



Test Report: (6623)131-0827

Report Date: May 25, 2023

Factory Company Name: ZHEJIANG BINKANG PRINTING AND DYEING CO LTD

Factory Address: No .6088 Xingbin Road, Ma'an Street, Keqiao District, Shaoxing City, Zhejiang Province, China

Sampling Method & Description:	I001) Untreated wastewater	Grab	Brown liquid
	I002) Effluent	-	Not tested
	I003) Sludge	Composite	Black solid
	I004) Leachate	Composite	Black liquid
	I005) Incoming water	Grab	Colorless liquid

Discharge Type: **Zero Liquid Discharge**

On-site ETP / Pretreatment: <Yes> Homogenization Tank & Holding Time: Yes, >12h

Discharge Destination: Others

Permit Validation Date: 2021-01-01 to 2025-12-31

Conventional, Anions & Heavy Metals Overall Category: Not applicable ZDHC MRSL Parameters: Detected

Sludge Parameters: Exceed ZDHC Threshold Value

Sample Pick Up Date: May 11, 2023 Sampler Number: C74D106818152

Test Period: May 11, 2023 to May 24, 2023

Parameter(s) exceeded maximum holding time / temperature: Not exceeded

Remark

The results of this report shall not be used for any regulatory compliance purposes.

Type of Process:	Textile	Average total industrial wastewater generated:	Equal or more than 15m3/day
Sludge Disposal Pathway:	Disposal Pathway A		

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Result Summary - ZDHC MRSL Wastewater Parameters

Test Items	Untreated wastewater	Effluent	Incoming water	
1A) AP and APEOs	ND	NR	NR	
1B) Anti-Microbials & Biocides	ND			
1C) Chlorinated Parafins	ND			
1D) Chlorobenzenes and Chlorotoluenes	ND			
1E) Chlorophenols	ND			
1F) DMFa	ND			
1G) Dyes - Carcinogenic or Equivalent Concern	ND			
1H) Dyes - Disperse (Sensitising)	ND			
1I) Dyes - Navy Blue Colourant	ND			
1J) Flame Retardants	ND			
1K) Glycols / Glycol Ethers	ND			
1L) Halogenated Solvents	ND			
1M) Organotin Compounds	ND			
1N) Other / Miscellaneous Chemicals	D			ND
1O) PFCs	ND			NR
1P) Phthalates	ND			
1Q) PAHs	ND			
1R) Restricted Aromatic Amines	ND			
1S) UV Absorbers	ND			
1T) VOC	ND			



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Result Summary - ZDHC Heavy Metals, Conventional and Anions Wastewater Parameters

Test Items	Untreated wastewater	Effluent	Incoming water
Antimony			
Chromium (VI)			
Barium			
Selenium			
Tin			
Arsenic			
Total Chromium			
Cobalt			
Cadmium			
Copper			
Lead			
Nickel			
Silver			
Zinc			
Mercury			
pH			
Temperature difference			
E.coli			
Colour	NR	NR	NR
Persistent Foam			
Wastewater Flowrate			
Ammonium-Nitrogen			
AOX			
BOD ₅			
COD			
DO			
Oil & Grease			
Total Phenols / Phenol Index			
Total Chlorine			
TDS			
Total Nitrogen			
Total Phosphorus			
TSS			
Chloride			
Cyanide, total			
Sulfate			
Sulfide			
Sulfite			



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Result Summary - ZDHC Sludge Parameters

Test Items	Sludge	Leachate
Antimony	D	Refer to result
Arsenic	D	NR
Barium	ND	NR
Cadmium	ND	NR
Coblat	ND	NR
Copper	ND	NR
Lead	D	Refer to result
Nickel	ND	NR
Selenium	ND	NR
Silver	ND	NR
Total Chromium	D	Refer to result
Zinc	D	NR
Chromium (VI)	ND	NR
Mercury	D	Refer to result
Cyanide	Refer to result	NR
pH	Refer to result	
% Solids	Refer to result	
Paint Filter Test	Refer to result	
Fecal Coliform	Refer to result	
AP and APEOs	ND	
PAHs	ND	
Chlorotoluenes	ND	

Note / Key:

Meet	=	Meet Foundational Limit / Meet Discharge Criteria
Not Meet	=	Exceed Foundational Limit / Exceed Discharge Criteria
NR	=	Not requested / Not required
NA	=	Not applicable
D	=	Detected
ND	=	Not detected
Refer to result	=	Legal parameter(s) and/or parameter(s) requested by factory, please refer to test result



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Test Result - ZDHC MRSL Parameters

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 [#] (mg/kg)	I004 [#] (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
1A) AP and APEOs: including all isomers								
NPEO	ND		ND					
NP, mixed isomers	ND	NR	ND	NR	NR	5	0.4	-
OPEO	ND		ND					
OP, mixed isomers	ND		ND					
1B) Anti-Microbials & Biocides								
o-Phenylphenol (+salts)	ND	NR	NR	NR	NR	100	-	-
Triclosan	ND							
Permethrin	ND							
1C) Chlorinated Parafins								
MCCPs (C14-C17)	ND	NR	NR	NR	NR	500	-	-
SCCPs (C10-C13)	ND					25		
1D) Chlorobenzenes and Chlorotoluenes								
1,2-dichlorobenzene	ND	NR	NR	NR	NR	0.2	-	-
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- chlorobenzene	ND		NR					
Other isomers of mono-, di-, tri-, tetra- and penta- chlorotoluene	ND		ND				0.2	
1E) Chlorophenols								
2-chlorophenol	ND	NR	NR	NR	NR	0.5	-	-
3-chlorophenol	ND							
4-chlorophenol	ND							
2,3-dichlorophenol	ND							
2,4-dichlorophenol	ND							
2,5-dichlorophenol	ND							
2,6-dichlorophenol	ND							
3,4-dichlorophenol	ND							
3,5-dichlorophenol	ND							
2,3,4-trichlorophenol	ND							
2,3,5-trichlorophenol	ND							
2,3,6-trichlorophenol	ND							
2,4,5-trichlorophenol	ND							
2,4,6-trichlorophenol	ND							
3,4,5-trichlorophenol	ND							
2,3,5,6-tetrachlorophenol	ND							
2,3,4,6-tetrachlorophenol	ND							
2,3,4,5-tetrachlorophenol	ND							
Pentachlorophenol (PCP)	ND							
1F) N,N-di-methylformamide (DMFa)								
Dimethyl formamide; N,N-dimethylformamide (DMFa) ^a	ND	NR	NR	NR	NR	1000	-	-

a = Report only for mock leather

#Limit refers to the chosen ZDHC sludge disposal pathway in Table 4 in accordance with the ZDHC Wastewater Guidelines.



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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001	I002	I003 [#]	I004 [#]	I005	Wastewater	Sludge [#]	Leachate [#]
	(µg/L)	(µg/L)	(mg/kg)	(mg/L)	(µg/L)	(µg/L)	(mg/kg)	-
1G) Dyes - Carcinogenic or Equivalent Concern								
Basic violet 3 with >0.1% of Michler's Ketone	ND							
C.I. Acid Red 26	ND							
C.I. Acid Violet 49	ND							
C.I. Basic Blue 26 (with Michler's Ketone >0/1%)	ND							
C.I. Basic Green 4 (Malachite Green Chloride)	ND							
C.I. Basic Green 4 (Malachite Green Oxalate)	ND							
C.I. Basic Green 4 (Malachite Green)	ND							
C.I. Basic Red 9	ND	NR	NR	NR	NR	500	-	-
C.I. Basic Violet 14	ND							
C.I. Direct Black 38	ND							
C.I. Direct Blue 6	ND							
C.I. Direct Red 28	ND							
C.I. Disperse Blue 1	ND							
C.I. Disperse Blue 3	ND							
Disperse Orange 11	ND							
1H) Dyes - Disperse (Allergenic)								
Disperse Blue 102	ND							
Disperse Blue 106	ND							
Disperse Blue 124	ND							
Disperse Blue 26	ND							
Disperse Blue 35 (CAS 12222-75-2)	ND							
Disperse Blue 35 (CAS 56524-77-7)	ND							
Disperse Blue 7	ND							
Disperse Brown 1	ND							
Disperse Orange 1	ND							
Disperse Orange 3	ND	NR	NR	NR	NR	50	-	-
Disperse Orange 37/59/76	ND							
Disperse Red 1	ND							
Disperse Red 11	ND							
Disperse Red 17	ND							
Disperse Yellow 1	ND							
Disperse Yellow 3	ND							
Disperse Yellow 39	ND							
Disperse Yellow 49	ND							
Disperse Yellow 9	ND							
1I) Dyes - Navy Blue Colourant								
Component 1: C39H23Cl-CrN7O12S 2Na	ND	NR	NR	NR	NR	500	-	-
Component 2: C46H-30CrN10O20S2 3Na	ND							

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001	I002	I003 [#]	I004 [#]	I005	Wastewater	Sludge [#]	Leachate [#]
	(µg/L)	(µg/L)	(mg/kg)	(mg/L)	(µg/L)	(µg/L)	(mg/kg)	-
1J) Flame Retardants								
2,2-bis(bromomethyl)-1,3-propanediol (BBMP)	ND							
Dis(2,3-dibromopropyl) phosphate (BIS)	ND							
Decabromophenyl ether (DecaBDE)	ND							
Hexabromocyclodecane (HBCDD)	ND							
Octabromodiphenyl ether (OctaBDE)	ND							
Pentabromodiphenyl ether (PentaBDE)	ND							
Polybromobiphenyls (PBB)	ND							
Tetrabromobisphenol A (TBBPA)	ND							
Tris-(2-chloro-1-methylethyl) phosphate (TCPP)	ND							
Tris(1-aziridinyl)phosphone oxide (TEPA)	ND							
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	ND							
Tris(2-chloroethyl) phosphate (TCEP)	ND							
Tris(2,3-dibromopropyl) phosphate (TRIS)	ND					25		
Decabromobiphenyl (DecaBB)	ND							
Dibromobiphenyls (DiBB)	ND	NR	NR	NR	NR		-	-
Octabromobiphenyls (OctaBB)	ND							
Dibromopropylether	ND							
Heptabromodiphenyl ether (HeptaBDE)	ND							
Hexabromodiphenyl ether (HexaBDE)	ND							
Monobromobiphenyls (MonoBB)	ND							
Monobromodiphenylethers (MonoBDEs)	ND							
Nonabromobiphenyls (NonaBB)	ND							
Nonabromodiphenyl ether (NonaBDE)	ND							
Tetrabromodiphenyl ether (TetraBDE)	ND							
Tribromodiphenylethers (TriBDEs)	ND							
Boric acid ^b	ND							
Diboron trioxide ^b	ND							
Disodium octaborate ^b	ND					100		
Disodium tetraborate anhydrous ^b	ND							
Tetraboron disodium heptaoxide, hydrate ^b	ND							
1K) Glycols / Glycol Ethers								
2-ethoxyethanol	ND							
2-ethoxyethyl acetate	ND							
2-methoxyethanol	ND							
2-methoxyethylacetate	ND	NR	NR	NR	NR	50	-	-
2-methoxypropylacetate	ND							
Bis(2-methoxyethyl)-ether	ND							
Ethylene glycol dimethyl ether	ND							
Triethylene glycol dimethyl ether	ND							
1L) Halogenated Solvents								
1,2-dichloroethane	ND							
Methylene chloride	ND	NR	NR	NR	NR	1	-	-
Tetrachloroethylene	ND							
Trichloroethylene	ND							

b = Limit refers to elemental boron, not the salt.

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 [#] (mg/kg)	I004 [#] (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
1M) Organotin Compounds								
Dipropyltin compounds (DPT)	ND							
Mono, di-, and tri-butyltin derivatives	ND							
Mono, di-, and tri-methyltin derivatives	ND							
Mono, di-, and tri-octyltin derivatives	ND							
Mono, di-, and tri-phenyltin derivatives	ND	NR	NR	NR	NR	0.01	-	-
Tetrabutyltin compounds (TeBT)	ND							
Tripropyltin compounds (TPT)	ND							
Tetraoctyltin compounds (TeOT)	ND							
Tricyclohexyltin (TCyHT)	ND							
Tetraethyltin compounds (TeET)	ND							
1N) Other / Miscellaneous Chemicals								
AEEA [2-(2-aminoethylamino)ethanol]	ND				NR	500		
Bisphenol A	ND				NR	10		
Thiourea	ND	NR	NR	NR	NR	50	-	-
Quinoline	241.77				ND			
Borate, zinc salt ^c	ND				NR	100		
Silica (used in sand blasting) ^d	NR				NR	-		
1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)								
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	ND	NR	NR	NR	NR	0.01	-	-
Perfluorooctanoic acid (PFOA) related substances	ND					1		
1P) Phthalates - including all other esters of ortho-phthalic acid								
1,2-benzenedicarboxylic acid, di-C6-8 branched and linear alkyl esters, C7-rich (DIHP)	ND							
1,2-benzenedicarboxylic acid, di-C7-11 branched and linear alkyl esters (DHNU)	ND							
Bis(2-methoxyethyl)phthalate (DMEP)	ND							
Butyl benzyl phthalate (BBP)	ND							
Di-cyclohexyl phthalate (DCHP)	ND							
Di-iso-decyl phthalate (DIDP)	ND							
Di-iso-octyl phthalate (DIOP)	ND							
Di-iso-butyl phthalate (DIBP)	ND	NR	NR	NR	NR	10	-	-
Di-iso-nonyl phthalate (DINP)	ND							
Di-n-hexyl phthalate (DnHP)	ND							
Di-n-octyl phthalate (DNOP)	ND							
Di-n-pentylphthalates	ND							
Di-n-propyl phthalate (DPRP)	ND							
Di(ethylhexyl) phthalate (DEHP)	ND							
Dibutyl phthalate (DBP)	ND							
Diethyl phthalate (DEP)	ND							
Diisopentylphthalates	ND							
Dinonyl phthalate (DNP)	ND							

c = Limit refers to elemental boron and/or zinc, not the salt.

d = Not a ZDHC wastewater parameter, and not required to test this parameter as this is related to sand blasting

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 [#] (mg/kg)	I004 [#] (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
1Q) Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	ND		ND					
Acenaphthylene	ND		ND					
Anthracene	ND		ND					
Benzo[a]anthracene	ND		ND					
Benzo[a]pyrene (BaP)	ND		ND					
Benzo[b]fluoranthene	ND		ND					
Benzo[e]pyrene	ND		ND					
Benzo[ghi]perylene	ND		ND					
Benzo[j]fluoranthene	ND	NR	ND	NR	NR	1	0.2	-
Benzo[k]fluoranthene	ND		ND					
Chrysene	ND		ND					
Dibenz[a,h]anthracene	ND		ND					
Fluoranthene	ND		ND					
Fluorene	ND		ND					
Indeno[1,2,3-cd]pyrene	ND		ND					
Naphthalene	ND		ND					
Phenanthrene	ND		ND					
Pyrene	ND		ND					
1R) Restricted Aromatic Amines (Cleavable from Azo-colourants)								
2-naphthylamine	ND							
2-naphthylammoniumacetate	ND							
2,4-xylidine	ND							
2,4,5-trimethylaniline	ND							
2,4,5-trimethylaniline hydrochloride	ND							
2,6-xylidine	ND							
3,3'-dichlorobenzidine	ND							
3,3-dimethoxybenzidine	ND							
3,3-dimethylbenzidine	ND							
4-aminoazobenzene	ND							
4-aminodiphenyl	ND							
4-chloro-o-toluidine	ND							
4-chloro-o-toluidinium chloride	ND							
4-chloroaniline	ND							
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	ND	NR	NR	NR	NR	0.1	-	-
4-methoxy-m-phenylenediamine	ND							
4-methyl-m-phenylenediamine	ND							
4,4-methylene-bis-(2-chloro-aniline)	ND							
4,4-methylenedi-o-toluidine	ND							
4,4-methylenedianiline	ND							
4,4-oxydianiline	ND							
4,4-thiodianiline	ND							
5-nitro-o-toluidine	ND							
6-methoxy-m-toluidine	ND							
Benzidine	ND							
o-aminoazotoluene	ND							
o-anisidine	ND							
o-toluidine	ND							

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Test Result - ZDHC MRSL Parameters (continued)

Test Parameters	Results of Test Items					Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 [#] (mg/kg)	I004 [#] (mg/L)	I005 (µg/L)	Wastewater (µg/L)	Sludge [#] (mg/kg)	Leachate [#] -
1S) UV Absorbers								
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	ND							
2-(2H-benzotriazol-2-yl)-4,6- ditertpentylphenol (UV-328)	ND	NR	NR	NR	NR	100	-	-
2-benzotriazol-2-yl-4,6-di-tert- butylphenol (UV-320)	ND							
2,4-Di-tert-butyl-6-(5- chlorobenzotriazole-2-yl) phenol (UV-327)	ND							
	ND							
1T) Volatile Organic Compounds (VOC)								
Benzene	ND	NR	NR	NR	NR	1	-	-
m-cresol	ND							
o-cresol	ND							
p-cresol	ND							
Xylene	ND							
Toluene ^a	ND							

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Test Result - ZDHC Heavy Metals Parameters

Test Parameters	Unit			Results of Test Items					Requirements [Textile]				
	Wastewater	Sludge	Leachate	I001	I002	I003#	I004#	I005	Wastewater				Sludge
									Foundational	Progressive	Aspirational	Discharge Limit	Sludge Threshold Values
ZDHC Heavy Metals													
Antimony	mg/L	mg/kg	mg/L	NR	NR	89	0.045	NR	0.1	0.05	0.01	-	12
Chromium (VI)	mg/L	mg/kg	mg/L			ND	NR		0.05	0.005	0.001	-	50
Barium	mg/L	mg/kg	mg/L			ND	NR		Sample & Report			-	700
Selenium	mg/L	mg/kg	mg/L			ND	NR		-	-	-	-	10
Tin	mg/L	-	-			NR	NR		-	-	-	-	-
Arsenic	mg/L	mg/kg	mg/L			8	NR		0.05	0.01	0.005	-	10
Total Chromium	mg/L	mg/kg	mg/L			323	0.328		0.2	0.1	0.05	-	100
Cobalt	mg/L	mg/kg	mg/L			ND	NR		0.05	0.02	0.01	-	1600
Cadmium	mg/L	mg/kg	mg/L			ND	NR		0.1	0.05	0.01	-	3
Copper	mg/L	mg/kg	mg/L			ND	NR		1	0.5	0.25	-	200
Lead	mg/L	mg/kg	mg/L			24	0.029		0.1	0.05	0.01	-	10
Nickel	mg/L	mg/kg	mg/L			ND	NR		0.2	0.1	0.05	-	70
Silver	mg/L	mg/kg	mg/L			ND	NR		0.1	0.05	0.005	-	100
Zinc	mg/L	mg/kg	mg/L			548	NR		5	1	0.5	-	1000
Mercury	mg/L	mg/kg	mg/L	4.22	ND	0.01	0.005	0.001	-	1			

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Test Result - ZDHC Conventional and Anions Parameters

Test Parameters	Unit			Results of Test Items					Requirements [Textile]					
	Wastewater	Sludge	Leachate	I001	I002	I003#	I004#	I005	Wastewater			Sludge		
									Foundational	Progressive	Aspirational	Discharge Limit	Sludge Threshold Values	
ZDHC Conventional														
pH	pH					5.05				6 - 9				
Temparture difference	Δ °C									15	10	5		
E.coli	MPN/100-ml									126				
Colour (436 nm)	m ⁻¹									7	5	2		
Colour (525 nm)	m ⁻¹									5	3	1		
Colour (620 nm)	m ⁻¹									3	2	1		
Persistent Foam	-									No indication of Persistent Foam				
Wastewater Flowrate	m ³ /day									-				
Ammonium-Nitrogen	mg/L									10	1	0.5		
AOX	mg/L									3	0.5	0.1		
BOD ₅	mg/L	-				NR				30	15	8		
COD	mg/L			NR	NR		NR	NR		150	80	40		
DO	mg/L									Sample & Report				
Oil & Grease	mg/L									10	2	0.5		
Total Phenols / Phenol Index	mg/L									0.5	0.01	0.001		
Total Chlorine	mg/L									Sample & Report				
TDS	mg/L									20	10	5		
Total Nitrogen	mg/L									3	0.5	0.1		
Total Phosphorus	mg/L									50	15	5		
TSS	mg/L									-				
% Solids	-	%				84.5				-				
Paint Filter Test	-	-				Pass				-				
Fecal Coliform	-	MPN/g				ND				-				
ZDHC Anions														
Chloride	mg/L	-	-			NR				Sample & Report				
Cyanide, total	mg/L	mg/kg	-			ND				0.2	0.1	0.05		
Sulfate	mg/L			NR	NR		NR	NR		Sample & Report				
Sulfide	mg/L	-	-			NR				0.5	0.05	0.01		
Sulfite	mg/L									2	0.5	0.2		

#Limit refers to the chosen ZDHC sludge disposal pathway in Table 4 in accordance with the ZDHC Wastewater Guidelines.



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Appendix A - Discharge limit according to regulation / contract limit with CETP

当前位置: 水污染物排放信息审核

1、废水污染物排放许可限值

(1) 主要排放口

排放口编号	排放口名称	污染物种类	许可排放浓度限值 (mg/L)
DW001		可吸附有机卤化物	12
DW001		悬浮物	100
DW001		氨氮 (NH ₃ -N)	20mg/L
DW001		总氮 (以N计)	30mg/L
DW001		化学需氧量	500mg/L
DW001		总磷 (以P计)	1.5
DW001		苯胺类	1.0
DW001		流量	/
DW001		二氧化氯	0.5
DW001		五日生化需氧量	150
DW001		pH值	6-9
DW001		色度	80
DW001		镉	0.1
DW001		硫化物	0.5
DW002		六价铬	0.5
主要排放口合计			CODcr
			氨氮
			总氮 (以N计)



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Appendix B - Sample Photos

I001) Sampling point
<N 30°13'59.93";E 120°42'34.80" >



I001) Sampling location surrounding
<N 30°13'59.93";E 120°42'34.80" >



I001) Labelled sample bottles



I001) Sample for phthalate test



I001) Sample packaging



I003) Sampling point
<N 30°14'0.39";E 120°42'35.43" >



I003) Sampling location surrounding
<N 30°14'0.39";E 120°42'35.43" >



I003) Labelled sample bottles



I003) Sample packaging





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Appendix B - Sample Photos (continued)

I005) Sampling point

<N 30°13'53.86";E 120°42'42.18" >



I005) Sampling location surrounding

<N 30°13'53.86";E 120°42'42.18" >



I005) Labelled sample bottles



I005) pH measurement



I005) Sample packaging





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Appendix C - On-site Field Data Record Sheet

	FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)	CPSD-AN-00613-DATA 04 Issue Date: _____ Version No.: 17 Business Line: Analytical
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General Data

Laboratory Sample Number: 66231310827

Client Name: _____

Field Contact Person: 朱国铭 Phone No: 13867106279

Project (Facility Name and Address): 浙江安泰印务有限公司 / 浙江绍兴柯桥与轻纺街道天缘路6088号

Sampling Location / Description: 进水管排口 / 灰色透明

Sample Identification: GTW 2.1

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

Name of Sampler: 朱国铭

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

Date of collection: 2023.05.11

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

*Note: It would be selected more than one

Field Data for Wastewater		Arrival Time:	Departure Time:
Field Parameters	pH: <u>8.5</u>	<u>10:20</u>	<u>13:25</u>
Control No. of field equipment	<u>CA-002K</u>	Temp: <u>20.9</u> °C	Color: <u>无色</u>
Factory with effluent treatment plant:	<input checked="" type="checkbox"/> Yes	Flow rate: / (volume/min)	No
Sample matrix:	<input checked="" type="checkbox"/> Incoming water (if required) <input type="checkbox"/> Wastewater before treatment <input type="checkbox"/> Wastewater after treatment - water at discharge point		
Sampler container number	<u>A1</u>		
Recording time	ID	1	2
	Time	<u>11:34</u>	<u>11:51</u>
pH:	<u>8.5</u>		
Temp (°C):	<u>20.9</u>		
Color (visual estimation):	<u>无色</u>		
Flow rate (volume/time)			
Volume collected, mL	<u>48L</u>		
Total volume collected	<u>48L</u>		

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

Analysis Required and Preservation Method				
Tests (ZDHC MRSL Parameters)	Test required (y)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4)	1. Phthalate	✓	1000 mL total or 1000 mL each	Amber Glass, washed with nitric acid.
	2. Chlorobenzenes, Chlorotoluene & PAH	✓		
	3. SCCPs	✓		
	4. APS	✓		
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. UV absorbers	✓	100		
16. BPA	✓	2		
17. Preservatives	✓	52		
18. VOC & Halogenated Solvents (Remark 6)	✓	10 mL		
19. PFCs (Remark 6)	✓	2 mL	PE, washed with pesticide grade Acetone	

Without adding acid
Store sample at 2-8°C

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



Test Report: (6623)131-0827

Report Date: May 25, 2023

Appendix C - On-site Field Data Record Sheet (continued)

Tests (Conventional Parameters)	Test required (Y)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4) 20. Total suspended solids (TSS) 21. 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
22. 5-day Biochemical Oxygen Demand (BOD5)		1000 mL		
23. Colour		100 mL		
24. 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
25. Cyanide	✓	500 mL	Amber Glass, washed with pesticide grade acetone	Adjust pH 12 with 50% NaOH; add 0.05 ml of 10% H ₂ O ₂ and store sample at 2-8°C
26. Cr(VI)	✓	95 mL	Amber Glass, washed with nitric acid	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
27. Chemical oxygen demand (COD)		150 mL		Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8°C
28. Phenols		500 mL		
29. Oil and Grease & Total Hydrocarbon		1000 mL		
30. 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
31. 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
32. E.coli (Remark 6)		125 mL	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% Na ₂ SO ₃ ; keep in dark Store sample at 2-8°C
33. Persistent foam		N.A.	Foam higher than 45 cm (visual estimation): Yes / No	
34. Sulfite		100 mL	Amber Glass, washed with pesticide grade acetone	Add 1ml of 2.5% EDTA Store sample at 2-8°C
35. Total-N		100 mL	Amber Glass, washed with nitric acid;	Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8°C
36. Ammonium-N		500 mL		Acidify to pH 2 with HNO ₃ and store at 2-8°C
37. Adsorbable organically bound halogens (AOX)		100 mL		
38. Acute aquatic toxicity: Luminus Bacteria, Fish Egg, Daphne, Algae;		1000 mL		
39. Sulphate		100 mL		Without adding acid Store sample at 2-8°C
40. Chloride		100 mL		
41. Conductivity		100 mL		
42. Dissolved oxygen (DO)		N.A.	measure in field	
43. Total Chlorine		N.A.		
44. Others:				

- *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, 14-29, 31-37, 39-43
Scope of synthetic leather industry: Parameter 1-9, 12, 14-24, 26-29, 31-33, 35, 36, 39, 40
Scope of MMCF: Parameter 5, 18, 20, 22-24, 26-29, 31, 35-38
 - 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-STP01, 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: 张波 Date: 2023.5.11

Comment from factory: 进水 E: 120°42'42.18" N: 30°13'53.86"

Acknowledgement by factory
I hereby confirmed 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 in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-4°C

Signature of Factory Representative: [Signature] Date: 2023.5.11





Test Report: (6623)131-0827

Report Date: May 25, 2023

Appendix C - On-site Field Data Record Sheet (continued)

	FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)	CPSD-AN-00613-DATA 04 Issue Date: _____ Version No.: 17 Business Line: Analytical
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General Data

Laboratory Sample Number: 66231310827

Client Name: _____

Field Contact Person: _____ Phone No: 13867106279

Project (Facility Name and Address): 浙江康康印染有限公司 / 浙江绍兴柯桥中国轻纺城天淡路6088号

Sampling Location / Description: 污水处理站 / 污水处理站

Sample Identification: GTW 2.1

Sample Type: Composite Sample / Grab sample (Please delete as appropriate) 处理前集水池 2000m³, 日排放量 4000m³

Name of Sampler: 张波

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

Date of collection: 2023.05.11

Factory Type: 纺织印染

Dyeing / Finishing / Washing / Finishing / Others (please specify): 染色

*Note: It would be selected more than one

Field Data for Wastewater

Arrival Time:	<u>10:20</u>	Departure Time:	<u>13:25</u>						
Field Parameters	pH: <u>8.6</u>	Temp: <u>33.7</u> °C	Color: <u>棕色</u>						
Control No. of field equipment	<u>CA-002K</u>	<u>CA-002K</u>	Flow rate: / (volume/min)						
Factory with effluent treatment plant:	No								
Sample matrix:	<input checked="" type="checkbox"/> Incoming water (if required)								
	<input type="checkbox"/> Wastewater before treatment								
	<input type="checkbox"/> Wastewater after treatment – water at discharge point								
Sampler container number	<u>A2</u>								
Recording time	ID	1	2	3	4	5	6	7	8
	Time	<u>10:54</u>							
pH:	<u>8.6</u>								
Temp (°C):	<u>33.7</u>								
Color (visual estimation):	<u>棕色</u>								
Flow rate (volume/time):	<u>时排量 > 15m³</u>								
Volume collected, mL:	<u>68L</u>								
Total volume collected	<u>68L</u>								

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

Analysis Required and Preservation Method

Tests (ZDHC MRSI Parameters)	Test required (Y)	Total of sample size	Type of container	Preservation method	
Combined test or Individual test (Remark 4)	1. Phthalate	✓	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 & 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. UV absorbers	✓	100			
16. BPA	✓	2			
17. Preservatives	✓	52			
18. VOC & Halogenated Solvents (Remark 6)	✓	10 mL			Fill to full container without air gap; acidify to pH 2 with HCl and store sample at 2-8°C.
19. PFCS (Remark 6)	✓	2 mL			PE, washed with pesticide grade Acetone



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Appendix C - On-site Field Data Record Sheet (continued)

Tests (Conventional Parameters)	Test required (v)	Total of sample size	Type of container	Preservation method
Combined test or Individual test (Remark 4) 20. Total suspended solids (TSS) 21. 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
22. 5-day Biochemical Oxygen Demand (BOD5)		1000 mL		
23. Colour	✓	100 mL		
24. 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
25. 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 ₃ and store sample at 2-8°C
26. Cr(VI)	✓	95 mL		Filter by 0.45µm filter in field, fill to full container without air gap, adjust pH to 8.0-8.5 by adding ammonium buffer. Store sample at 2-8°C
27. Chemical oxygen demand (COD)		150 mL		
28. Phenols		500 mL	Amber Glass, washed with nitric acid	Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8°C
29. Oil and Grease & Total Hydrocarbon		1000 mL		
30. 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
31. 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
32. E.coli (Remark 6)		125 mL	PE, clean, sterile, non-reactive	Add 0.1 ml of 10% Na ₂ S ₂ O ₃ keep in dark. Store sample at 2-8°C
33. Persistent foam		N.A.	Foam higher than 45 cm (visual estimation): Yes / No	
34. Sulfite		100 mL	Amber Glass, washed with pesticide grade acetone	Add 1ml of 3.5% EDTA Store sample at 2-8°C
35. Total-N		100 mL		Acidify to pH 2 with H ₂ SO ₄ Store sample at 2-8°C
36. Ammonium-N		500 mL		Acidify to pH 2 with HNO ₃ and store at 2-8°C
37. Adsorbable organically bound halogens (AOX)		100 mL		Acidify to pH 2 with HNO ₃ and store at 2-8°C
38. Acute aquatic toxicity: Lumines Bacteria; Fish Egg; Daphne; Algae;		1000 mL	Amber Glass, washed with nitric acid.	
39. Sulphate		100 mL		Without adding acid Store sample at 2-8°C
40. Chloride		100 mL		
41. Conductivity		100 mL		
42. Dissolved oxygen (DO)		N.A.		measure in field
43. Total Chlorine		N.A.		measure in field
44. Others:				

Observation/ Remark: 处理设施只处理生活污水, 处理后全部回用最终的外排渠道是随重废水不做处理排到污水处理厂
生活污水处理时有污泥产生

- *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, 14-29, 31-37, 39-43
Scope of synthetic leather industry: Parameter 1-9, 12, 14-24, 26-29, 31-33, 35, 36, 39, 40
Scope of MMCF: Parameter 5, 18, 20, 22-24, 26-29, 31, 35-38
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-STP01, 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: 张俊
Date: 2023.05.11

Comment from factory: 外排口 E: 120°42'34.80" N: 30°13'59.93"

Acknowledgement by factory
I hereby confirmed 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 in 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: 李国强
Date: 2023.5.11



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Appendix C - On-site Field Data Record Sheet (continued)

Field Data for Sludge								
Arrival Time:	10:20			Departure Time: 13:25				
Field Parameters	pH:	Temp:	°C	Flow rate (volume/time) / sludge flux (weight/time):				
Control No. of field equipment:				黑色固体				
Recording time	ID	A24						
	Time	11:28						
pH:								
Temp (°C):								
Flow rate (volume/time) / sludge flux (weight/time)								
Volume collected, mL								
Total volume collected	Remark: Total volume collected must be greater than total of sample size required							

现场无零浓度检出

Analysis Required and Preservation Method					
Factory with effluent treatment plant			No		
Sample matrix	Sludge in clarifier (sedimentation tank)				
Sampler container number					
Recording time					
Tests (MRSL Parameter)	Test required (v)	Total of sample size	Preservation method		
Combined test or individual test (Remark 3)	1. Phthalate	10g total or 10g each	Amber Glass, washed with nitric acid		
	2. Chlorobenzenes, Chlorotoluene & PAHs				
	3. SCCPs				
	4. APS				
5. APEOs	✓	20 g		Add 0.2 mL of 10% Na ₂ S ₂ O ₃ (0.008% W/W). Store sample at 4°C	
6. Flame retardant	✓	10 g			
7. Dyes	✓	10 g			
8. Glycols	✓	100 g			
9. *Pesticides		20g			
10. Banned Azodyes	✓	20 g			
11. *Free primary aromatic amines		10 g			
12. Chlorophenols & Cresols	✓	20 g			Acidify to -pH 2 with H ₂ SO ₄ . Add 0.02 mL of 10% Na ₂ S ₂ O ₃ (0.008% W/W). Store sample at 4°C
13. Organotin Compounds	✓	10 g			Fill to full container without any air gap and acid add and store at 4°C
14. VOC & Halogenated Solvents (Remark 5)	✓	10 g			Fill to full bottle without any air gap. Acidify to -pH 2 with HCl. Store sample at 4°C
15. PFCs (Remark 5)	✓	10 g			PE, wash with pesticide grade acetone. Add 0.02 mL of 10% Na ₂ S ₂ O ₃ (0.008% W/W). Store sample at 4°C
Tests (Conventional Parameters)	Test required (v)	Total of sample size	Preservation method		
16. Heavy Metals except Cr(VI) (Remark 5)	✓	0.2 g	PE, wash with nitric acid. Acidify to -pH 2 with HNO ₃ . Store sample at 4°C		
17. Cr(VI)	✓	2.5 g	Amber Glass, wash with nitric acid. Fill to full container without any air gap and acid add and store at 4°C		
18. Adsorbable organically bound halogens (AOX)		1 g			
19. Extractable organohalides (EOX)		20 g			
20. Total organic carbon (TOC)		20 g			
21. Cyanide		50 g	Amber Glass, wash with pesticide grade acetone. Adjust pH to 12-13 with 50% NaOH and store at 4°C		
22. Faecal Coliform		20 g	PE, clean, sterile, non-reactive. Add 0.1 ml of 10% Na ₂ S ₂ O ₃ keep in dark. Store sample at 2-5°C		
23. % Solids		20 g	Amber Glass, wash with nitric acid. Acidify to -pH 2 with HNO ₃		



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Appendix C - On-site Field Data Record Sheet (continued)

24. Paint Filler Test		20 g		Store sample at 4°C
25. Others				
Observation/ Remark:	31/E E: 120° 42' 35.43" N: 30° 14' 0.39"			

- *Remarks:
1. Individual sampling can be performed upon request
 2. 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.
 3. Scope of ZDHC guideline: Parameter 1, 2, 4, 5, 16-17, 21-24
 Scope of synthetic leather industry: Parameter 1-8, 10, 12-17
 Scope of MMCF: Parameter 16, 18-20
 Free primary aromatic amine and pesticides are not in the scope of ZDHC Guideline, they are tested upon request.
 4. Refer to CPSD-AN-G00019-STIP01, locations with those CPSD test capability inside TCD matrix can perform the combined test.
 5. Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.



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Report Date: May 25, 2023

Appendix D - Test methods, reporting limits and CAS numbers

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1A) AP and APEOs: including all isomers						
Nonylphenol ethoxylates (NPEO)	µg/L	mg/kg	9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0	5	0.4	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC-MS or LC-MS(MS)), OPEO/NPEO (n>2): ASTM D7742 ISO 18857-2
Nonylphenol (NP), mixed isomers			104-40-5, 11066-49-2, 25154-52-3, 84852-15-3			
Octylphenol ethoxylates (OPEO)			9002-93-1, 9036-19-5, 68987-90-6			
Octylphenol (OP), mixed isomers			140-66-9, 1806-26-4, 27193-28-8			
1B) Anti-Microbials & Biocides						
o-Phenylphenol (+salts)	µg/L	-	90-43-7	100	-	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS BS EN 12673-1999
Triclosan			3380-34-5			
Permethrin			Multiple	500		
1C) Chlorinated Paraffins						
Medium-chain chlorinated paraffins (MCCPs) (C14-C17)	µg/L	-	85535-85-9	500	-	EPA 3510 and analyzed by ISO18219-2:2021 Method for MCCP with GC-MS(NCI) or LC-MS/MS EPA 3510 and analyzed by ISO18219-1:2021, ISO 12010:2019 Methods for SCCP with GC-MS(NCI) or LC-MS/MS
Short-chain chlorinated paraffins (SCCPs) (C10-C13)			85535-84-8	25		
1D) Chlorobenzenes and Chlorotoluenes						
1,2-dichlorobenzene	µg/L	-	95-50-1	0.2	-	USEPA 8260D, 8270E, Purge and Trap, Head Space, Dichloromethane extraction followed by GC-MS
Other isomers of mono-, di, tri-, tetra-, penta-, and hexa- chlorobenzene			Multiple			
Other isomers of mono-, di-, tri-, tetra-, and penta- chlorotoluene		mg/kg	0.2			
1E) Chlorophenols						
2-chlorophenol	µg/L	-	95-57-8	0.5	-	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS, BS EN 12673-1999 the procedure of solvent extraction and derivatization are included
3-chlorophenol			108-43-0			
4-chlorophenol			106-48-9			
2,3-dichlorophenol			576-24-9			
2,4-dichlorophenol			120-83-2			
2,5-dichlorophenol			583-78-8			
2,6-dichlorophenol			87-65-0			
3,4-dichlorophenol			95-77-2			
3,5-dichlorophenol			591-35-5			
2,3,4-trichlorophenol			15950-66-0			
2,3,5-trichlorophenol			933-78-8			
2,3,6-trichlorophenol			933-75-5			
2,4,5-trichlorophenol			95-95-4			
2,4,6-trichlorophenol			88-06-2			
3,4,5-trichlorophenol			609-19-8			
2,3,5,6-tetrachlorophenol			935-95-5			
2,3,4,6-tetrachlorophenol			58-90-2			
2,3,4,5-tetrachlorophenol			4901-51-3			
Pentachlorophenol (PCP)	87-86-5					
1F) Dimethyl Formamide (DMFa)						
Dimethyl formamide; N,N-dimethylformamide (DMFa) ^a	µg/L	-	68-12-2	1000	-	EPA 8015, EPA 8270E

a = Report only for mock leather



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1G) Dyes - Carcinogenic or Equivalent Concern						
Basic Violet 3 with >0.1% of Michler's Ketone	µg/L	-	548-62-9	500	-	Liquid extraction, LC-MS
C.I. Acid Red 26			3761-53-3			
C.I. Acid Violet 49			1694-09-3			
C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)			2580-56-5			
C.I. Basic Green 4 (Malachite Green Chloride)			569-64-2			
C.I. Basic Green 4 (Malachite Green Oxalate)			2437-29-8			
C.I. Basic Green 4 (Malachite Green)			10309-95-2			
C.I. Basic Red 9			569-61-9			
C.I. Basic Violet 14			632-99-5			
C.I. Direct Black 38			1937-37-7			
C.I. Direct Blue 6			2602-46-2			
C.I. Direct Red 28			573-58-0			
C.I. Disperse Blue 1			2475-45-8			
C.I. Disperse Blue 3			2475-46-9			
Disperse Orange 11			82-28-0			
1H) Dyes - Disperse (Allergenic)						
Disperse Blue 102	µg/L	-	12222-97-8	50	-	Liquid extraction, LC-MS
Disperse Blue 106			12223-01-7			
Disperse Blue 124			61951-51-7			
Disperse Blue 26			3860-63-7			
Disperse Blue 35			12222-75-2			
			56524-77-7			
Disperse Blue 7			3179-90-6			
Disperse Brown 1			23355-64-8			
Disperse Orange 1			2581-69-3			
Disperse Orange 3			730-40-5			
Disperse Orange 37/59/76			13301-61-6			
Disperse Red 1			2872-52-8			
Disperse Red 11			2872-48-2			
Disperse Red 17			3179-89-3			
Disperse Yellow 1			119-15-3			
Disperse Yellow 3			2832-40-8			
Disperse Yellow 39			12236-29-2			
Disperse Yellow 49			54824-37-2			
Disperse Yellow 9	6373-73-5					
1I) Dyes - Navy Blue Colourant						
Component 1: C39H23Cl-CrN7O12S 2Na	µg/L	-	118685-33-9	500	-	Liquid extraction, LC-MS
Component 2: C46H-30CrN10O20S2 3Na			Not Allocated			



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1J) Flame Retardants						
2,2-bis(bromomethyl)- 1,3-propanediol (BBMP)	µg/L	-	3296-90-0	25	-	USEPA 8270E, ISO 22032, USEPA 527 and USEPA 8321B Dichloromethane extraction GC-MS or LC-MS(-MS)
Bis(2,3-dibromopropyl) phosphate (BIS)			5412-25-9			
Decabromodiphenyl ether (DecaBDE)			1163-19-5			
Hexabromocyclodecane (HBCDD)			3194-55-6			
Octabromodiphenyl ether (OctaBDE)			32536-52-0			
Pentabromodiphenyl ether (PentaBDE)			32534-81-9			
Polybromobiphenyls (PBB)			59536-65-1			
Tetrabromobisphenol A (TBBPA)			79-94-7			
Tris-(2-chloro-1-methylethyl)phosphate (TCPP)			13674-84-5			
Tris(1-aziridinyl)phosphine oxide (TEPA)			545-55-1			
Tris(1,3-dichloro-isopropyl)phosphate (TDCP)			13674-87-8			
Tris(2-chloroethyl)phosphate (TCEP)			115-96-8			
Tris(2,3-dibromopropyl)-phosphate (TRIS)			126-72-7			
Decabromobiphenyl (DecaBB)			13654-09-6			
Dibromobiphenyls (DiBB)			Multiple			
Octabromobiphenyls (OctaBB)			21850-44-2			
Dibromopropylether			68928-80-3			
Heptabromodiphenyl ether (HeptaBDE)			36483-60-0			
Hexabromodiphenyl ether (HexaBDE)			Multiple			
Monobromobiphenyls (MonoBB)			63936-56-1			
Monobromodiphenylethers (MonoBDEs)			40088-47-9			
Nonabromobiphenyls (NonaBB)			Multiple			
Nonabromodiphenyl ether (NonaBDE)			10043-35-3, 11113-50-1			
Tetrabromodiphenyl ether (TetraBDE)			1303-86-2			
Tribromodiphenylethers (TriBDEs)			12008-41-2			
Boric acid ^b			1303-96-4, 1330-43-4			
Diboron trioxide ^b			12267-73-1			
Disodium octaborate ^b	100					
Disodium tetraborate anhydrous ^b	Determined as total boron via ICP					
Tetraboron disodium heptaoxide, hydrate ^b						
1K) Glycols / Glycol Ethers						
2-ethoxyethanol	µg/L	-	110-80-5	50	-	USEPA 8270E Liquid extraction, LC-MS GC-MS
2-ethoxyethyl acetate			111-15-9			
2-methoxyethanol			109-86-4			
2-methoxyethylacetate			110-49-6			
2-methoxypropylacetate			70657-70-4			
Bis(2-methoxyethyl)-ether			111-96-6			
Ethylene glycol dimethyl ether			110-71-4			
Triethylene glycol dimethyl ether			112-49-2			
1L) Halogenated Solvents						
1,2-dichloroethane	µg/L	-	107-06-2	1	-	USEPA 8260D Headspace GC-MS or Purge and trap GC-MS
Methylene chloride			75-09-2			
Tetrachloroethylene			127-18-4			
Trichloroethylene			79-01-6			

b = Limit refer to elemental boron, not the salt.



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1M) Organotin Compounds						
Dipropyltin compounds (DPT)	µg/L	-	Multiple	0.01	-	ISO 17353 Derivatisation with NaB (C2H5)4 GC-MS
Mono-, di- and tri-butyltin derivatives						
Mono-, di- and tri-methyltin derivatives						
Mono-, di- and tri-octyltin derivatives						
Mono-, di- and tri-phenyltin derivatives						
Tetrabutyltin compounds (TeBT)						
Tripropyltin Compounds (TPT)						
Tetraoctyltin compounds (TeOT)						
Tricyclohexyltin (TCyHT)						
Tetraethyltin Compounds (TeET)						
1N) Other/Miscellaneous Chemicals						
AEEA [2-(2-aminoethylamino)ethanol]	µg/L	-	111-41-1	500	-	Liquid extraction, LC-MSMS
Bisphenol A			80-05-7	10		
Thiourea			62-56-6	50		Liquid extraction, LC-MS
Quinoline			91-22-5	50		Determine as total boron and total zinc via ICP
Borate, zinc salt ^c			12767-90-7	100		Not a ZDHC Wastewater parameter
Silica (Used in sand blasting) ^d			14464-46-1	NA		
1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)						
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	µg/L	-	Multiple	0.01	-	PFCs: EPA 537:2020 FTOH: BS EN 12673-1999, EPA 8270 PFCs: LC-MSMS FTOH: GC-MS Derivatisation with acetic anhydride followed by GC-MS
Perfluorooctanoic acid (PFOA) related substances				1		
1P) Phthalates - including all other esters of ortho-phthalic acid						
1,2-benzenedicarboxylic acid, di-C6-8 branched and linear alkyl esters, C7-rich (DIHP)	µg/L	-	71888-89-6, 84777-06-0	10	-	USEPA 8270E, ISO 18856 Dichloromethane extraction GC-MS
1,2-benzenedicarboxylic acid, di-C7-11 branched and linear alkyl esters (DHNUP)			68515-42-4, 68515-50-4			
Bis(2-methoxyethyl)phthalate (DMEP)			117-82-8			
Butyl benzyl phthalate (BBP)			85-68-7			
Di-cyclohexyl phthalate (DCHP)			84-61-7			
Di-iso-decyl phthalate (DIDP)			26761-40-0			
Di-iso-octyl phthalate (DIOP)			27554-26-3			
Di-iso-butyl phthalate (DIBP)			84-69-5			
Di-iso-nonyl phthalate (DINP)			28553-12-0			
Di-n-hexyl phthalate (DnHP)			84-75-3			
Di-n-octyl phthalate (DNOP)			117-84-0			
Di-n-pentylphthalates			131-18-0			
Di-n-propyl phthalate (DPRP)			131-16-8			
Di(ethylhexyl) phthalate (DEHP)			117-81-7			
Dibutyl phthalate (DBP)			84-74-2			
Diethyl phthalate (DEP)			84-66-2			
Diisopentylphthalates			605-50-5			
Dinonyl phthalate (DNP)			84-76-4			

c = Limit refers to elemental boron and/or zinc, not the salt.

d = Not required to test this parameter as this is related to sand blasting



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods				
	Wastewater	Sludge		Wastewater	Sludge					
1Q) Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene	µg/L	mg/kg	83-32-9	1	0.2	USEPA 8270E DIN 38407-39 Solvent extraction GC-MS				
Acenaphthylene			208-96-8							
Anthracene			120-12-7							
Benzo[a]anthracene			56-55-3							
Benzo[a]pyrene (BaP)			50-32-8							
Benzo[b]fluoranthene			205-99-2							
Benzo[e]pyrene			192-97-2							
Benzo[ghi]perylene			191-24-2							
Benzo[j]fluoranthene			205-82-3							
Benzo[k]fluoranthene			207-08-9							
Chrysene			218-01-9							
Dibenz[a,h]anthracene			53-70-3							
Fluoranthene			206-44-0							
Fluorene			86-73-7							
Indeno[1,2,3-cd]pyrene			193-39-5							
Naphthalene			91-20-3							
Phenanthrene	85-01-8									
Pyrene	129-00-0									
1R) Restricted Aromatic Amines (Cleavable from Azo-colourants)										
2-naphthylamine	µg/L	-	91-59-8	0.1	-	Reduction step with sodium dithionite, solvent extraction EPA 8270				
2-naphthylammoniumacetate			553-00-4							
2,4-xylidine			95-68-1							
2,4,5-trimethylaniline			137-17-7							
2,4,5-trimethylaniline hydrochloride			21436-97-5							
2,6-xylidine			87-62-7							
3,3'-dichlorobenzidine			91-94-1							
3,3-dimethoxybenzidine			119-90-4							
4-aminoazobenzene			60-09-3							
4-aminodiphenyl			92-67-1							
4-chloro-o-toluidine			95-69-2							
4-chloro-o-toluidinium chloride			3165-93-3							
4-chloroaniline			106-47-8							
4-methoxy-m-phenylene diammonium sulphate;			39156-41-7							
2,4-diaminoanisole sulphate										
4-methoxy-m-phenylenediamine			615-05-4							
4-methyl-m-phenylenediamine			95-80-7							
4,4-methylene-bis-(2-chloro-aniline)			101-14-4							
4,4-methylenedi-o-toluidine			838-88-0							
4,4-methylenedianiline			101-77-9							
4,4-oxydianiline			101-80-4							
4,4-thiodianiline			139-65-1							
5-nitro-o-toluidine			99-55-8							
6-methoxy-m-toluidine			120-71-8							
Benzidine			92-87-5							
o-aminoazotoluene			97-56-3							
o-anisidine			90-04-0							
o-toluidine			95-53-4							
										Reduction step with sodium dithionite, solvent extraction EPA 8270E and ISO 14362-1 GC/MS and LC/MS/MS



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater	Sludge		Wastewater	Sludge	
1S) UV Absorbers						
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	µg/L	-	36437-37-3	100	-	USEPA 8270 ISO 22032, USEPA 527 and USEPA 8321B. Dichloromethane extraction GC-MS or LC-MS(-MS)
2-(2H-benzotriazol-2-yl)-4,6- ditertpentylphenol (UV-328)			25973-55-1			
2-benzotriazol-2-yl-4,6-di-tert- butylphenol (UV-320)			3846-71-7			
2,4-Di-tert-butyl-6-(5- chlorobenzotriazole-2-yl) phenol (UV-327)			3864-99-1			
1T) Volatile Organic Compounds (VOC)						
Benzene	µg/L	-	71-43-2	1	-	ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D Add ISO 20595 Static headspace for determination ISO 11423-1 Headspace or Purge and trap GC-MS EPA 8270 BS EN 12673-1999 ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D HJ 1067 or EPA 8260D or ISO 11423-1
m-cresol			108-39-4			
o-cresol			95-48-7			
p-cresol			106-44-5			
Xylene			1330-20-7			
Toluene ^a			108-88-3			

a = Report only for mock leather



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater & Leachate	Sludge		Wastewater	Sludge	
Heavy Metals						
Antimony	mg/L	mg/kg	7440-36-0	0.01	5	With reference to EPA 3015A, 6020A, 200.8, 6020B, 3051A and ISO 17294-2 and analyzed by ICP-MS With reference to EPA 1311 and HJ/T 300 for leachate
Chromium (VI)			18540-29-9	0.001	20	
Barium			7440-39-3	1	200	
Selenium			7782-49-2	1	5	
Tin			7440-31-5	1	-	
Arsenic			7440-38-2	0.005	5	
Total Chromium			7440-47-3	0.05	50	
Cobalt			7440-48-4	0.01	400	
Cadmium			7440-43-9	0.01	1	
Copper			7440-50-8	0.25	50	
Lead			7439-92-1	0.01	5	
Nickel			7440-02-0	0.05	20	
Silver			7440-22-4	0.005	50	
Zinc			7440-66-6	0.5	400	
Mercury			7439-97-6	0.001	1	
Conventional						
pH	pH	pH		6 - 9		With reference to ISO 10523, EPA 150.2, APHA 4500-H+
Temperature difference	°C			-		USEPA 170.1 or GB/T 13195
E.coli	MPN/100-ml			126		-
Colour	m ⁻¹			2,1;1		ISO 7887 (Method A and B)
Persistent Foam	-			-		-
Wastewater Flowrate	m ³ /day			-		-
Ammonium-Nitrogen	mg/L			0.5		ISO 11732, ISO 7150, USEPA 350.1, APHA 4500 NH ³ -N, HJ 535 or HJ 536
AOX	mg/L			0.1		ISO 9562, EN ISO 9563, USEPA 1650, HJ.T 83-2001
Biochemical Oxygen Demand 5-days concentration (BOD ₅)	mg/L			8		ISO 5815-1 & -2, EN1899-1, USEPA 405.1, APHA 5210B or HJ 505
Chemical Oxygen Demand (COD)	mg/L			40		ISO 6060, USEPA 410.4, APHA 5220D or GB/T 11914
Dissolved Oxygen (DO)	mg/L			-		ISO 5814, EPA 360.1 or HJ 506
Oil & Grease	mg/L			0.5		ISO 9377-2, USEPA 1664 or HJ 637
Total Phenols / Phenol Index	mg/L			0.001		ISO 14402, APHA 5530B, C, D or HJ 503
Total Chlorine	mg/L			0.1		ISO 7393-2, EPA 330.5 or HJ 586
Total Dissolved Solids (TDS)	mg/L			5		APHA 2540C, GB/T 5750.4
Total Nitrogen	mg/L			5		ISO 5663, ISO 29411, USEPA 351.2, APHA 4500P-J, APHA 4500N-C/ HJ 636 or GB 11891
Total Phosphorus	mg/L			0.1		ISO 11885, ISO 6878, USEPA 365.4, APHA 4500P-J or GB/T 11893
Total Suspended Solids (TSS)	mg/L			5		ISO 11923, USEPA 160.2, APHA 2540D or GB/T 11901
% Solids	-	%		-	-	USEPA 160.3, HJ 613
Paint Filter Test	-	-		-	-	EPA SW-846 or EPA 9095B
Fecal Coliform	-	MPN/g		-	-	EPA 1681



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Appendix D - Test methods, reporting limits and CAS numbers (continued)

Test Parameters	Unit		CAS No.	LOQ		Test methods
	Wastewater & Leachate	Sludge		Wastewater	Sludge	
Anions						
Chloride	mg/L	-	-	-	-	ISO 10304-1, ISO 15923-1, USEPA 300, HJ 84-2016, IS 3025 (part 32)
Cyanide, total		mg/kg		0.05	20	ISO 6703-1 & 2, ISO 14403-1 & 2, USEPA 335.2, APAH 4500-CN or HJ 484
Sulfate		-		-	-	ISO 10304-1, ISO 15923-1, USEPA 300, HJ 84-2016, IS 3025 (part 24)
Sulfide		-		0.01	-	ISO 10530, SM 4500-S2-D, E, G or I, GB/T 16489 or IS 3025 (part 29), HJ 1226-2021
Sulfite		-		0.2	-	ISO 10304-3, SM 4500-SO32-C or HJ 84-2016

END OF REPORT