloroethylene	156-59-2	16	Chloroethane	75-00-3
5	trans-1,2-Dichloroethylene	156-60-5	17	Dibromomethane	74-95-3
6	Chloroform	67-66-3	18	1,1-Dichloroethane	75-34-3
7	1,1,1-Trichloroethane	71-55-6	19	trans-1,3-Dichloropropene	10061-02-6
8	Carbon Tetrachloride	56-23-5	20	Hexachlorobutadiene	87-68-3
9	Trichloroethylene	79-01-6	21	1,1,2,2-Tetrachloroethane	79-34-5
10	1,1,2-Trichloroethane	79-00-5	22	Vinyl chloride	75-01-4
11	1,1,1,2-Tetrachloroethane	630-20-6	23	Hexachloroethane	67-72-1
12	Tetrachloroethylene	127-18-4	24	Pentachloroethane	76-01-7

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List of Chlorophenols :					
No.	Test Method			Reporting Limit	Unit
1	With reference to U. S. EPA 8270D. (For Wastewater)			Each: 0.0005	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Pentachlorophenol	87-86-5	9	2,3-Dichlorophenol	576-24-9
2	2,3,4,5-Tetrachlorophenol	4901-51-3	10	3,4-Dichlorophenol	95-77-2
3	2,3,4,6-Tetrachlorophenol	58-90-2	11	2,4-Dichlorophenol, 2,5-Dichlorophenol, 2,6-Dichlorophenol, 3,5-Dichlorophenol	120-83-2, 583-78-8, 87-65-0, 591-35-5
4	2,3,5,6-Tetrachlorophenol	935-95-5	12	2-Chlorophenol	95-57-8
5	2,4,6-Trichlorophenol	88-06-2	13	3-Chlorophenol	108-43-0
6	2,3,5-Trichlorophenol	933-78-8	14	4-Chlorophenol	106-48-9
7	2,4,5-Trichlorophenol	95-95-4	15	4-Chloro-3-methylphenol	59-50-7
8	3,4,5-Trichlorophenol, 2,3,4-Trichlorophenol	609-19-8, 15950-66-0	-	-	-

List of Short Chain Chlorinated Paraffins :					
No.	Test Method			Reporting Limit	Unit
1	With reference to International Standard ISO 12010. (For Wastewater)			0.0004	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Short Chain Chlorinated Paraffins	85535-84-8	-	-	-

List of Alkylphenols & Alkylphenol Ethoxylates :					
No.	Test Method			Reporting Limit	Unit
1	With reference to ASTM International Standard ASTM D7065. (For Wastewater)			Each (OP & NP): 0.001; Each (OPEO & NPEO): 0.005	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Octylphenol (OP)	Various	5	Octylphenol monoethoxylates, OP2EO	Various
2	Nonylphenol (NP)		6	Nonylphenol monoethoxylates, NP2EO	
3	Octylphenol monoethoxylates, OPIEO		7	Octylphenoethoxylates, (n=4 to n=15)	
4	Nonylphenol monoethoxylates, NP1EO		8	Nonylphenoethoxylates, (n=4 to n=15)	

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List of Perfluorinated Chemicals :					
No.	Test Method			Reporting Limit	Unit
1	In house method and analysis by Liquid Chromatograph Mass Spectrometer (LC-MS). (For Wastewater)			Each: 0.00001	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Perfluorooctanoic acid (PFOA)	335-67-1	4	Perfluorohexane sulphonates (PFHxS)	3871-99-6
2	Perfluorooctane sulphonates (PFOS)	2795-39-3	5	Perfluorobutanoic acid (PFBA)	375-22-4
3	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	6	Perfluorobutane sulphonates (PFBS)	29420-49-3
List of Heavy Metals :					
No.	Test Method			Reporting Limit	Unit
1	With reference to U. S. EPA 3015A and with reference to U. S. EPA 6020A./ With reference to U. S. EPA 7196A./ With reference to APHA 4500 CN- C:2012 & APHA 4500 CN- E:2012 (For Wastewater)			Cd: 0.0001; Hg: 0.00005; CN ⁻ : 0.02 Each (Others): 0.001	ppm
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	Arsenic (As)	Various	8	Copper (Cu)	Various
2	Cadmium (Cd)		9	Zinc (Zn)	
3	Mercury (Hg)		10	Chromium (Cr)	
4	Lead (Pb)		11	Manganese (Mn)	
5	Antimony (Sb)		12	Chromium VI (Cr VI)	
6	Cobalt (Co)		-	-	
7	Nickel (Ni)		-	-	

Note / Key :

ppm = part(s) per million

U. S. EPA = United States Environmental Protection Agency

APHA = American Public Health Association

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APPENDIX B

	FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE FOR 11 PRIORITY CHEMICALS	CPSD-AN-00613-DATA 04	
		Issue Date:	14-Jul-15
		Version No.:	5
		Business Line:	Analytical

General Data

Laboratory Sample Number MC20150914AT

Client Name

Field Contact Person Phone No:

Project (Facility Name and Address)

Sampling Location / Description

Sample Identification Zero discharge with sampling plan

Sample Type Grab sample

Name of Sampler David Lu

Discharge mode Direct discharge to environment (Specify destination: River, ☐ OR Indirect discharge to sewage treatment plant

Date and time collected 2015/09/14 02:10PM

Factory Type Dyeing/Printing/Washing/Finishing/Other (please specify)

*Note: It would be selected more than one

Field Data for wastewater

Field Parameters	pH :	Temp :	Color :
Control No. of field equipment	7.2	32.4 °C	Yellow Translucent

Analysis Required and Preservation Method

Factory with effluent treatment plant	Yes		No	
Sample matrix	Incoming water			
	Wastewater before treatment			
	Wastewater after treatment – water at discharge point			
Sampler container number				
Recording time				
Volume collected, mL				
Total volume collected	Remark: Total volume collected must be greater than total of sample size required			
Tests	Test required	Total of sample size	Type of container	Preservation method
1. Phthalate	X	500 mL	Amber Glass, wash with nitric acid, rinse thoroughly with distilled water and dry before use	Without adding acid Store sample at 4°C
2. Brominated and chlorinated Flame retardant	X	500 mL		
3. Banned Azodyes	X	500 mL		
4. Organotin Compounds	X	500 mL		
5. SCCPs	X	500 mL		
6. Navy Blue		10 mL		
7. Free primary aromatic amines		500 mL		

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8. Chlorobenzenes	X	500 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
9. Chlorophenols	X	500 mL		
10. APEOs/APs	X	500 mL		
11. Chlorinated Solvents	X	500 mL		Fill to full bottle without air; acidify to ~pH 2 with HCl and store sample at 4°C
12. Heavy Metals except CrVI	X	500 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO ₃	Acidify to pH 2 with HNO ₃ and store at 4°C
13. CrVI	X	500 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air nor adding acid and store sample at 4°C
14. PFCs	X	500 mL	PE, wash with pesticide grade Acetone;	Without adding acid Store sample at 4°C
15. Cyanide	X	500 mL	Amber Glass, wash with pesticide grade acetone	Adjust pH 12 with 50% NaOH and store at 4°C

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