

SOFTLINES WASTEWATER TESTING
TEST REPORT (TEXTILES)

Number: BGD22177901

Report Date: 08/01/2023

Factory's name : NICE COTTON LTD
 Factory's address : SOUTH PANISHAIL, KASHIMPUR, GAZIPUR, BANGLADESH

Type of wastewater discharge: Direct discharge
 On-site Wastewater treatment plant: With wastewater treatment plant
 Average total industrial wastewater generated: ≥ 15m³/day

Date of sampling : 29/12/2022
 Date of sample arrived laboratory: 29/12/2022
 Date of testing: 29/12/2022

Sample type:
 Sample / Untreated wastewater [Black, composite sample at 10:30; 11:30; 12:30; 13:30; 14:30; 15:30]
 [N 23.98702, E 90.26285]
 Sample / Effluent [Light Brown, composite sample at 11:00; 12:00; 13:00; 14:00; 15:00; 16:00]
 [N 23.98715, E 90.26234]
 Sample / Sludge [Black, composite sample at 15:45]
 [N 23.98732, E 90.26287]

Sampling laboratory: ITS Labtest Bangladesh Ltd.
 Testing laboratory: ITS Labtest Bangladesh Ltd.

ZDHC sampler accreditation certification number: C74D106817338

Tests conducted:
 As requested by a brand program, for details refer to attached page(s).

Summary of test results:

Wastewater / MRSL – Test items	Untreated Wastewater
Alkylphenol ethoxylates / Alkylphenols (APEOs/APs)	ND
Anti-Microbials & Biocides	ND
Chlorinated Parafins	ND
Chlorobenzenes and Chlorotoluenes	ND
Chlorophenols	ND
Dimethyl Formamide (DMFa) (*)	ND
Dyes – Carcinogenic or Equivalent Concern	ND
Dyes – Disperse (Allergenic)	ND
Dyes – Navy Blue Colourant	ND
Flame Retardants	ND
Glycols / Glycol Ethers	ND
Halogenated solvents	ND
Organotin compounds	ND

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Other/Miscellaneous Chemicals	ND
Perfluorinated & Polyfluorinated chemicals (PFCs)	ND
Phthalates (Ortho-phthalates)	ND
Polycyclic aromatic hydrocarbons (PAHs)	ND
Restricted Aromatic Amines (Cleavable from Azo- colourants)	ND
UV Absorbers	ND
Volatile Organic Compounds (VOC)	ND

Wastewater / Heavy metals - Test items	Effluent		
	Foundational	Progressive	Aspirational
Antimony			Meet
Chromium (VI)			Meet
Barium	Report only, refer data		
Selenium	Report only, refer data		
Tin	Report only, refer data		
Arsenic			Meet
Chromium (total)			Meet
Cobalt			Meet
Cadmium			Meet
Copper			Meet
Lead			Meet
Nickel			Meet
Silver			Meet
Zinc			Meet
Mercury			Meet

Wastewater / Conventional parameters - Test items	Effluent		
	Foundational	Progressive	Aspirational
pH ^[f]	Meet		
Temperature difference ^[f]			Meet
E.coli	Meet		
Colour		Meet	
Persistent foam ^[f]	Meet		
Wastewater flowrate ^[f]	Report only, refer data		
Ammonium-Nitrogen			Meet
AOX			Meet
Biochemical Oxygen Demand (BOD ₅)			Meet
Chemical Oxygen Demand (COD)			Meet
Dissolved Oxygen (DO) ^[f]	Report only, refer data		
Oil & Grease			Meet
Total Phenols / Phenol Index	Meet		
Total Chlorine ^[f]	Report only, refer data		
Total Dissolved Solids (TDS)	Report only, refer data		
Total Nitrogen			Meet
Total Phosphorus		Meet	
Total Suspended Solids (TSS)			Meet

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Wastewater / Anions - Test items	Effluent		
	Foundational	Progressive	Aspirational
Chloride	Report only, refer data		
Cyanide, total			Meet
Sulfate	Report only, refer data		
Sulfide	Meet		
Sulfite	Meet		

Sludge – Disposal Pathways
C

Sludge / Heavy Metals - Test items	Sludge (Total)	Sludge (Leachate)
Antimony	Meet	
Arsenic	Meet	
Barium	Meet	
Cadmium	Meet	
Cobalt	Meet	
Copper	Meet	
Lead	Meet	
Nickel	Meet	
Selenium	Meet	
Silver	Meet	
Chromium (total)	Meet	
Zinc	Meet	
Chromium VI	Meet	
Mercury	Meet	

Sludge / Anion - Test items	Sludge
Cyanide	Meet

Sludge / Conventional parameters - Test items	Sludge
pH	Meet
% Solids	Report only, refer data
Paint filter test	Report only, refer data
Faecal coliform	Report only, refer data

Sludge / MRSL - Test items	Sludge
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	Report only, refer data
Polycyclic Aromatic Hydrocarbons (PAHs)	Report only, refer data
Chlorotoluenes	Report only, refer data

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Note :	
ND = Not detected (less than reporting limit)	
D = Detected	
N/A = Not applicable	- = Did not perform
# = No comment	* = See Remark
@ = Maximum holding time exceeded.	
(*) = Report for mock leather only.	
[f] = On-site test by sampler.	

Authorized By
For ITS Labtest Bangladesh Ltd.



Mohammad Neyamul Hasan
Country Business Line Leader, Softlines

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Sample / Wastewater

1. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers

NP/OP: With reference to ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 with GC-MS or LC-MS-MS analysis.

OPEO/NPEO (n>2): With reference to ASTM D7742 or ISO 18857-2

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Nonylphenol ethoxylates (NPEO)	9016-45-9; 26027-38-3; 37205-87-1; 68412-54-4; 127087-87-0	5	ND	µg/L
Nonylphenol (NP), mixed isomers	104-40-5; 11066-49-2; 25154-52-3; 84852-15-3	5	ND	µg/L
Octylphenol ethoxylates (OPEO)	9002-93-1; 9036-19-5; 68987-90-6	5	ND	µg/L
Octylphenol (OP), mixed isomers	140-66-9; 1806-26-4; 27193-28-8	5	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

2. Anti- Microbials & Biocides

OPP, Triclosan: With reference to USEPA 8270E Solvent extraction, derivatization with KOH, acetic anhydride followed by GC-MS analysis; with reference to BS EN 12673-1999 an alternative method of solvent extraction and derivatization are included.

Permethrin: With reference to USEPA 8270E Solvent extraction, followed by GC-MS analysis; With reference to ISO 14154:2005 without derivatization and determination by LC-MS or LC-MS-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
o-Phenylphenol (+salts)	90-43-7	100	ND	µg/L
Triclosan	3380-34-5	100	ND	µg/L
Permethrin	Multiple	500	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

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3. Chlorinated Parafins

For MCCP: With reference to EPA 3510, analysis by ISO18219-2:2021 with GC-MS-NCI or LC-MS-MS analysis.

For SCCP: With reference to EPA 3510, analysis by ISO18219-1:2021, ISO 12010:2019 with GC-MS-NCI or LC-MS-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Medium-chain Chlorinated paraffins (MCCPs) (C14-C17)	85535-85-9	500	ND	µg/L
Short-chain Chlorinated paraffin (C10 – C13)	85535-84-8	25	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

4. Chlorobenzenes and Chlorotoluenes

With reference to USEPA 8260D, USEPA 8270E, Purge and Trap, Head Space, Dichloromethane extraction followed by GC-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
1,2-Dichlorobenzene	95-50-1	0.2	ND	µg/L
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- Chlorobenzene and mono-, di-, tri-, tetra- and penta- chlorotoluene	Multiple	0.2	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

5. Chlorophenols

With reference to US EPA 8270E solvent extraction, derivatization with KOH, acetic anhydride followed by GC-MS; with reference to BS EN 12673-1999 solvent extraction and derivatization are included.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
2-Chlorophenol	95-57-8	0.5	ND	µg/L
3-Chlorophenol	108-43-0	0.5	ND	µg/L
4-Chlorophenol	106-48-9	0.5	ND	µg/L
2,3-Dichlorophenol	576-24-9	0.5	ND	µg/L
2,4-Dichlorophenol	120-83-2	0.5	ND	µg/L
2,5-Dichlorophenol	583-78-8	0.5	ND	µg/L
2,6-Dichlorophenol	87-65-0	0.5	ND	µg/L
3,4-Dichlorophenol	95-77-2	0.5	ND	µg/L
3,5- Dichlorophenol	591-35-5	0.5	ND	µg/L
2,3,4-Trichlorophenol	15950-66-0	0.5	ND	µg/L
2,3,5-Trichlorophenol	933-78-8	0.5	ND	µg/L

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2,3,6-Trichlorophenol	933-75-5	0.5	ND	µg/L
2,4,5-Trichlorophenol	95-95-4	0.5	ND	µg/L
2,4,6-Trichlorophenol	88-06-2	0.5	ND	µg/L
3,4,5-Trichlorophenol	609-19-8	0.5	ND	µg/L
2,3,4,5-Tetrachlorophenol	4901-51-3	0.5	ND	µg/L
2,3,4,6-Tetrachlorophenol	58-90-2	0.5	ND	µg/L
2,3,5,6-Tetrachlorophenol	935-95-5	0.5	ND	µg/L
Pentachlorophenol (PCP)	87-86-5	0.5	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

6. Dimethyl Formamide (DMFa)

With reference to EPA 8015, EPA 8270E.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Dimethyl formamide; N,N-dimethylformamide (DMFa) (*)	68-12-2	1000	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

(*) Report for mock leather only.

7. Dyes – Carcinogenic or Equivalent Concern

By Liquid extraction, LC-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Basic violet 3 with >0.1% of Michler’s Ketone	548-62-9	500	ND	µg/L
C.I. Acid Red 26	3761-53-3	500	ND	µg/L
C.I. Acid Violet 49	1694-09-3	500	ND	µg/L
C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5	500	ND	µg/L
C.I. Basic Green 4 (malachite green chloride)	569-64-2	500	ND	µg/L
C.I. Basic Green 4 (malachite green oxalate)	2437-29-8	500	ND	µg/L
C.I. Basic Green 4 (malachite green)	10309-95-2	500	ND	µg/L
C.I. Basic Red 9	569-61-9	500	ND	µg/L
C.I. Basic Violet 14	632-99-5	500	ND	µg/L
C.I. Direct Black 38	1937-37-7	500	ND	µg/L
C.I. Direct Blue 6	2602-46-2	500	ND	µg/L
C.I. Direct Red 28	573-58-0	500	ND	µg/L
C.I. Disperse Blue 1	2475-45-8	500	ND	µg/L
C.I. Disperse Blue 3	2475-46-9	500	ND	µg/L
Disperse Orange 11	82-28-0	500	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

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8. Dyes – Disperse (Allergenic)

By Liquid extraction, LC-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Disperse Blue 102	12222-97-8	50	ND	µg/L
Disperse Blue 106	12223-01-7	50	ND	µg/L
Disperse Blue 124	61951-51-7	50	ND	µg/L
Disperse Blue 26	3860-63-7	50	ND	µg/L
Disperse Blue 35	12222-75-2 56524-77-7	50	ND	µg/L
Disperse Blue 7	3179-90-6	50	ND	µg/L
Disperse Brown 1	23355-64-8	50	ND	µg/L
Disperse Orange 1	2581-69-3	50	ND	µg/L
Disperse Orange 3	730-40-5	50	ND	µg/L
Disperse Orange 37/59/76	13301-61-6	50	ND	µg/L
Disperse Red 1	2872-52-8	50	ND	µg/L
Disperse Red 11	2872-48-2	50	ND	µg/L
Disperse Red 17	3179-89-3	50	ND	µg/L
Disperse Yellow 1	119-15-3	50	ND	µg/L
Disperse Yellow 3	2832-40-8	50	ND	µg/L
Disperse Yellow 39	12236-29-2	50	ND	µg/L
Disperse Yellow 49	54824-37-2	50	ND	µg/L
Disperse Yellow 9	6373-73-5	50	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

9. Dyes – Navy Blue Colourant

By Liquid extraction, LC-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Component 1: C39H23Cl-CrN7O12S 2Na	118685-33-9	500	ND	µg/L
Component 2: C46H-30CrN10O20S2 3Na	Not Allocated	500	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

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10. Flame retardants

Other flame retardant substances: With reference to USEPA 8270E, ISO 22032, USEPA 527 and USEPA 8321B, Dichloromethane extraction GC-MS or LC-MS-MS analysis.

Borate salt: determined as total boron via ICP analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	25	ND	µg/L
Bis(2,3-dibromopropyl) phosphate (BIS)	5412-25-9	25	ND	µg/L
Decabromodiphenyl ether (DecaBDE)	1163-19-5	25	ND	µg/L
Hexabromocyclododecane (HBCDD)	3194-55-6	25	ND	µg/L
Octabromodiphenyl ether (OctaBDE)	32536-52-0	25	ND	µg/L
Pentabromodiphenyl ether (PentaBDE)	32534-81-9	25	ND	µg/L
Polybromobiphenyls (PBBs)	59536-65-1	25	ND	µg/L
Tetrabromobisphenol A (TBBPA)	79-94-7	25	ND	µg/L
Tris-(2-chloro-1-methylethyl) phosphate (TCPP)	13674-84-5	25	ND	µg/L
Tris(1-aziridinyl)phosphine oxide (TEPA)	545-55-1	25	ND	µg/L
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8	25	ND	µg/L
Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	25	ND	µg/L
Tris(2,3-dibromopropyl) phosphate (TRIS)	126-72-7	25	ND	µg/L
Decabromobiphenyl (DecaBB)	13654-09-6	25	ND	µg/L
Dibromobiphenyls (DiBB)	Multiple	25	ND	µg/L
Octabromobiphenyls (OctaBB)	Multiple	25	ND	µg/L
Dibromopropylether	21850-44-2	25	ND	µg/L
Heptabromodiphenyl ether (HeptaBDE)	68928-80-3	25	ND	µg/L
Hexabromodiphenyl ether (HexaBDE)	36483-60-0	25	ND	µg/L
Monobromobiphenyls (MonoBB)	Multiple	25	ND	µg/L
Monobromodiphenylethers (MonoBDEs)	Multiple	25	ND	µg/L
Nonabromobiphenyls (NonaBB)	Multiple	25	ND	µg/L
Nonabromodiphenyl ether (NonaBDE)	63936-56-1	25	ND	µg/L
Tetrabromodiphenyl ether (TetraBDE)	40088-47-9	25	ND	µg/L
Tribromodiphenylethers (TriBDEs)	Multiple	25	ND	µg/L
Boric acid	10043-35-3 11113-50-1	100 in Boron	ND	µg/L
Diboron trioxide	1303-86-2	100 in Boron	ND	µg/L
Disodium octaborate	12008-41-2	100 in Boron	ND	µg/L
Disodium tetraborate anhydrous	1303-96-4 1330-43-4	100 in Boron	ND	µg/L
Tetraboron disodium heptaoxide, hydrate	12267-73-1	100 in Boron	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

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11. Glycols / Glycol Ethers

With reference to US EPA 8270E, Liquid extraction, LC-MS or GC-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
2-ethoxyethanol	110-80-5	50	ND	µg/L
2-ethoxyethyl acetate	111-15-9	50	ND	µg/L
2-methoxyethanol	109-86-4	50	ND	µg/L
2-methoxyethylacetate	110-49-6	50	ND	µg/L
2-methoxypropylacetate	70657-70-4	50	ND	µg/L
Bis(2-methoxyethyl)-ether	111-96-6	50	ND	µg/L
Ethylene glycol dimethyl ether	110-71-4	50	ND	µg/L
Triethylene glycol dimethyl ether	112-49-2	50	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

12. Halogenated solvents

With reference to USEPA 8260D, Headspace GC-MS or Purge and trap GC-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
1,2-Dichloroethane	107-06-2	1	ND	µg/L
Methylene chloride	75-09-2	1	ND	µg/L
Tetrachloroethylene	127-18-4	1	ND	µg/L
Trichloroethylene	79-01-6	1	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

13. Organotin compounds

With reference to ISO 17353, Derivatisation with NaB (C₂H₅)₄, with GC-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Dipropyltin compounds (DPT)	Multiple	0.01	ND	µg/L
Mono-, di- and tri-butyltin derivatives	Multiple	0.01	ND	µg/L
Mono, di-, and tri-methyltin derivatives	Multiple	0.01	ND	µg/L
Mono, di-, and tri-octyltin derivatives	Multiple	0.01	ND	µg/L
Mono, di-, and tri-phenyltin derivatives	Multiple	0.01	ND	µg/L
Tetrabutyltin compounds (TeBT)	Multiple	0.01	ND	µg/L
Tripropyltin Compounds (TPT)	Multiple	0.01	ND	µg/L
Tetraoctyltin compounds (TeOT)	Multiple	0.01	ND	µg/L
Tricyclohexyltin (TCyHT)	Multiple	0.01	ND	µg/L
Tetraethyltin Compounds (TeET)	Multiple	0.01	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

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14. Other/Miscellaneous Chemicals

Others: With reference to Liquid extraction, LC-MS-MS analysis.
Borate salt: determined as total boron and total zinc via ICP analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
AEEA [2-(2-aminoethylamino)ethanol]	111-41-1	500	ND	µg/L
Bisphenol A	80-05-7	10	ND	µg/L
Thiourea	62-56-6	50	ND	µg/L
Quinoline	91-22-5	50	ND	µg/L
Borate, zinc salt	12767-90-7	100 in Boron	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

15. Perfluorinated & polyfluorinated chemicals (PFCs)

PFCs: With reference to EPA 537:2020 with LC-MSMS
FTOH: With reference to BS EN 12673-1999, EPA 8270, GC-MS, Derivatization with acetic anhydride followed by GC-MS

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	Multiple	0.01	ND	µg/L
Perfluorooctanoic acid (PFOA) related substances	Multiple	1	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

16. Phthalates – including all other esters of ortho-phthalic acid

With reference to USEPA 8270E, ISO 18856, Dichloromethane extraction GC-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	10	ND	µg/L
1,2-benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUF)	68515-42-4	10	ND	µg/L
Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	10	ND	µg/L
Butyl benzyl phthalate (BBP)	85-68-7	10	ND	µg/L
Di-cyclohexyl phthalate (DCHP)	84-61-7	10	ND	µg/L
Di-iso-decyl phthalate (DIDP)	26761-40-0	10	ND	µg/L
Di-iso-octyl phthalate (DIOP)	27554-26-3	10	ND	µg/L

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Di-isobutyl phthalate (DIBP)	84-69-5	10	ND	µg/L
Di-isononyl phthalate (DINP)	28553-12-0	10	ND	µg/L
Di-n-hexyl phthalate (DnHP)	84-75-3	10	ND	µg/L
Di-n-octyl phthalate (DNOP)	117-84-0	10	ND	µg/L
Di-n-pentylphthalates	131-18-0	10	ND	µg/L
Di-n-propyl phthalate (DPRP)	131-16-8	10	ND	µg/L
Di(ethylhexyl) phthalate (DEHP)	117-81-7	10	ND	µg/L
Dibutyl phthalate (DBP)	84-74-2	10	ND	µg/L
Diethyl phthalate (DEP)	84-66-2	10	ND	µg/L
Diisopentylphthalates	605-50-5	10	ND	µg/L
Dinonyl phthalate (DNP)	84-76-4	10	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

17. Polycyclic aromatic hydrocarbons (PAHs)

With reference to US EPA 8270E, DIN 38407-39, solvent extraction GC-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Acenaphthene	83-32-9	1	ND	µg/L
Acenaphthylene	208-96-8	1	ND	µg/L
Anthracene	120-12-7	1	ND	µg/L
Benzo[a]anthracene	56-55-3	1	ND	µg/L
Benzo[a]pyrene (BaP)	50-32-8	1	ND	µg/L
Benzo[b]fluoranthene	205-99-2	1	ND	µg/L
Benzo[e]pyrene	192-97-2	1	ND	µg/L
Benzo[ghi]perylene	191-24-2	1	ND	µg/L
Benzo[j]fluoranthene	205-82-3	1	ND	µg/L
Benzo[k]fluoranthene	207-08-9	1	ND	µg/L
Chrysene	218-01-9	1	ND	µg/L
Dibenz[a,h]anthracene	53-70-3	1	ND	µg/L
Fluoranthene	206-44-0	1	ND	µg/L
Fluorene	86-73-7	1	ND	µg/L
Indeno[1,2,3-cd]pyrene	193-39-5	1	ND	µg/L
Naphthalene	91-20-3	1	ND	µg/L
Phenanthrene	85-01-8	1	ND	µg/L
Pyrene	129-00-0	1	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

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18. Restricted Aromatic Amines (Cleavable from Azo-colourants)

With reference to reduction step with sodium dithionite, solvent extraction, EPA 8270E and ISO 14362-1 with GC-MS and LC-MS-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
2-Naphthylamine	91-59-8	0.1	ND	µg/L
2-Naphthylammoniumacetate	553-00-4	0.1	ND	µg/L
2,4-Xylidine	95-68-1	0.1	ND	µg/L
2,4,5-Trimethylaniline	137-17-7	0.1	ND	µg/L
2,4,5-Trimethylaniline hydrochloride	21436-97-5	0.1	ND	µg/L
2,6-Xylidine	87-62-7	0.1	ND	µg/L
3,3'-Dichlorobenzidine	91-94-1	0.1	ND	µg/L
3,3'-Dimethoxybenzidine	119-90-4	0.1	ND	µg/L
3,3'-Dimethylbenzidine	119-93-7	0.1	ND	µg/L
4-Aminoazobenzene	60-09-3	0.1	ND	µg/L
4-Aminodiphenyl	92-67-1	0.1	ND	µg/L
4-Chloro-o-toluidine	95-69-2	0.1	ND	µg/L
4-Chloro-o-toluidinium chloride	3165-93-3	0.1	ND	µg/L
4-Chloroaniline	106-47-8	0.1	ND	µg/L
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	39156-41-7	0.1	ND	µg/L
4-methoxy-m-phenylenediamine	615-05-4	0.1	ND	µg/L
4-methyl-m-phenylenediamine	95-80-7	0.1	ND	µg/L
4,4'-Methylene-bis(2-chloroaniline)	101-14-4	0.1	ND	µg/L
4,4'-methylenedi-o-toluidine	838-88-0	0.1	ND	µg/L
4,4'-methylenedianiline	101-77-9	0.1	ND	µg/L
4,4'-Oxydianiline	101-80-4	0.1	ND	µg/L
4,4'-Thiodianiline	139-65-1	0.1	ND	µg/L
5-Nitro-o-toluidine	99-55-8	0.1	ND	µg/L
6-methoxy-m-toluidine	120-71-8	0.1	ND	µg/L
Benzidine	92-87-5	0.1	ND	µg/L
o-Aminoazotoluene	97-56-3	0.1	ND	µg/L
o-Anisidine	90-04-0	0.1	ND	µg/L
o-Toluidine	95-53-4	0.1	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

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19. UV Absorbers

With reference to USEPA 8270, ISO 22032, USEPA 527 and USEPA 8321B, dichloromethane extraction GC-MS or LC-MS-MS analysis.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	36437-37-3	100	ND	µg/L
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	100	ND	µg/L
2-benzotriazol-2-yl-4,6-di-tertbutylphenol (UV-320)	3846-71-7	100	ND	µg/L
2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327)	3864-99-1	100	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

20. Volatile organic compounds (VOCs)

With reference to ISO 11423-1 Headspace or Purge and trap, GC-MS analysis. USEPA 8260D, add ISO 20595 static headspace for determination of VOC in wastewater

With reference to ISO 11423-1 Headspace or Purge and trap, GC-MS analysis. EPA 8270, BS EN 12673-1999.

With reference to HJ 1067 or EPA 8260D or ISO 11423-1.

Chemical substances	CAS no.	Reporting limit (µg/L)	Untreated wastewater	Unit
Benzene	71-43-2	1	ND	µg/L
m-cresol	108-39-4	1	ND	µg/L
o-cresol	95-48-7	1	ND	µg/L
p-cresol	106-44-5	1	ND	µg/L
Xylene	1330-20-7	1	ND	µg/L
Toluene (*)	108-88-3	1	ND	µg/L

Remark: ND = Not detected (less than reporting limit)

(*) Report for mock leather only.

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21. Heavy metals

With reference to ISO 17294, ISO 18412, US EPA 200.8, USEPA 6010C, USEPA 6020A, USEPA 218.6, USEPA 200.8-SIM USEPA 6020A-SIM, USEPA 245.1, USEPA 245.7, HJ 700, GB 7467, GB 7475, GB 11912. GB 11907, GB 7472, HJ 597, HJ 694, IS 3025 (Part 65), IS 3025 (Part 52), IS 3025 (Part 41), IS 3025 (Part 42), IS 3025 (Part 47), IS 3025 (Part 54), IS 3025 (Part 49), IS 3025 (Part 48 cold vapor), IS 3025 (Part 65-SI).

Chemical substances	Limit			Reporting limit (mg/L)	Effluent	Unit
	Foundational	Progressive	Aspirational			
Antimony	0.1 mg/L	0.05 mg/L	0.01 mg/L	0.01	ND	mg/L
Chromium (VI)	0.05 mg/L	0.005 mg/L	0.001 mg/L	0.001	ND	mg/L
Barium	Sample and report only			0.01	ND	mg/L
Selenium	Sample and report only			0.01	ND	mg/L
Tin	Sample and report only			0.01	ND	mg/L
Arsenic	0.05 mg/L	0.01 mg/L	0.005 mg/L	0.005	ND	mg/L
Chromium (total)	0.2 mg/L	0.1 mg/L	0.05 mg/L	0.05	ND	mg/L
Cobalt	0.05 mg/L	0.02 mg/L	0.01 mg/L	0.01	ND	mg/L
Cadmium	0.1 mg/L	0.05 mg/L	0.01 mg/L	0.01	ND	mg/L
Copper	1 mg/L	0.5 mg/L	0.25 mg/L	0.25	ND	mg/L
Lead	0.1 mg/L	0.05 mg/L	0.01 mg/L	0.01	ND	mg/L
Nickel	0.2 mg/L	0.1 mg/L	0.05 mg/L	0.05	ND	mg/L
Silver	0.1 mg/L	0.05 mg/L	0.005 mg/L	0.005	ND	mg/L
Zinc	5.0 mg/L	1.0 mg/L	0.5 mg/L	0.5	ND	mg/L
Mercury	0.01 mg/L	0.005 mg/L	0.001 mg/L	0.001	ND	mg/L

Remark: ND = Not detected (less than reporting limit)

22. Conventional parameters

Parameters	Test method	Limit			Reporting limit	Effluent	Unit
		Foundational	Progressive	Aspirational			
pH	ISO 10523 / USEPA 150.1 / SM 4500-H+ / HJ 1147 / IS 3025 (Part 11) Electrometric method only	6-9			N/A	7.8	[f]
Temperature difference	DIN 38 404-4 / USEPA 170.1 / SM 2550 / GB/T 13195 / IS 3025 (Part 9)	△+15 °C	△+10 °C	△+5 °C	N/A	△+3	[f] °C
E.coli	SM 9221B presumptive, confirm positive with SM9221 F or G	126 MPN/100-ml			1.8 MPN/100-ml	28	MPN/100-ml
Colour (436 nm; 525 nm; 620 nm)	ISO 7887-B	7;5;3 [m ⁻¹]	5;3;2 [m ⁻¹]	2;1;1 [m ⁻¹]	N/A	1.8; 2.0; 1.9	[m ⁻¹]

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Persistent Foam	/	No indication of Persistent foam in receiving water			N/A	Absent	[f]
Wastewater Flowrate	/	N/A			N/A	1200	[f] m ³ /day
Ammonium-Nitrogen	ISO 11732 / ISO 7150 / USEPA 350.1 / USEPA 350.3 / SM 4500 NH3 - D, E, F, G, or H / HJ 535 / IS 3025 (Part 34)	10 mg/L	1 mg/L	0.5 mg/L	0.5 mg/L	ND	mg/L
AOX	ISO 9562 / HACH LCK 390 Merck 1.00675.0001 / HJ/T 83	3 mg/L	0.5 mg/L	0.1 mg/L	0.1 mg/L	ND	mg/L
Biochemical Oxygen Demand (BOD ₅)	ISO 5815-1 / USEPA 405.1 / SM 5210-B / HJ 505 / IS 3035 (Part 44)	30 mg/L	15 mg/L	8 mg/L	8 mg/L	ND	mg/L
Chemical Oxygen Demand (COD)	ISO 6060 / ISO 15705 / USEPA 410.4 / SM 5220-D / HJ 828 / GB/T 11914 e / IS 3025 (Part 58)	150 mg/L	80 mg/L	40 mg/L	40 mg/L	ND	mg/L
Dissolved Oxygen (DO)	ISO 5814 / EPA 360.1 / SM 4500-O-G / HJ 506	Sample and report only			N/A	6.1	[f] mg/L
Oil and grease	ISO 9377-2 / SM 5520-B/C / USEPA 1664 revision B / HJ 637 / IS 3025 (Part 39)	10 mg/L	2 mg/L	0.5 mg/L	0.5 mg/L	ND	mg/L
Total Phenols / Phenol Index	ISO 6439 / SM 5530-B/C / HJ 503 / IS 3025 (Part 43)	0.5 mg/L	0.01 mg/L	0.001 mg/L	0.001 mg/L	0.047	mg/L
Total Chlorine	ISO 7393-2 / USEPA 330.5 / SM4500-Cl-G / HJ 586	Sample and report only			0.2 mg/L	ND	[f] mg/L
Total Dissolved Solids (TDS)	SM 2540-C / USEPA 160.1 / GB/T 5750.4-2006 / IS 3025 (Part 16)	Sample and report only			10 mg/L	612	mg/L
Total-Nitrogen	ISO 11905 - Part 1 / ISO 29441 / USEPA 351.2 / SM 4500P-J / SM 4500N-B / SM 4500N-C / HJ 636 / IS 3025 (Part 34)	20 mg/L	10 mg/L	5 mg/L	5 mg/L	ND	mg/L
Total-Phosphorus	ISO 17294 / ISO 11885 / ISO 6878 / USEPA 365.4 / SM 4500P-J / USEPA 200.7 / USEPA 200.8 / USEPA 6010C / USEPA 6020A / GB/T 11893 / IS 3025 (Part 31) / IS 3025 (Part 65)	3 mg/L	0.5 mg/L	0.1 mg/L	0.1 mg/L	0.2	mg/L
Total Suspended Solids (TSS)	ISO 11923 / USEPA 160.2 / SM 2540D / GB/T 11901 / IS3025 (Part 17)	50 mg/L	15 mg/L	5 mg/L	5 mg/L	ND	mg/L

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Chloride	ISO 10304-1 / ISO 15923-1 / SM 4110-B / SM 4110-C / SM 4500-CI D or E / USEPA 300 / HJ 84-2016 / IS 3025 (Part 32)	Sample and report only			10 mg/L	392	mg/L
Cyanide, total	ISO 6703 – 1, 2, 3 / ISO 14403 – 1, 2 / USEPA 335.2, APHA 4500-CN / HJ484	0.2 mg/L	0.1 mg/L	0.05 mg/L	0.05 mg/L	ND	mg/L
Sulfate	ISO 10304-1 / ISO 15923-1 / SM 4500 SO ₄ , E, F, G / SM 4100 B, C / USEPA 300 / USEPA 9038 / HJ 84-2016 / IS 3025 (Part 24)	Sample and report only			10 mg/L	283	mg/L
Sulfide	ISO 10530 / SM 4500-S2-D, E,G, or I / HJ 1226 / IS 3025 (Part 29)	0.5 mg/L	0.05 mg/L	0.01 mg/L	0.01 mg/L	0.05	mg/L
Sulfite	ISO 10304-3 / SM 4500-SO ₃ 2-C / HJ 84-2016	2 mg/L	0.5 mg/L	0.2 mg/L	0.2 mg/L	0.7	mg/L

Remark:

ND = Not detected (less than reporting limit)

△ is the degree above ambient temperature of receiving water body.

@ = Maximum holding time exceeded.

^[f] = On-site test by sampler.

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Sample / Sludge

Sludge flux (weight/time) and / or flow data volume/time: N/A

1. Heavy metals

Other heavy metals: With reference to acid/peroxide digestion EPA 3050, EPA 6010D or EPA 6020B, HJ 803 with ICP/OES, or ICP-MS analysis.

Chromium VI: With reference to alkaline digestion USEPA 3060a, USEPA 7196 or USEPA 7199, HJ 1082 with Colourimetric UV/VIS, or Colourimetric IC analysis.

Mercury: With reference to Dissolution, acid digestion USEPA 7473, USEPA 7471 b, or USEPA 3051a, USEPA 7471b, or USEPA 6020b, GB/T 22105.1, HJ 923 with CVAA or ICP MS analysis.

Chemical substances	Reporting limit (Dry weight) (mg/kg)	Sludge (Dry weight)	Unit
Antimony	5	ND	mg/kg
Arsenic	5	ND	mg/kg
Barium	200	ND	mg/kg
Cadmium	1	ND	mg/kg
Cobalt	400	ND	mg/kg
Copper	50	ND	mg/kg
Lead	5	ND	mg/kg
Nickel	20	ND	mg/kg
Selenium	5	ND	mg/kg
Silver	50	ND	mg/kg
Total Chromium	50	ND	mg/kg
Zinc	400	ND	mg/kg
Chromium (VI)	20	ND	mg/kg
Mercury	1	ND	mg/kg

Remark: ND = Not detected (less than reporting limit)
 @ = Maximum holding time exceeded.

2. Anions

With reference to USEPA 9013, USEPA 9014, USEPA 9213, HJ745 with Colourimetry or ISE analysis.

Chemical substances	Reporting limit (Dry weight) (mg/kg)	Sludge (Dry weight)	Unit
Cyanide	20	ND	mg/kg

Remark: ND = Not detected (less than reporting limit)
 @ = Maximum holding time exceeded.

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3. Conventional parameters

Chemical substances	Test method	Reporting limit (Dry weight)	Sludge (Dry weight)	Unit
pH	USEPA SW 9045D / HJ962	N/A	7.3	N/A
% Solids	USEPA 160.3 / HJ613	N/A	88	%
Paint Filter Test ^	USEPA SW-846 / USEPA 9095B	N/A	Pass	N/A
Fecal Coliform	USEPA 1681	10 MPN/g	400	MPN/g

Remark: ND = Not detected (less than reporting limit)

@ = Maximum holding time exceeded.

^ - Report "Pass" when Paint Filter Test does not contain free liquid; Report "Fail" when Paint Filter Test does contain free liquid.

4. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers

With reference to USEPA 3540/3541, USEPA 3550, ISO 18857-2, ASTM D7065, ISO 18254-1, with GC-MS and LC-MS-MS analysis.

Chemical substances	CAS no.	Reporting limit (Dry weight) (mg/kg)	Sludge (Dry weight)	Unit
Nonylphenol ethoxylates (NPEO)	9016-45-9; 26027-38-3; 37205-87-1; 68412-54-4; 127087-87-0	0.4	ND	mg/kg
Nonylphenol (NP), mixed isomers	104-40-5; 11066-49-2; 25154-52-3; 84852-15-3	0.4	ND	mg/kg
Octylphenol ethoxylates (OPEO)	9002-93-1; 9036-19-5; 68987-90-6	0.4	ND	mg/kg
Octylphenol (OP), mixed isomers	140-66-9; 1806-26-4; 27193-28-8	0.4	ND	mg/kg

Remark: ND = Not detected (less than reporting limit)

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5. Polycyclic aromatic hydrocarbons (PAHs)

With reference to US EPA 3540/3541, US EPA 3550, US EPA 3640, US EPA 827, HJ 805-2016 with GC-MS analysis.

Chemical substances	CAS no.	Reporting limit (Dry weight) (mg/kg)	Sludge (Dry weight)	Unit
Acenaphthene	83-32-9	0.2	ND	mg/kg
Acenaphthylene	208-96-8	0.2	ND	mg/kg
Anthracene	120-12-7	0.2	ND	mg/kg
Benzo[a]anthracene	56-55-3	0.2	ND	mg/kg
Benzo[a]pyrene (BaP)	50-32-8	0.2	ND	mg/kg
Benzo[b]fluoranthene	205-99-2	0.2	ND	mg/kg
Benzo[e]pyrene	192-97-2	0.2	ND	mg/kg
Benzo[ghi]perylene	191-24-2	0.2	ND	mg/kg
Benzo[j]fluoranthene	205-82-3	0.2	ND	mg/kg
Benzo[k]fluoranthene	207-08-9	0.2	ND	mg/kg
Chrysene	218-01-9	0.2	ND	mg/kg
Dibenz[a,h]anthracene	53-70-3	0.2	ND	mg/kg
Fluoranthene	206-44-0	0.2	ND	mg/kg
Fluorene	86-73-7	0.2	ND	mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	0.2	ND	mg/kg
Naphthalene	91-20-3	0.2	ND	mg/kg
Phenanthrene	85-01-8	0.2	ND	mg/kg
Pyrene	129-00-0	0.2	ND	mg/kg

Remark: ND = Not detected (less than reporting limit)

6. Chlorotoluenes

With reference to US EPA 3540/3541, US EPA 3550, US EPA 3650, US EPA 827, HJ 605 with GC-MS analysis.

Chemical substances	CAS no.	Reporting limit (Dry weight) (mg/kg)	Sludge (Dry weight)	Unit
Other isomers of mono-, di-, tri-, tetra- and penta- chlorotoluene	Multiple	0.2	ND	mg/kg

Remark: ND = Not detected (less than reporting limit)

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7. Leachate heavy metals

With reference to toxicity leachate extraction procedure EPA 1311 followed by Acid digestion with ICP-OES, ICP-MS or USEPA 200.7, USEPA 200.8, USEPA 6010c, USEPA 6020a analysis.

Chromium VI: With reference to toxicity leachate extraction procedure EPA 1311 followed by ISO 18412, USEPA 7196 or USEPA 7199 Colourimetric UV/VIS, or Colourimetric IC analysis.

Mercury: With reference to toxicity leachate extraction procedure EPA 1311 followed by acid digestion EPA 7471b , EPA 3051a with ISO 12846 or ISO 17852, EPA 6020b CVAA or ICP MS analysis.

Chemical substances	Reporting limit (Dry weight) (mg/L)	Sludge	Unit
Arsenic	0.5	N/A	mg/L
Cadmium	0.15	N/A	mg/L
Total Chromium	5	N/A	mg/L
Lead	0.5	N/A	mg/L
Antimony	0.6	N/A	mg/L
Barium	35	N/A	mg/L
Cobalt	80	N/A	mg/L
Copper	10	N/A	mg/L
Nickel	3.5	N/A	mg/L
Selenium	0.5	N/A	mg/L
Silver	5	N/A	mg/L
Zinc	50	N/A	mg/L
Chromium (VI)	2.5	N/A	mg/L
Mercury	0.05	N/A	mg/L

Remark: ND = Not detected (less than reporting limit)

Testing period: From 29/12/2022 to 08/01/2023

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Appendix 1: reference to ZDHC WWSG v2.1 Table 4B

Parameters	Total metals and anions threshold values (mg/kg)	Disposal pathways						
		A and B (Leachate result in mg/L)	C (Leachate result in mg/L)	D (Leachate result in mg/L)	E (Leachate result in mg/L)	F (Leachate result in mg/L)	G (Leachate result in mg/L)	G (Total metals limit in mg/kg)
Arsenic	10	Report only if required to test	5	2.75	0.5	0.5	0.5	75
Cadmium	3		1	0.58	0.15	0.15	0.15	85
Total Chromium	100		15	10	5	5	5	3000
Lead	10		5	2.75	0.5	0.5	0.5	840
Antimony	12		15	7.8	0.6	0.6	0.6	Sample and report only
Barium	700		100	67.5	35	35	35	
Cobalt	1600		80	80	80	80	80	4300
Copper	200		25	17.5	10	10	10	
Nickel	70		20	11.75	3.5	3.5	3.5	420
Selenium	10		1	0.75	0.5	0.5	0.5	100
Silver	100		5	5	5	5	5	Sample and report only
Zinc	1000		250	150	50	50	50	7500
Chromium VI	50		5	3.75	2.5	2.5	2.5	50
Mercury	1		0.2	0.125	0.05	0.05	0.05	57

Appendix 2: reference to ZDHC WWSG v2.1 Table 4C

Parameters	Disposal pathways					
	A and B	C	D	E	F	G
pH	Sample and report only	5 – 11 s.u.	5 – 11 s.u.	5 – 11 s.u.	6.5 – 9 s.u.	6.5 – 9 s.u.
% Solids		Sample and report only	Sample and report only	Sample and report only	Sample and report only	Sample and report only
Fecal Coliform						
Paint Filter Test		Pass Paint filter test				Sample and report only
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers		< 0.4 mg/kg				
Polycyclic Aromatic Hydrocarbons (PAHs)		< 0.2 mg/kg				
Chlorotoluenes						

Appendix 2: reference to ZDHC WWSG v2.1 Table 4D

Parameters	Disposal pathways					
	A and B	C	D	E	F	G
Cyanide	Report only if required to test	100 mg/kg	85 mg/kg	70 mg/kg	70 mg/kg	70 mg/kg

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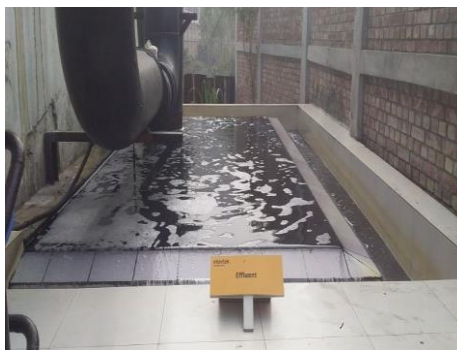
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Photo of sampling points:



Sampling point - Untreated wastewater



Sampling point - Effluent



Sampling point - Sludge

Photo of samples:



Sample - Untreated wastewater



Sample - Effluent



Sample - Sludge

End of report

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