



TEST REPORT

Technical Report

(6721)107-0275

April 30, 2021

Date Received

April 17, 2021

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Factory Company Name: M/S R.S. PRINT FAB PVT. LTD.
Factory Address: C-7, SITE C, SURAJPUR INDUSTRIAL AREA, GREATER NOIDA
Project No.: /
Client Reference No.: /
Sampling Method: I001) Incoming water – Grab
I002) Raw Wastewater – 6 hours - Time – weighted Composite
I003) Treated Wastewater – 6 hours - Time – weighted Composite
Sample Pick Up Date: April 16, 2021
Wastewater Discharge to: Municipal Sewage or Drainage
On-Site Effluent Treatment Plant (ETP): YES
Discharge Type: Indirect Discharge
Off-site ETP name (if applicable): /
Off-site ETP address (if applicable): /
Test Period: April 17, 2021 to April 30, 2021

Sample Description:

I001) Colorless liquid – Incoming water
I002) Light Brown color liquid – Raw Wastewater
I003) Light Yellow color liquid - Treated Wastewater

REMARK

If there are questions or concerns on this report, please contact act the following persons:

PLEASE CONTACT:

FOR ANY TECHNICAL ISSUES: RAMESH KUMAR / SUMANTA KUMAR SWAIN

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This report shown the test result of the auxiliary chemical and/or raw material samples, which collected during particular factory audit. The results of this report shall not be used for any regulatory compliance purposes.

* The sampling is agreed with client.

BUREAU VERITAS CONSUMER PRODUCTS SERVICES (INDIA) PVT. LTD.

SIGNATORIES

RAHUL SRIVASTAVA
(Manager – Analytical)

"Pls. refer the website www.nabl-india.org to view our Scope of accredited Test"

Bureau Veritas Consumer Products Services (India)
Pvt. Ltd.,
C-19, Sec – 7 Noida (U.P.) 201301 PH: 4368283/205

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Executive Summary

1A) Conventional Parameters	I001	I002	I003
Temperature	NR	NR	Not Appropriate
TSS			☐
COD			☐
Total-N			Not Appropriate
pH Value			☐
Color [m^{-1}] (436nm; 525nm; 620nm)			Not Appropriate
BOD ₅			☐
Ammonium-N			Not Appropriate
Total-P			Not Appropriate
AOX			Not Appropriate
Oil and Grease			☐
Phenol			Not Appropriate
Coliform			Not Appropriate
Persistent Foam			Not Appropriate
ANIONS - Cyanide			Not Appropriate
ANIONS - Sulfide			Not Appropriate
ANIONS - Sulfite			Not Appropriate
1B) Conventional Parameters – METALS	NR	Not Appropriate	Not Appropriate

Note / Key :

- ☐ – Meet Foundational Limit / Meet discharge license criteria
- ☒ – Exceeding Foundational Limit / Exceeding discharge license criteria
- NR – Not Requested / Not required
- Not Appropriate- No requirement or criteria given in Discharge Agreement between factory and CETP.

ZDHC MRSL Substances	I001	I002	I003
2A) APs and APEOs	NR	o	o
2B) Chlorobenzenes and Chlorotoluenes	NR	o	o
2C) Chlorophenols	NR	o	o
2D) Azo Dyes	NR	o	o
2E) Carcinogenic Dyes	NR	o	o
2F) Disperse Dyes	NR	o	o
2G) Flame Retardants	NR	o	o
2H) Glycols	NR	o	o
2I) Halogenated Solvents	NR	o	o
2J) Organotin Compounds	NR	o	o
2K) Perfluorinated and Polyfluorinated Chemicals	NR	o	o
2L) Phthalates	NR	o	o
2M) Poly Aromatic Hydrocarbons	NR	o	o
2N) Volatile Organic Compounds	NR	o	o

Note / Key :

- ● – Detected
- o – Not Detected
- N/A – Not Applicable



Objective

The environment samples were tested for below parameters.

- 1A) Conventional Parameters
- 1B) Conventional Parameters – METALS
- 2A) APs and APEOs
- 2B) Chlorobenzenes and Chlorotoluenes
- 2C) Chlorophenols
- 2D) Azo Dyes
- 2E) Carcinogenic Dyes
- 2F) Disperse Dyes
- 2G) Flame Retardants
- 2H) Glycols
- 2I) Halogenated Solvents
- 2J) Organotin Compounds
- 2K) Perfluorinated and Polyfluorinated Chemicals
- 2L) Phthalates
- 2M) Poly Aromatic Hydrocarbons
- 2N) Volatile Organic Compounds

Sampling Plan

Basically, three environment samples were sampled per factory, including 1) Incoming water; 2) Discharged Wastewater (raw wastewater) and 3) Discharged Wastewater treated wastewater). Total number of sample collected will be depended on the actual factory facilities and manufacturing processes.

Method of sampling used is time-weighted composite grab samples (agreed with client.). Composite sampling shall be performed for no less than six hours, with no more than one hour between discrete samples. Each discrete sample shall be of equal volume. Wastewater and freshwater samples should, as much as possible, be collected simultaneously, during the time that PU is in normal operation. The sampling shall aim to analyse the snapshot of water quality characteristics of the operating PU. Under no circumstance shall samples be taken during times when the production process is not running or the wastewater is diluted due to heavy rainfall, etc.

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.



Test Result

1A) Conventional Parameters

Temperature

Test Method : Measurement by thermometer

Tested Item(s)	Result	Unit	Conclusion
I003	30	deg. C	DATA

Note:

deg. C = degree Celsius (°C)

Discharge License Criteria: <Not applicable>

Total Suspended Solids (TSS)

Test Method : APHA 2540D

Tested Item(s)	Result	Unit	Conclusion
I003	11 (Comply with discharge criteria)	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: 100 mg/L

Chemical Oxygen Demand (COD)

Test Method : APHA 5220D

Tested Item(s)	Result	Unit	Conclusion
I003	95 (Comply with discharge criteria)	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: 250 mg/L

Total Nitrogen (Total-N)

Test Method : APHA 4500-Norg-B

Tested Item(s)	Result	Unit	Conclusion
I003	< 1.0	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: <Not applicable>

pH Value**Test Method** : Reference to ISO 10523

-	Unit	Result
Test Item(s)	-	I003
Parameter	-	-
Temp. of sample	deg. C	30
pH value of sample	-	7.4 (comply with discharge limit)
Conclusion	-	DATA

Note:

Temp. = Temperature deg. C = degree Celsius (°C)

Discharge License Criteria: 5.5 – 9.0

Color [m⁻¹] (436nm; 525nm; 620nm)**Test Method** : With reference to ISO 7887-B

Tested Item(s)	Result	Unit	Conclusion
I003	0.7;0.4;0.2	m ⁻¹	DATA

Note:

Discharge License Criteria: <Not applicable>

Biochemical Oxygen Demand (BOD₅)**Test Method** : APHA 5210B

Tested Item(s)	Result	Unit	Conclusion
I003	14 (Comply with discharge criteria)	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: 30 mg/L

Ammonia Nitrogen**Test Method** : APHA 4500 NH₃-C

Tested Item(s)	Result	Unit	Conclusion
I003	< 1.0	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: <Not applicable>

Total Phosphorus (Total-P)**Test Method** : APHA 4500P-D

Tested Item(s)	Result	Unit	Conclusion
I003	< 0.05	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: <Not applicable>

Adsorbable Organic Halogen (AOX)**Test Method** : Reference to ISO 9562

Tested Item(s)	Result	Unit	Conclusion
I003	0.92	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: <Not applicable>

Oil and Grease**Test Method** : Reference to ISO 9377-2/ APHA 5520-B

Tested Item(s)	Result	Unit	Conclusion
I003	< 2.0 (Comply with discharge criteria)	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: 10 mg/L

Phenol**Test Method** : APHA 5530 C

Tested Item(s)	Result	Unit	Conclusion
I003	< 0.01	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: <Not applicable>

Coliform**Test Method** : Reference to ISO 9308-1

Tested Item(s)	Result	Unit	Conclusion
I003	8	bacteria/ 100 mL	DATA

Note:

bacteria/100 mL = bacteria per 100 milliliters

Discharge License Criteria: <Not applicable>

Foam**Test Method** : Visual

Tested Item(s)	Result	Unit	Conclusion
I003	No foam	-	DATA

ANIONS - Sulfide**Test Method** : APHA 4500 S²⁻-F

Tested Item(s)	Result	Unit	Conclusion
I003	< 2.0	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: <Not applicable>

ANIONS - Sulfite**Test Method** : Reference to ISO 10304-3/ APHA 4500 SO₃²⁻-B

Tested Item(s)	Result	Unit	Conclusion
I003	< 2.0	mg/L	DATA

Note:

mg/L = milligram per liter

Discharge License Criteria: <Not applicable>

1B) Conventional Parameters – METALS

Heavy Metals	I001 (µg/L)	I002 (µg/L)	I003 (µg/L)
Antimony(Sb) Discharge License Criteria: <Not applicable>	NR	38	3
Chromium(Cr), total Discharge License Criteria: <Not applicable>	NR	333	2
Cobalt(Co) Discharge License Criteria: <Not applicable>	NR	ND	ND
Copper(Cu) Discharge License Criteria: <Not applicable>	NR	94	ND
Nickel(Ni) Discharge License Criteria: <Not applicable>	NR	47	2
Silver(Ag) Discharge License Criteria: <Not applicable>	NR	ND	ND
Zinc(Zn) Discharge License Criteria: <Not applicable>	NR	170	48
Arsenic(As) Discharge License Criteria: <Not applicable>	NR	ND	ND
Cadmium(Cd) Discharge License Criteria: <Not applicable>	NR	0.32	ND
Lead(Pb) Discharge License Criteria: <Not applicable>	NR	4	ND
Mercury(Hg) Discharge License Criteria: <Not applicable>	NR	ND	ND
Chromium VI(Cr VI) Discharge License Criteria: <Not applicable>	NR	ND	ND
Cyanide(CN-) Discharge License Criteria: <Not applicable>	NR	ND	ND

Others Priority Chemical Groups

	1001 ($\mu\text{g/L}$)	1002 ($\mu\text{g/L}$)	1003 ($\mu\text{g/L}$)
2A) APs and APEOs	NR	ND	ND
2B) Chlorobenzenes and Chlorotoluenes	NR	ND	ND
2C) Chlorophenols	NR	ND	ND
2D) Azo Dyes	NR	ND	ND
2E) Carcinogenic Dyes	NR	ND	ND
2F) Disperse Dyes	NR	ND	ND
2G) Flame Retardants	NR	ND	ND
2H) Glycols	NR	ND	ND
2I) Halogenated Solvents	NR	ND	ND
2J) Organotin Compounds	NR	ND	ND
2K) Perfluorinated and Polyfluorinated Chemicals	NR	ND	ND
2L) Phthalates	NR	ND	ND
2M) Poly Aromatic Hydrocarbons	NR	ND	ND
2N) Volatile Organic Compounds	NR	ND	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.).
- All results are in ppb as unit.
- ppm = part(s) per million; ppb = part(s) per billion.
- NR – Not Requested / Not required

APPENDIX A - Photo of the Sample/ Sampling Location

I001) Sampling Point



Sampling location as per GPS
(North 28.5999104, East 77.3193728)

I001) Sampling Point Surrounding Environment



Sampling location as per GPS
(North 28.5999104, East 77.3193728)

I001) All sampled bottles with label



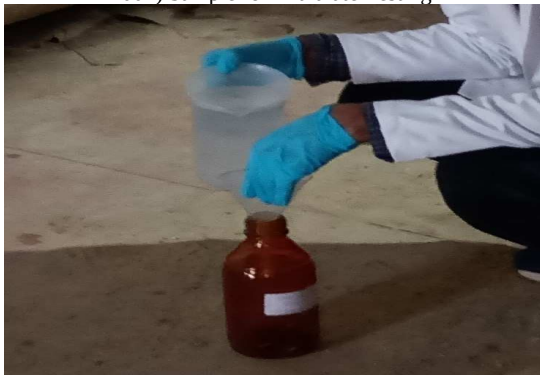
Sampling location as per GPS
(North 28.5999104, East 77.3193728)

I001) pH Value



Sampling location as per GPS
(North 28.5999104, East 77.3193728)

I001) Sample for Phthalate Testing



Sampling location as per GPS
(North 28.5999104, East 77.3193728)

I001) Packaging



Sampling location as per GPS
(North 28.5999104, East 77.3193728)

I002) Sampling Point



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I002) Sampling Point Surrounding Environment



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I002) All sampled bottles with label



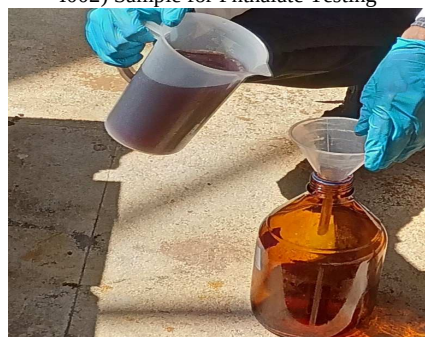
Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I002) pH Value



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I002) Sample for Phthalate Testing



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I002) Packaging



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I003) Sampling Point



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I003) Sampling Point Surrounding Environment



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I003) All sampled bottles with label



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I003) pH Value



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I003) Sample for Phthalate Testing



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)

I003) Packaging



Sampling location as per GPS
(North 28.5999104 , East 77.3193728)



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APPENDIX B

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
2A. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	Nonylphenol NP, mixed isomers	Various (incl. 104-40-5, 11066-49-2, 25154-52-3, 84852-15-3)	5	0.4	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC/MS or LC/MS(-MS)) OPEO/NPEO: ISO18857-2 or ASTM D7065(LC/MS; GC/MS or LC/MSMS for n=1,2) APEO 1-18
	Octylphenol OP, mixed isomers	Various (incl. 140-66-9, 1806-26-4, 27193-28-8)	5	0.4	
	Octylphenol ethoxylates (OPEO)	Various (incl. 9002-93-1, 9036-19-5, 68987-90-6)	5	0.4	
	Nonylphenol ethoxylates (NPEO)	Various (inc. 9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0)	5	0.4	
2B. Chlorobenzenes and Chlorotoluenes	Monochlorobenzene	108-90-7	0.2	0.2	USEPA 8260B, 8270D. Dichloromethane extraction followed by GC/MS
	1,2-Dichlorobenzene	95-50-1	0.2	0.2	
	1,3-Dichlorobenzene	541-73-1	0.2	0.2	
	1,4-Dichlorobenzene	106-46-7	0.2	0.2	
	1,2,3-Trichlorobenzene	87-61-6	0.2	0.2	
	1,2,4-Trichlorobenzene	120-82-1	0.2	0.2	
	1,3,5-Trichlorobenzene	108-70-3	0.2	0.2	
	1,2,3,4-Tetrachlorobenzene	634-66-2	0.2	0.2	
	1,2,3,5-Tetrachlorobenzene	634-90-2	0.2	0.2	
	1,2,4,5-Tetrachlorobenzene	95-94-3	0.2	0.2	
	Pentachlorobenzene	608-93-5	0.2	0.2	
	Hexachlorobenzene	118-74-1	0.2	0.2	
	2-Chlorotoluene	95-49-8	0.2	0.2	
	3-Chlorotoluene	108-41-8	0.2	0.2	
	4-Chlorotoluene	106-43-4	0.2	0.2	
	2,3-Dichlorotoluene	32768-54-0	0.2	0.2	
	2,4-Dichlorotoluene	95-73-8	0.2	0.2	
	2,5-Dichlorotoluene	19398-61-9	0.2	0.2	
	2,6-Dichlorotoluene	118-69-4	0.2	0.2	
	3,4-Dichlorotoluene	95-75-0	0.2	0.2	
	3,5-Dichlorotoluene	25186-47-4	0.2	0.2	
	2,3,4-Trichlorotoluene	7359-72-0	0.2	0.2	
	2,3,6-Trichlorotoluene	2077-46-5	0.2	0.2	
	2,4,5-Trichlorotoluene	6639-30-1	0.2	0.2	
	2,4,6-Trichlorotoluene	23749-65-7	0.2	0.2	
	3,4,5-Trichlorotoluene	21472-86-6	0.2	0.2	
	2,3,4,5-Tetrachlorotoluene	76057-12-0	0.2	0.2	
	2,3,5,6-Tetrachlorotoluene	29733-70-8	0.2	0.2	
	2,3,4,6-Tetrachlorotoluene	875-40-1	0.2	0.2	
	Pentachlorotoluene	877-11-2	0.2	0.2	
2C. Chlorophenols	2-Chlorophenol	95-57-8	0.5	0.05	USEPA 8270 D Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC/MS
	3-Chlorophenol	108-43-0	0.5	0.05	
	4-Chlorophenol	106-48-9	0.5	0.05	
	2,3-Dichlorophenol	576-24-9	0.5	0.05	
	2,4-Dichlorophenol	120-83-2	0.5	0.05	
	2,5-Dichlorophenol	583-78-8	0.5	0.05	
	2,6-Dichlorophenol	87-65-0	0.5	0.05	
	3,4-Dichlorophenol	95-77-2	0.5	0.05	
	3,5-Dichlorophenol	591-35-5	0.5	0.05	
	2,3,4-Trichlorophenol	15950-66-0	0.5	0.05	
	2,3,5-Trichlorophenol	933-78-8	0.5	0.05	



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Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	2,3,6-Trichlorophenol	933-75-5	0.5	0.05	
	2,4,5-Trichlorophenol	95-95-4	0.5	0.05	
	2,4,6-Trichlorophenol	88-06-2	0.5	0.05	
	3,4,5-Trichlorophenol	609-19-8	0.5	0.05	
	2,3,4,5-Tetrachlorophenol	4901-51-3	0.5	0.05	
	2,3,4,6-Tetrachlorophenol	58-90-2	0.5	0.05	
	2,3,5,6-Tetrachlorophenol	935-95-5	0.5	0.05	
	Pentachlorophenol (PCP)	87-86-5	0.5	0.05	
2D. Dyes - Azo (Forming Restricted Amines)	4,4'-Methylene-bis-(2-chloro-aniline)	101-14-4	0.1	0.2	EN 14362. Reduction step with Sodiumdithionite, solvent extraction, GC/MS or LC/MS
	4,4'-methylenedianiline	101-77-9	0.1	0.2	
	4,4'-Oxydianiline	101-80-4	0.1	0.2	
	4-Chloroaniline	106-47-8	0.1	0.2	
	3,3'-Dimethoxybenzidine	119-90-4	0.1	0.2	
	3,3'-Dimethylbenzidine	119-93-7	0.1	0.2	
	6-methoxy-m-toluidine (p-Cresidine)	120-71-8	0.1	0.2	
	2,4,5-Trimethylaniline	137-17-7	0.1	0.2	
	4,4'-Thiodianiline	139-65-1	0.1	0.2	
	4-Aminoazobenzene	60-09-3	0.1	0.2	
	4-Methoxy-m-phenylenediamine	615-05-4	0.1	0.2	
	4,4'-Methylene-di-o-toluidine	838-88-0	0.1	0.2	
	2,6-Xylidine	87-62-7	0.1	0.2	
	o-Anisidine	90-04-0	0.1	0.2	
	2-Naphthylamine	91-59-8	0.1	0.2	
	3,3'-Dichlorobenzidine	91-94-1	0.1	0.2	
	4-Aminodiphenyl	92-67-1	0.1	0.2	
	Benzidine	92-87-5	0.1	0.2	
	o-Toluidine	95-53-4	0.1	0.2	
	2,4-Xylidine	95-68-1	0.1	0.2	
	4-Chloro-o-toluidine	95-69-2	0.1	0.2	
	4-Methyl-m-phenylenediamine	95-80-7	0.1	0.2	
	o-Aminoazotoluene	97-56-3	0.1	0.2	
	5-nitro-o-toluidine	99-55-8	0.1	0.2	
2E. Dyes-Carcinogenic or Equivalent Concern	C.I. Direct Black 38	1937-37-7	500	10	Liquid Extraction LC/MS
	C.I. Direct Blue 6	2602-46-2	500	10	
	C.I. Acid Red 26	3761-53-3	500	10	
	C.I. Basic Red 9	569-61-9	500	10	
	C.I. Direct Red 28	573-58-0	500	10	
	C.I. Basic Violet 14	632-99-5	500	10	
	C.I. Disperse Blue 1	2475-45-8	500	10	
	C.I. Disperse Blue 3	2475-46-9	500	10	
	C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5	500	10	
	C.I. Basic Green 4 (malachite green chloride)	569-64-2	500	10	
	C.I. Basic Green 4 (malachite green oxalate)	2437-29-8	500	10	
	C.I. Basic Green 4(malachite green)	10309-95-2	500	10	
	Disperse Orange 11	82-28-0	500	10	
	Disperse Yellow 1	119-15-3	50	10	
2F. Dyes-disperse (sensitizing)	Disperse Blue 102	12222-97-8	50	10	Liquid Extraction LC/MS
	Disperse Blue 106	12223-01-7	50	10	
	Disperse Yellow 39	12236-29-2	50	10	



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			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	Disperse Orange 37/59/76	13301-61-6	50	10	
	Disperse Brown 1	23355-64-8	50	10	
	Disperse Orange 1	2581-69-3	50	10	
	Disperse Yellow 3	2832-40-8	50	10	
	Disperse Red 11	2872-48-2	50	10	
	Disperse Red 1	2872-52-8	50	10	
	Disperse Red 17	3179-89-3	50	10	
	Disperse Blue 7	3179-90-6	50	10	
	Disperse Blue 26	3860-63-7	50	10	
	Disperse Yellow 49	54824-37-2	50	10	
	Disperse Blue 35	12222-75-2	50	10	
	Disperse Blue 124	61951-51-7	50	10	
	Disperse Yellow 9	6373-73-5	50	10	
	Disperse Orange 3	730-40-5	50	10	
	Disperse Blue 35	56524-77-7	50	10	
2G. Flame Retardants	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	5	1	ISO 22032, USEPA527 and USEPA8321B. Dichloromethane extraction GC/MS or LC/MS(-MS)
	Decabromodiphenyl ether (DecaBDE)	1163-19-5	5	1	
	Tris(2,3-dibromopropyl) phosphate (TRIS/TDBPP)	126-72-7	5	1	
	Pentabromodiphenyl ether (PentaBDE)	32534-81-9	5	1	
	Octabromodiphenyl ether (OctaBDE)	32536-52-0	5	1	
	Bis(2,3-dibromopropyl) phosphate (BIS/BDBPP)	5412-25-9	5	1	
	Tris(aziridinyl)-phosphineoxide (TEPA)	545-55-1	5	1	
	Polybromobiphenyls (PBBs)	59536-65-1	5	1	
	Tetrabromobisphenol A (TBBPA)	79-94-7	5	1	
	Hexabromocyclododecane (HBCDD)	3194-55-6	5	1	
	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	5	1	
	Tris(1,3-dichloroisopropyl) phosphate (TDCP)	13674-87-8	5	1	
	Short chain chlorinated paraffins (SCCPs) (C10-C13)	85535-84-8	5	1	
2H. Glycols	Bis(2-methoxyethyl)-ether	111-96-6	50	10	US EPA 8270 Liquid Extraction LC/MS
	2-ethoxyethanol	110-80-5	50	10	
	2-ethoxyethyl acetate	111-15-9	50	10	
	Ethylene glycol dimethyl ether	110-71-4	50	10	
	2-methoxyethanol	109-86-4	50	10	
	2-methoxyethylacetate	110-49-6	50	10	
	2-methoxypropylacetate	70657-70-4	50	10	
2I. Halogenated Solvents	Triethylene glycol dimethyl ether	112-49-2	50	10	USEPA 8260B Headspace GC/MS or Purgeand-Trap-GC/MS
	1,2-Dichloroethane	107-06-2	1	2	
	Methylene Chloride	75-09-2	1	2	
	Trichloroethylene	79-01-6	1	2	
2J. Organotin Compounds	Tetrachloroethylene	127-18-4	1	2	ISO 17353 Derivatisation with
	Mono-, di- and tri-methyltin derivatives	Multiple	0.01	0.2	



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Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	Mono-, di- and tri-butyltin derivatives	Multiple	0.01	0.2	NaB(C ₂ H ₅) GC/MS
	Mono-, di- and tri-phenyltin derivatives	Multiple	0.01	0.2	
	Mono-, di- and tri-octyltin derivatives	Multiple	0.01	0.2	
	Monomethyltin	Multiple	0.01	0.2	
	Dimethyltin	Multiple	0.01	0.2	
	Trimethyltin	Multiple	0.01	0.2	
	Monobutyltin	Multiple	0.01	0.2	
	Dibutyltin	Multiple	0.01	0.2	
	Tributyltin	Multiple	0.01	0.2	
	Monophenyltin	Multiple	0.01	0.2	
	Diphenyltin	Multiple	0.01	0.2	
	Triphenyltin	Multiple	0.01	0.2	
	Monooctyltin	Multiple	0.01	0.2	
	Dioctyltin	Multiple	0.01	0.2	
	Trioctyltin	Multiple	0.01	0.2	
2K. Perfluorinated and Polyfluorinated Chemicals (PFCs)	Perfluorooctanesulfonic acid (PFOS)	355-46-4, 432-50-7	0.01	0.10	DIN 38407-42 (modified) Ionic PFC: Concentration or direct injection, LC/MS(-MS); Non-ionic PFC (FTOH): derivatisation with acetic anhydride, followed by GC/MS
	Perfluoro-n-octanoic acid (PFOA)	335-67-1	0.01	0.10	
	Perfluorobutanesulfonic acid (PFBS)	29420-49-3, 29420-43-3	0.01	0.10	
	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	0.01	0.10	
	8:2 FTOH	678-39-7	1	1	
	6:2 FTOH	647-42-7	1	1	
2L. Phthalates (including all other esters of phthalic acid)	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	10	1	US EPA 8270D, ISO 18856 Dichloromethane extraction GC/MS
	Dimethoxyethyl phthalate (DMEP)	117-82-8	10	1	
	Di-n-octyl phthalate (DNOP)	117-84-0	10	1	
	Di-iso-decyl phthalate (DIDP)	26761-40-0	10	1	
	Di-iso-nonyl phthalate (DINP)	28553-12-0	10	1	
	Di-n-hexyl phthalate (DnHP)	84-75-3	10	1	
	Dibutyl phthalate (DBP)	84-74-2	10	1	
	Butyl benzyl phthalate (BBP)	85-68-7	10	1	
	Dinonyl phthalate (DNP)	84-76-4	10	1	
	Diethyl phthalate (DEP)	84-66-2	10	1	
	Di-n-propyl phthalate (DPRP)	131-16-8	10	1	
	Di-iso-butyl phthalate (DIBP)	84-69-5	10	1	
	Di-cyclohexyl phthalate (DCHP)	84-61-7	10	1	
	Di-iso-octyl phthalate (DIOP)	27554-26-3	10	1	
	1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4	10	1	
	1,2-benzenedicarboxylic acid, di-C6-8-branched	71888-89-6	10	1	



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Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	alkyl esters, C7-rich (DIHP)				
2M. Poly Aromatic Hydrocarbons (PaHs)	Benzo[a]pyrene (BaP)	50-32-8	1	1	DIN 38407-39 Solvent extraction GC/MS
	Anthracene	120-12-7	1	1	
	Pyrene	129-00-0	1	1	
	Benzo[ghi]perylene	191-24-2	1	1	
	Benzo[e]pyrene	192-97-2	1	1	
	Indeno[1,2,3-cd]pyrene	193-39-5	1	1	
	Benzo[j]fluoranthene	205-82-3	1	1	
	Benzo[b]fluoranthene	205-99-2	1	1	
	Fluoranthene	206-44-0	1	1	
	Benzo[k]fluoranthene	207-08-9	1	1	
	Acenaphthylene	208-96-8	1	1	
	Chrysene	218-01-9	1	1	
	Dibenz[a,h]anthracene	53-70-3	1	1	
	Benzo[a]anthracene	56-55-3	1	1	
	Acenaphthene	83-32-9	1	1	
	Phenanthrene	85-01-8	1	1	
	Fluorene	86-73-7	1	1	
	Naphthalene	91-20-3	1	1	
2N. Volatile Organic Compound (VOCs)	Benzene	71-43-2	1	0.1	ISO 11423-1 Headspace- or Purge-and-Trap-GC/MS
	Xylene	1330-20-7	1	0.1	
	o-cresol	95-48-7	1	0.1	
	p-cresol	106-44-5	1	0.1	
	m-cresol	108-39-4	1	0.1	
1A. Conventional Parameters	Temperature	—	N/A	N/A	Apply the standard methods that best apply to the region (ISO, EU, US, China), please refer to ZDHC Wastewater Guidelines for more details on the testing method and the levels (Foundational, Progressive, and Aspirational). Cyanide: With reference to APHA 4500 CN—B,C&E and followed by UV analysis
	TSS	—	N/A	N/A	
	COD	—	N/A	N/A	
	Total-N	—	N/A	N/A	
	pH	—	N/A	N/A	
	Color [m ⁻¹] (436nm; 525nm; 620nm)	—	N/A	N/A	
	BOD5	—	N/A	N/A	
	Ammonium-N	—	N/A	N/A	
	Total-P	—	N/A	N/A	
	AoX	—	N/A	N/A	
	Oil and Grease	—	N/A	N/A	
	Phenol	—	N/A	N/A	
	Coliform(bacteria/100ml)	—	N/A	N/A	
	Persistent Foam	—	Not visible	Not visible	
	Substance (Testing parameter)	CAS No.	Wastewater (mg/L) / (ppm)	Wastewater (mg/kg) / (ppm)	
	ANIONS				
	Cyanide(CN-)	Various (incl. 57-12-5)	0.02	0.5	
	Sulfide	—	N/A	N/A	
	Sulfite	—	N/A	N/A	
Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (mg/L) / (ppm)	Wastewater (mg/kg) / (ppm)	
1B. Conventional Parameters - METALS	Antimony(Sb)	7440-36-0	0.001	N/A	Various Acid Digestion with ICP analysis
	Chromium(Cr), total	7440-47-3	0.001	N/A	
	Cobalt(Co)	7440-48-4	0.001	N/A	
	Copper(Cu)	7440-50-8	0.001	N/A	



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Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	Nickel (Ni)	7440-02-0	0.001	N/A	please refer to ZDHC Wastewater Guidelines for more details on the testing method and the levels (Foundational, Progressive, and Aspirational).
	Silver (Ag)	7440-22-4	0.001	N/A	
	Zinc(Zn)	7440-66-6	0.001	N/A	
	Arsenic (As)	7440-38-2	0.001	1	
	Cadmium(Cd)	7440-43-9	0.0001	1	
	Chromium VI(CrVI)	18540-29-9	0.001	1	
	Lead(Pb)	7439-92-1	0.001	1	
	Mercury (Hg)	7439-97-6	0.00005	0.1	Cr(VI): Various Solvent extraction and derivatisation followed by UV analysis

Note / Key :

ppm = part(s) per million; ppb = part(s) per billion

U. S. EPA = United States Environmental Protection Agency

APHA = American Public Health Association



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APPENDIX C – Onsite Field Data Record Sheet

	FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)		CPSD-AN-00613-DATA 04
			Issue Date:
			Version No.: 14
			Business Line: Analytical

General Data

Laboratory Sample Number: R-9. Kunt and Ad.

Client Name: C-11 site ITT

Field Contact Person: Jurcy/Pur

Project (Facility Name and Address):

Sampling Location / Description:

Sample Identification: Zero discharge with sampling plan

Sample Type: Composite Sample / Grab sample (Please delete as appropriate)

Name of Sampler:

Discharge mode: Direct discharge to environment (Specify destination: River, Sea, Stream, ...) OR Indirect discharge to sewage treatment plant

Date of collection:

Factory Type: Dyeing / Printing / Washing / Finishing / Others (please specify):

*Note: It would be selected more than one

Field Data for Wastewater

Arrival Time: Before Treatment

Departure Time:

Field Parameters: pH: 7.9 Temp: 30.0 °C Color: 29 Flow rate: (volume/min)

Control No. of field equipment:

Factory with effluent treatment plant: Yes No

Sample matrix: Incoming water (if required) Wastewater before treatment Before Treatment Wastewater after treatment – water at discharge point

Sampler container number:

	1	2	3	4	5	6	7	8
Recording time	12:45	12:45	1:45	2:45	3:45	4:45		
ID								
Time	12:45	12:45	1:45	2:45	3:45	4:45		
pH:	7.9	8.0	8.0	7.9	8.0	08		
Temp (°C):	30.0	30.0	29.0	31.0	29.0	29		
Color (visual estimation):	10	11	11	11	11	11		
Flow rate (volume/time)	1.5	1.5	1.5	1.5	1.5	1.5		
Volume collected, mL	150	150	150	150	150	150		
Total volume collected	0.9 L							

Remark: Total volume collected must be greater than total of sample size required

Analysis Required and Preservation Method

Tests (ZDHC MRSL Parameters)	Test required (v)	Total of sample size	Type of container	Preservation method
1. Phthalate	✓	1000 mL total or 1000 mL each	Amber Glass washed with nitric acid.	Without adding acid Store sample at 2-8 °C
2. Chlorobenzenes, Chlorotoluene & PAH	✓			
3. SCCPs	✓			
4. APS	✓			
5. APEOs	✓	100 mL		
6. Chlorophenols & Cresole	✓	100 mL		
7. Flame retardant	✓	500 mL		
8. Dyes	✓	10 mL		
9. Glycol	✓	50 mL		
10. *Pesticides		1000 mL		
11. *Nitrosamine		10 mL		
12. Banned Azodyes	✓	2000 mL		
13. *Free primary aromatic amines		500 mL		
14. Organotin Compounds	✓	500 mL		
15. VOC & Halogenated Solvents (Remark 6)	✓	10 mL		
16. PFCs (Remark 6)	✓	2 mL	PE washed with pesticide grade Acetone	Fill to full container without air gap, acidify to pH 2 with HCl and store sample at 2-8 °C Without adding acid Store sample at 2-8 °C



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	FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)		CPSD-AN-00613-DATA 04
			Issue Date:
			Version No.: 14
			Business Line: Analytical

General Data

Laboratory Sample Number: R.S. Bained, Sub P. 17.
 Client Name: C.H. Sidie
 Field Contact Person: Samuel G. Nwaka
 Project (Facility Name and Address): G. Nwaka
 Sampling Location / Description: Zero discharge with sampling plan
 Sample Identification: Composite Sample / Grab sample (Please delete as appropriate)
 Sample Type: Direct discharge to environment (Specify destination: River, Sea, Stream,) OR Indirect discharge to sewage treatment plant
 Name of Sampler: 16/4/21
 Discharge mode: Dyeing / Printing / Washing / Finishing / Others (please specify):
 Date of collection: A/H Imbue.
 Factory Type: None

Field Data for Wastewater

Arrival Time:			Departure Time:						
Field Parameters	pH: <u>11.30 Am</u>	Temp: <u>29.0</u> °C	Color:	Flow rate: (volume/min)					
Control No. of field equipment									
Factory with effluent treatment plant:	Yes ☐ No ☒								
Sample matrix:	Incoming water (if required)								
	Wastewater before treatment								
	Wastewater after treatment - water at discharge point <u>After Treatment</u>								
Sampler container number									
Recording time	ID	1	2	3	4	5	6	7	8
	Time	11:35	12:35	1:35	2:35	3:35	4:35	5:35	
pH:		7.8	7.6	7.4	7.2	7.2	7.4	7.5	
Temp (°C):		29.0	30.0	30.0	31.0	30.0	29.0	29.0	
Color (visual estimation):		light	"	"	"	"	"	"	
Flow rate (volume/time)		150	150	150	150	150	150	150	
Volume collected, mL		150	150	150	150	150	150	150	
Total volume collected		10.54							

Analysis Required and Preservation Method

Tests (ZDHC MRSL Parameters)	Test required (v)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4)	1. Phthalate 2. Chlorobenzenes, Chlorotoluene & PAH 3. SCCPs 4. APS	1000 mL total or 1000 mL each	Amber Glass washed with nitric acid.	Without adding acid Store sample at 2-8 °C
5. APEOs		100 mL		
6. Chlorophenols & Cresols		100 mL		
7. Flame retardant		500 mL		
8. Dyes		10 mL		
9. Glycol		50 mL		
10. *Pesticides		1000 mL		
11. *Nitrosamine		10 mL		
12. Banned Azodyes		2000 mL		
13. *Free primary aromatic amines		500 mL		
14. Organotin Compounds		500 mL		
15. VOC & Halogenated Solvents (Remark 6)		10 mL		
16. PFCs (Remark 6)		2 mL	PE, washed with pesticide grade Acetone	Without adding acid Store sample at 2-8 °C



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FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)				CPSD-AN-00613-DATA 04	
				Issue Date:	
				Version No.: 14	
				Business Line: Analytical	
Tests (Conventional Parameters)	Test required (Y)	Total of sample size	Type of container	Preservation method	
Combined test or Individual test (Remark 4)	17. Total suspended solids (TSS) 18. Total dissolved solids (TDS)	2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid.	Without adding acid Store sample at 2-8 °C	
19. 5-day Biochemical Oxygen Demand (BOD5)		1000 mL			
20. Colour		100 mL			
21. Heavy Metals except Cr(VI) & Total-P (Remark 6)		9 mL	PE, washed with nitric acid	Acidify to pH 2 with HNO ₃ and store at 2-8 °C	
22. Cyanide		500 mL	Amber Glass, washed with pesticide grade acetone.	Adjust pH 12 with 50% NaOH, add 0.05 mL of 10% Na ₂ S ₂ O ₅ and store sample at 2-8 °C	
23. Cr(VI)		95 mL		Filter by 0.45µm filter in field, fill to full container without air gap, adjust pH to 9.0-9.5 by adding ammonium buffer. Store sample at 2-8 °C	
24. Chemical oxygen demand (COD)		150 mL	Amber Glass, washed with nitric acid	Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8 °C	
25. Phenols		500 mL			
26. Oil and Grease & Total Hydrocarbon		1000 mL			
27. Formaldehyde		25 mL		Fill to full container without air gap, acidify to pH 2 with H ₂ SO ₄ and store sample at 2-8 °C	
28. Sulfide (Remark 5)		50 mL	PE, washed with pesticide grade Acetone.	Fill to full container without air gap, add 2 drops of 2M zinc acetate, adjust pH to 9 with 6M NaOH Store sample at 2-8 °C	
29. Total Coliform (Remark 6)		125 mL	PE, clean, sterile, non-reactive	Add 0.05 mL of 10% Na ₂ CO ₃ Store sample at 2-8 °C	
30. Faecal Coliform (Remark 6)		125 mL			
31. Persistent foam		N.A.	Foam higher than 45 cm (visual estimation): Yes / No		
32. Sulfite		100 mL	Amber Glass, washed with pesticide grade acetone	Add 1mL of 2.5% EDTA, 0.5g zinc acetate Store sample at 2-8 °C	
33. Total-N		100 mL			
34. Ammonium-N		500 mL		Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8 °C	
35. Adsorbable organically bound halogens (AOX)		100 mL	Amber Glass washed with nitric acid		
36. Acute aquatic toxicity: Luminous Bacteria, Fish Egg, Daphne, Algae		1000 mL		Without adding acid Store sample at 2-8 °C	
37. Sulphate		100 mL			
38. Chloride		100 mL			
39. Others:					
Observation/ Remark:					

***Remarks:**

- Individual sampling can be performed upon request.
- The minimum sampling time for 2019 ZDHC guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
- Scope of ZDHC guideline: Parameter 1-9, 12, 14-17, 19-26, 28, 29, 31-35
Scope of synthetic leather industry: Parameter 1-9, 12, 14-21, 23-26, 28, 30, 31, 33, 34, 37, 38
Scope of MMCF: Parameter 5, 15, 17, 19-21, 23 - 26, 28, 33-36
Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guideline, they are tested upon request.
- Refer to CPSD-AN-G00019-STIP01, locations with those CPSD test capability inside TCD matrix can perform the combined test.
- Refer to CPSD-AN-000570-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.
- Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

Recorded by:

Shreej Joshi
Full name:

Date:

16/4/21

Comment from factory

Acknowledgement by factory

I hereby confirm that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in designated container(s) and without any observation of leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-6°C

Signature of Factory Representative:

Full Name:

Date:

16/4/21