



Test Report: (6623)097-0371

Report Date: April 19, 2023

Factory Company Name: Jiangsu Zhongcheng Printing and Dyeing Co., Ltd

Factory Address: No.568 Qianhu Road, Wuxi City, Jiangsu Province

Sampling Method & Description:

I001) Untreated wastewater	Grab	Dark blue liquid
I002) Effluent	Composite	Light yellow liquid
I003) Sludge	Composite	Brown solid
I004) Leachate	Composite	Brown liquid

Discharge Type: **Indirect Discharge with Pretreatment**

On-site ETP / Pretreatment: <Yes>

Discharge Destination: Centralized ETP

Off-site / External ETP Name & Address: <Qianhui Sewage Treatment Plant & Wuxi City, Jiangsu Province>

Permit Validation Date: 2022-12-30 to 2023-12-31

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

Sludge Parameters: Exceed ZDHC Threshold Value

Sample Pick Up Date: April 07, 2023 Sampler Certification Number: C74D106818215

Test Period: April 07, 2023 to April 19, 2023

Parameter(s) exceeded maximum holding time: Not applicable

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
1A) AP and APEOs	ND	NR
1B) Anti-Microbials & Biocides	ND	
1C) Chlorinated Parafins	ND	
1D) Chlorobenzenes and Chlorotoluenes	ND	
1E) Chlorophenols	ND	
1F) Dimethylfumarate ^a	NR	
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	ND	
1O) PFCs	ND	
1P) Phthalates	ND	
1Q) PAHs	ND	
1R) Restricted Aromatic Amines	ND	
1S) UV Absorbers	ND	
1T) VOC	ND	

a = Report only for mock leather

Result Summary - ZDHC Heavy Metals Wastewater Parameters

Test Items	Untreated wastewater	Effluent
Arsenic	NR	Refer to result
Cadmium		Refer to result
Chromium (VI)		Refer to result
Lead		Refer to result
Mercury		Refer to result



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Result Summary - ZDHC Sludge Parameters

Test Items	Sludge	Leachate
Antimony	ND	NR
Arsenic	ND	NR
Barium	ND	NR
Cadmium	ND	NR
Cobalt	ND	NR
Copper	ND	NR
Lead	D	Refer to result
Nickel	ND	NR
Selenium	ND	NR
Silver	ND	NR
Total Chromium	ND	NR
Zinc	D	Refer to result
Chromium (VI)	ND	NR
Mercury	ND	NR
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 Discharge Criteria
Not Meet	=	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)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate [#] (mg/L)
1A) AP and APEOs: including all isomers							
NPEO	ND	NR	ND	NR	5	0.4 ^e	Please refer to leachate limits in the ZDHC Wastewater Guidelines
NP, mixed isomers	ND		ND	NR			
OPEO	ND		ND	NR			
OP, mixed isomers	ND		ND	NR			
1B) Anti-Microbials & Biocides							
o-Phenylphenol (+salts)	ND	NR	NR	NR	100	-	-
Triclosan	ND				500	-	-
Permethrin	ND				-	-	-
1C) Chlorinated Parafins							
MCCPs (C14-C17)	ND	NR	NR	NR	5	-	-
SCCPs (C10-C13)	ND						
1D) Chlorobenzenes and Chlorotoluenes							
1,2-dichlorobenzene	ND	NR	NR	NR	0.2	-	-
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- chlorobenzene	ND						
Other isomers of mon-, di-, tri-, tetra- and penta-chlorotoluene	ND		ND	NR			
1E) Chlorophenols							
2-chlorophenol	ND	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	NR	NR	NR	NR	1000	-	-

a = Report only for mock leather

e = Sludge parameter limit refers Table 4C and 4D in the ZDHC Wastewater Guidelines.



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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)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate [#] (mg/L)
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	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	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	500	-	-
Component 2: C46H-30CrN10O20S2 3Na	ND						



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Test Parameters	Results of Test Items				Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 (mg/kg)	I004 (mg/L)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate [#] (mg/L)
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		-	-
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	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	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)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate [#] (mg/L)
1M) Organotin Compounds							
Dipropyltin compounds (DPT)	ND	NR	NR	NR	0.01	-	-
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						
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	NR	NR	500	-	-
Bisphenol A	ND				10		
Thiourea	ND				50		
Quinoline	ND				100		
Borate, zinc salt ^c	ND				NA		
Silica (used in sand blasting) ^d	NR						
1O) Perfluorinated and Polyfluorinated Chemicals (PFCs)							
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	ND	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	NR	NR	NR	10	-	-
1,2-benzenedicarboxylic acid, di-C7-11 branched and linear alkyl esters (DHNUP)	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						
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 required to test this parameter as this is related to sand blasting



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Test Result - ZDHC MRS� Parameters (continued)

Test Parameters	Results of Test Items				Requirements [Textile]		
	I001 (µg/L)	I002 (µg/L)	I003 (mg/kg)	I004 (mg/L)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate [#] (mg/L)
1Q) Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	ND	NR	ND	NR	1	0.2 ^e	Please refer to leachate limits in the ZDHC Wastewater Guidelines
Acenaphthylene	ND		ND	NR			
Anthracene	ND		ND	NR			
Benzo[a]anthracene	ND		ND	NR			
Benzo[a]pyrene (BaP)	ND		ND	NR			
Benzo[b]fluoranthene	ND		ND	NR			
Benzo[e]pyrene	ND		ND	NR			
Benzo[ghi]perylene	ND		ND	NR			
Benzo[j]fluoranthene	ND		ND	NR			
Benzo[k]fluoranthene	ND		ND	NR			
Chrysene	ND		ND	NR			
Dibenz[a,h]anthracene	ND		ND	NR			
Fluoranthene	ND		ND	NR			
Fluorene	ND		ND	NR			
Indeno[1,2,3-cd]pyrene	ND		ND	NR			
Naphthalene	ND		ND	NR			
Phenanthrene	ND	ND	NR				
Pyrene	ND	ND	NR				
1R) Restricted Aromatic Amines (Cleavable from Azo-colourants)							
2-naphthylamine	ND	NR	NR	NR	0.1	-	-
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						
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						

e = Sludge parameter limit refers Table 4C and 4D in the ZDHC Wastewater Guidelines.

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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)	Wastewater (µg/L)	Sludge (mg/kg)	Leachate [#] (mg/L)
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	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						
1T) Volatile Organic Compounds (VOC)							
Benzene	ND	NR	NR	NR	1	-	-
m-cresol	ND						
o-cresol	ND						
p-cresol	ND						
Xylene	ND						
Toluene ^a	NR						

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Test Result - ZDHC Heavy Metals, Conventional and Anions Parameters

Test Parameters	Unit			Results of Test Items				Requirements [Textile]		
	Wastewater	Sludge	Leachate	I001	I002	I003	I004	Wastewater	Sludge	
								Discharge Criteria	Sludge Threshold Values	Leachate Limit [#]
ZDHC Heavy Metals										
Antimony	mg/L	mg/kg	mg/L	NR	NR	10	NR	-	12	#
Chromium (VI)	mg/L	mg/kg	mg/L		ND	ND	NR	Not applicable	50	
Barium	mg/L	mg/kg	mg/L		NR	ND	NR	-	700	
Selenium	mg/L	mg/kg	mg/L		NR	ND	NR	-	10	
Arsenic	mg/L	mg/kg	mg/L		ND	10	NR	Not applicable	10	
Total Chromium	mg/L	mg/kg	mg/L		NR	81	NR	-	100	
Cobalt	mg/L	mg/kg	mg/L		NR	ND	NR	-	1600	
Cadmium	mg/L	mg/kg	mg/L		ND	ND	NR	Not applicable	3	
Copper	mg/L	mg/kg	mg/L		NR	91	NR	-	200	
Lead	mg/L	mg/kg	mg/L		ND	37	0.047	Not applicable	10	
Nickel	mg/L	mg/kg	mg/L		NR	21	NR	-	70	
Silver	mg/L	mg/kg	mg/L		NR	ND	NR	-	100	
Zinc	mg/L	mg/kg	mg/L		NR	1163	2.629	-	1000	
Mercury	mg/L	mg/kg	mg/L		ND	ND	NR	Not applicable	1	
ZDHC Conventional										
pH ^e	pH	-	-	NR	NR	11.84	NR	-	-	-
% Solids ^e	-	%	%			34.5				
Paint Filter Test ^e	-	-	-			Pass				
Fecal Coliform ^e	-	MPN/g	-			ND				
ZDHC Anions										
Cyanide, total	mg/L	mg/kg	mg/L	NR	NR	ND	NR	-	-	-

#Limit refers to Table 4B to 4D in 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	综合排放口	悬浮物	100mg/L
DW001	综合排放口	色度	80
DW001	综合排放口	pH值	6-9
DW001	综合排放口	苯胺类	1mg/L
DW001	综合排放口	化学需氧量	200mg/L
DW001	综合排放口	总氮 (以N计)	30mg/L
DW001	综合排放口	氨氮 (NH ₃ -N)	20mg/L
DW001	综合排放口	流量	/
DW001	综合排放口	五日生化需氧量	50mg/L
DW001	综合排放口	硫化物	0.5mg/L
DW001	综合排放口	总磷 (以P计)	1.5mg/L
DW001	综合排放口	动植物油	100mg/L
主要排放口合计			CODcr
			氨氮
			总氮 (以N计)
			总磷 (以P计)



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Appendix B - Sample Photos

1001) Sampling point

<N 31°35'16.70";E 120°12'46.88" >



1001) Sampling location surrounding

<N 31°35'16.70";E 120°12'46.88" >



1001) Labelled sample bottles



1001) Sample for phthalate test

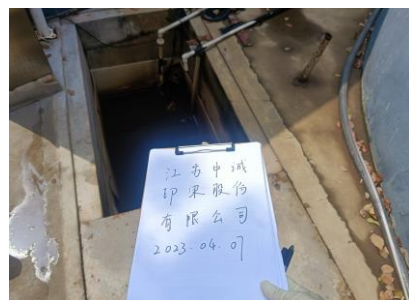


1001) Sample packaging



1002) Sampling point

<N 31°35'16.81";E 120°12'47.80" >



1002) Sampling location surrounding

<N 31°35'16.81";E 120°12'47.80" >



1002) Labelled sample bottles



1002) Sample packaging





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Appendix B - Sample Photos (continued)

I003) Sampling point

<N 31°35'16.57";E 120°12'47.27" >



I003) Sampling location surrounding

<N 31°35'16.57";E 120°12'47.27" >



I003) Labelled sample bottles



I003) 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

General Data

Laboratory Sample Number: 66230970371

Client Name: _____

Field Contact Person: 李红 Phone No: 13421132807

Project (Facility Name and Address): 江苏中诚印务股份有限公司无锡东钱湖568号

Sampling Location / Description: 污水处理站

Sample Identification: GTW 2.1

Sample Type: Composite Sample / Grab sample (Please delete as appropriate) 湖中池 2000m³

Name of Sampler: 李红

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

Date of collection: 2023.06.07

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

*Note: It would be selected more than one

Field Data for Wastewater

Arrival Time:	<u>10:00</u>	Departure Time:	<u>15:20</u>
Field Parameters	pH: <u>1</u>	Temp: <u>1</u> °C	Color: <u>1</u>
Control No. of field equipment	<u>CA-00222</u>	<u>CA-00222</u>	Flow rate: / (volume/min)
Factory with effluent treatment plant:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Sample matrix:	<input checked="" type="checkbox"/>	Incoming water (if required)	
	<input checked="" type="checkbox"/>	Wastewater before treatment	
	<input checked="" type="checkbox"/>	Wastewater after treatment - water at discharge point	
Sampler container number	<u>A2</u>		
Recording time	ID: <u>A2</u>		
	Time: <u>10:31</u>		
pH:	<u>6.14</u>		
Temp (°C):	<u>28.0</u>		
Color (visual estimation):	<u>1-2</u>		
Flow rate (volume/time):	<u>850m³/d</u>		
Volume collected, mL:	<u>6.8L</u>		
Total volume collected:	<u>6.8L</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 (v)	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			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
19. PFCs (Remark 6)	✓	2 mL				Without adding acid Store sample at 2-8°C



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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)	2000 mL total or 2000 mL each	Amber Glass, washed with nitric acid.	Without adding acid Store sample at 2-8°C
	21. Total dissolved solids (TDS)			
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 ₅ 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 9-9.5 by adding ammonium buffer. Store sample at 2-8°C
27. 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
28. Phenols		500 mL		
29. Oil and Grease & Total Hydrocarbon		1000 mL		
30. *Formaldehyde		25 mL		
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 8M 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): <u> </u> 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		
37. Adsorbable organically bound halogens (AOX)		100 mL		
38. Acute aquatic toxicity: Laminius Bacteria; Fish Egg; Daphne; Algae		1000 mL	Amber Glass, washed with nitric acid	Without adding acid Store sample at 2-8°C
39. Sulphate		100 mL		
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:				

- *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-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: 李新宇 Date: 2023.04.07

Comment from factory: 外理前: E 120°12'46.88" N 31°35'16.70"

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

Signatory of Factory Representative: 刘红 Date: 2023.4



Test Report: (6623)097-0371

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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: 66230970371

Client Name: 1

Field Contact Person: 刘红 Phone No: 13921132507

Project (Facility Name and Address): 江苏中成印染股份有限公司 / 无锡东桥北路568号

Sampling Location / Description: 外排口

Sample Identification: GTW 2 1

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

Name of Sampler: 李新

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

Date of collection: 2023.04.07

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

*Note: It would be collected more than one

Field Data for Wastewater									
Arrival Time:	<u>10:00</u>			Departure Time:			<u>15:20</u>		
Field Parameters:	pH:	<u>7.45</u>		Temp:	°C		Color:	<u>15</u>	
Control No. of field equipment:	<u>CA-00277</u>			<u>CA-00277</u>			Flow rate: / (volume/min)		
Factory with effluent treatment plant:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No								
Sample matrix:	Incoming water (if required)								
	Wastewater before treatment								
Wastewater after treatment - water at discharge point									
Sampler container number:	<u>A3</u>	<u>A3</u>	<u>A3</u>	<u>A3</u>	<u>A3</u>	<u>A3</u>	<u>A3</u>	<u>A3</u>	<u>A3</u>
Recording time:	ID:	<u>A3</u>							
	Time:	<u>10:15</u>	<u>11:15</u>	<u>12:15</u>	<u>12:15</u>	<u>14:15</u>	<u>15:15</u>	/	
pH:	<u>7.45</u>	<u>6.90</u>	<u>6.95</u>	<u>7.0</u>	<u>7.10</u>	<u>7.00</u>			
Temp (°C):	<u>26.7</u>	<u>26.8</u>	<u>26.7</u>	<u>26.6</u>	<u>26.8</u>	<u>26.7</u>			
Color (visual estimation):	<u>淡黄</u>	<u>淡黄</u>	<u>淡黄</u>	<u>淡黄</u>	<u>淡黄</u>	<u>淡黄</u>			
Flow rate (volume/time):	<u>8 L/min</u>								
Volume collected, mL:	<u>55 mL</u>	<u>55 mL</u>	<u>55 mL</u>	<u>55 mL</u>	<u>55 mL</u>	<u>75 mL</u>			
Total volume collected:	<u>320 mL</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 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. UV absorbers		100				
16. BPA		2				
17. Preservatives		52				
18. VOC & Halogenated Solvents (Remark 6)		10 mL				Fill to full container without air gas, 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	Without adding acid Store sample at 2-8°C



Test Report: (6623)097-0371

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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% Na ₂ S ₂ O ₅ 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 9.9-9.5 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 20% 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 2.5% EDTA Store sample at 2-8°C
35. Total-N		100 mL		
36. Ammonium-N		500 mL		Acidify to pH 2 with H ₂ SO ₄ Store sample 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: Luminous Bacteria; Fish Egg; Daphne; Algae		1000 mL	Amber Glass, washed with nitric acid	
39. Sulphate		100 mL		
40. Chloride		100 mL		Without adding acid Store sample at 2-8°C
41. Conductivity		100 mL		
42. Dissolved oxygen (DO)		N.A.		
43. Total Chlorine		N.A.		measure in field
44. 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, 14-29, 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: 李新宇 Full name: _____ Date: 2023.06.07

Comment from factory: 处理点: E 120°12'67.80" N: 31°0'35'16.81"

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: 刘红 Full Name: 刘红 Date: 2023.4.07



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

Field Data for Sludge									
Arrival Time:		10:00		Departure Time:		15:20			
Field Parameters		pH	Temp	Flow rate (volume/time) / sludge flux (weight/time)					
Control No. of field equipment									
Recording time	ID	11:30							
	Time								
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							

污泥样品

Analysis Required and Preservation Method						
Factory with effluent treatment plant		Yes				
Sample matrix		Sludge in clarifier (sedimentation tank)				
Sampler container number						
Recording time						
Tests (MRSL Parameter)	Test required (Y)	Total of sample size	Type of container	Preservation method		
Combined test or Individual test (Remark 3)	1. Phthalate	10g total or 10g each	Amber Glass, washed with nitric acid	Add 0.2 mL of 10% Na ₂ S ₂ O ₅ (0.008% W/W). Store sample at 4°C		
	2. Chlorobenzenes, Chlorotoluene & PAHs					
	3. SCCPs					
	4. APS					
5. APEOs		20 g				
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 ₅ (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 ₅ (0.008% W/W). Store sample at 4°C

Tests (Conventional Parameters)	Test required (Y)	Total of sample size	Type of container	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		
18. Adsorbable organically bound halogens (AOX)		1 g	Amber Glass, wash with nitric acid	Fill to full container without any air gap and acid add and store at 4°C
19. Extractable organochlorides (EOX)		20 g		
20. Total organic carbon (TOC)		20 g		
21. Cyanide	✓	50 g		
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 2-8°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 Filter Test		20 g		Store sample at 4°C
25. Others				
Observation/ Remark: <i>Site: E 170° [2'67.2]" N 31° 35' 16.5"</i>				

- *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, 10-17, 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-ST/PO1, 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.

Test Report: 6623)097-0371Report Date: April 19, 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 USEPA 8270E Solvent extraction followed by GC-MS or ISO 14154:2005 and determination by LCMS/LCMSMS
Triclosan			3380-34-5			
Permethrin			Multiple			
1C) Chlorinated Paraffins						
Medium-chain chlorinated paraffins (MCCPs) (C14-C17)	µg/L	-	85535-85-9	5	-	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			
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				
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)			3296-90-0			
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	25		USEPA 8270E, ISO 22032, USEPA 527 and USEPA 8321B Dichloromethane extraction GC-MS or LC-MS(-MS)
Tris(2,3,-dibromopropyl)-phosphate (TRIS)			126-72-7			
Decabromobiphenyl (DecaBB)	µg/L	-	13654-09-6		-	
Dibromobiphenyls (DiBB)			Multiple			
Octabromobiphenyls (OctaBB)			Multiple			
Dibromopropylether			21850-44-2			
Heptabromodiphenyl ether (HeptaBDE)			68928-80-3			
Hexabromodiphenyl ether (HexaBDE)			36483-60-0			
Monobromobiphenyls (MonoBB)			Multiple			
Monobromodiphenylethers (MonoBDEs)			Multiple			
Nonabromobiphenyls (NonaBB)			Multiple			
Nonabromodiphenyl ether (NonaBDE)			63936-56-1			
Tetrabromodiphenyl ether (TetraBDE)			40088-47-9			
Tribromodiphenylethers (TriBDEs)			Multiple			
Boric acid ^b			10043-35-3, 11113-50-1			
Diboron trioxide ^b			1303-86-2			
Disodium octaborate ^b			12008-41-2	100		
Disodium tetraborate anhydrous ^b			1303-96-4, 1330-43-4			Determined as total boron via ICP
Tetraboron disodium heptaoxide, hydrate ^b			12267-73-1			

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	
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			
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		
Borate, zinc salt			12767-90-7	100		Determine as total boron and total zinc via ICP
Silica (Used in sand blasting)			14464-46-1	NA		Not a ZDHC Wastewater parameter
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		

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	
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					
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			



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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		
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; 2,4-diaminoanisole sulphate			39156-41-7				Reduction step with sodium dithionite, solvent extraction EPA 8270E and ISO 14362-1 GC/MS and LC/MS/MS
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				
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 of VOC in wastewater	
m-cresol			108-39-4				
o-cresol			95-48-7				
p-cresol			106-44-5				
Xylene			1330-20-7				
Toluene ^a			108-88-3			HJ 1067 or EPA 8260D or ISO 11423-1	

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	Leachate	
Heavy Metals							
Antimony	mg/L	mg/kg	7440-36-0	0.01	5	0.01	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 HJT 300 for leachate
Chromium (VI)			18540-29-9	0.001	20	0.001	
Barium			7440-39-3	1	200	1	
Selenium			7782-49-2	1	5	1	
Tin			7440-31-5	1	-	1	
Arsenic			7440-38-2	0.005	5	0.005	
Total Chromium			7440-47-3	0.05	50	0.05	
Cobalt			7440-48-4	0.01	400	0.01	
Cadmium			7440-43-9	0.01	1	0.01	
Copper			7440-50-8	0.25	50	0.25	
Lead			7439-92-1	0.01	5	0.01	
Nickel			7440-02-0	0.05	20	0.05	
Silver			7440-22-4	0.005	50	0.005	
Zinc			7440-66-6	0.5	400	0.5	
Mercury			7439-97-6	0.001	1	0.001	
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
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	Leachate	
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)
Sulfite		-		0.2	-	-	ISO 10304-3, SM 4500-SO32-C or HJ 84-2016

END OF REPORT