Test Report

TÜVRheinland®
Precisely Right.

Report No.: **222466844** Date: 11-04-2025 *Page 1 of 48*

Customer :	KM Nobely Garments Ltd
Buyer's name:	Self Reference
Factory name:	KM Nobely Garments Ltd
Factory Address:	Zarun, Konabari, Gazipur-1346, Bangladesh
Discharge type of waste water:	Direct Discharge
Average total industrial wastewater generated:	≥15 m^3 per day
Disposal Pathways of Sludge:	C
Sample Type:	Untreated Wastewater, Effluent, Sludge
Arrival Temperature at Laboratory:	6^0C
Sampling Date:	25-03-2025
Testing Period:	25-03-2025 to 11-04-2025
Parameter(s) Exceeded:	No
Maximum holding Time	No
Onsite App (OA) No.	O-P-3989
Test Specification:	*ZDHC Wastewater Guidelines Version 2.2 (September,2024)*
Reference Sample Handling Method:	*ZDHC Sampling and analysis Plan (SAP) Version 2.1*
Test result:	*Please refer to page 02~04*

Other Information: /

Reviewed by

Mohammad Razibul Hossain /
Deputy Manager
Name/Position

Authorized by

11-04-2025
Date

Md. Amjad Hossain/
AGM, Laboratories Operation
Name/Position

Sample information is provided by customer. Test result is drawn according to the kind and extent of tests performed. The laboratory employs simple acceptance rule in making pass or fail decisions on test results with no guard band. The results relate only to the items tested. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

For any complaint: report.lab@bd.tuv.com or info-bd@bd.tuv.com

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Test specification:	**Test result summary**
	M001- Untreated Wastewater
ZDHC MRSL Wastewater Parameters	
Table 1A: Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): Including All Isomers	Comply
Table 1B: Anti- Microbials & Biocides	Comply
Table 1C: Chlorinated Parafins	Comply
Table 1D: Chlorobenzenes and Chlorotoluenes	Comply
Table 1E: Chlorophenols	Comply
Table 1F: N,N-di-Dimethyl Formamide (DMFa)	Comply
Table 1G: Dyes – Carcinogenic or Equivalent Concern	Comply
Table 1H: Dyes – Disperse (Allergenic)	Comply
Table 1I: Dyes – Navy Blue Colourant	Not Applicable
Table 1J: Flame Retardants	Comply
Table 1K: Glycols / Glycol Ethers	Comply
Table 1L: Halogenated Solvents	Comply
Table 1M: Organotin Compounds	Comply
Table 1N: Other/Miscellaneous Chemicals	Comply
Table 1O: Perfluorinated and Polyfluorinated Chemicals (PFCs)	Comply
Table 1P: Phthalates – including all other esters of ortho-phthalic acid	Comply
Table 1Q: Polycyclic Aromatic Hydrocarbons (PAHs)	Comply
Table 1R: Restricted Aromatic Amines (Cleavable from Azo-colourants)	Comply
Table 1S: UV Absorbers	Comply
Table 1T: Volatile Organic Compounds (VOC)	Comply

Test specification:	**Test result summary**
	M002- Effluent
ZDHC Heavy Metals Wastewater Parameters	
Table 2: Heavy Metals	Comply

Test specification:	**Test result summary** M002- Effluent
ZDHC Conventional Parameters and Anions	
Table 3: pH value	Comply
Table 3: Temperature difference	Comply
Table 3: E.coli	Comply
Table 3: Colour (436nm; 525nm; 620nm)	Comply
Table 3: Persistent Foam	Comply
Table 3: Wastewater Flowrate	Data
Table 3: Ammonium-Nitrogen	Comply
Table 3: AOX	Comply
Table 3: Biochemical Oxygen Demand 5-days concentration (BOD_5)	Comply
Table 3: Chemical Oxygen Demand (COD)	Comply
Table 3: Dissolved Oxygen (DO)	Comply
Table 3: Oil & Grease	Comply
Table 3: Total Phenols / Phenol Index	Comply
Table 3: Total Chlorine	Comply
Table 3: Total Dissolved Solids (TDS)	Data
Table 3: Total Nitrogen	Comply
Table 3: Total Phosphorus	Comply
Table 3: Total Suspended Solids (TSS)	Comply
Table 3: Chloride	Data
Table 3: Cyanide, total	Comply
Table 3: Dissolved anion – Sulfate	Data
Table 3: Dissolved anion - Sulfide (S^{2-})	Comply
Table 3: Dissolved anion - Sulfite	Comply

Test specification:	**Test result summary** M003- Sludge
4A: ZDHC MRSL Substances	
Table 4A.1: Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	Comply
Table 4A.2: Polycyclic Aromatic Hydrocarbons (PAHs)	Comply
Table 4A.3: Chlorotoluenes	Comply
4B: ZDHC Heavy Metals	
Table 4B: Heavy metals	Not Applicable
Table 4B: Leachate Metals	Not Applicable
4C: ZDHC Conventional Parameters and Anions	
Table 4C.1: pH	Not Applicable
Table 4C.2: Fecal Coliform	Not Applicable
Table 4C.3: % Solids	Data
Table 4C.4: Paint Filter Test	Not Applicable
Table 4C.5: Cyanide	Not Applicable

Sampling point

Water treatment area

Untreated Wastewater(sampling point):
lat: 23.9999141 lng: 90.3241099

Water treatment (sampling point)
lat:23.9999331 lng: 90.3239612

Sludge: Sludge place (sampling point)
23.9999132. lng: 90.3240879

Sampling time

Untreated Wastewater: Total Sample Volume: 11L							
	1	**2**	**3**	**4**	**5**	**6**	**Remark**
Sampling Time	10:00 AM	11:00 AM	12:00 PM	01:00 PM	02:00 PM	03:00 PM	

Effluent: Total Sample Volume: 19L							
	1	**2**	**3**	**4**	**5**	**6**	**Remark**
Sampling Time	10:15 AM	11:15 AM	12:15 PM	01:15 PM	02:15 PM	03:15 PM	

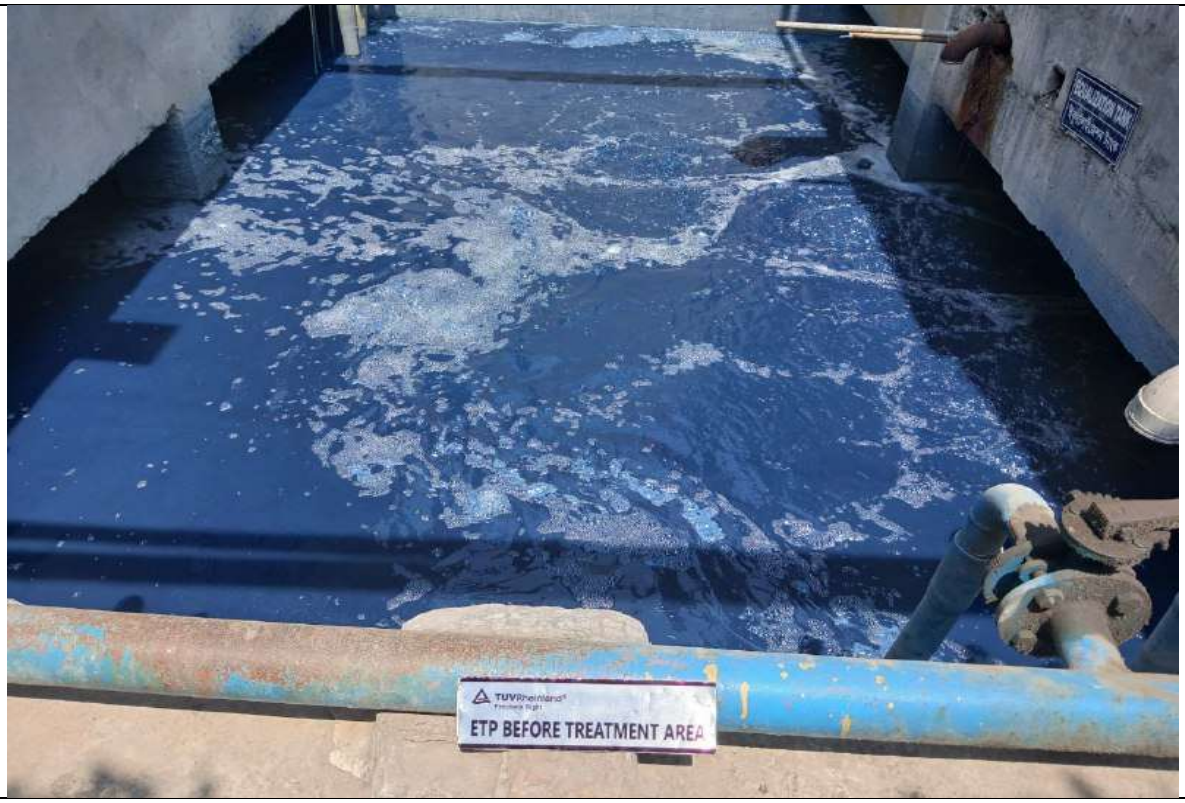
Sludge: Total Sample Size: 1 kg		
	1	**Remark**
Sampling Time	11:30 AM to 12.30 PM	

Sampler certificate no.: Rashed Uzzaman (ZDHC-A-23-E-C001068-R2737-0595D)

Sample storage condition: < 8 ^{o}C

Sampling (Photos)

M001- Untreated Wastewater



Sampling Date & Time: 25-03-2025, 10:00 AM

M002- Effluent

Sampling Date & Time: 25-03-2025, 10:15 AM

M003- Sludge

Sampling Date & Time: 25-03-2025, 11:30 AM

Foam in Aeration Tank

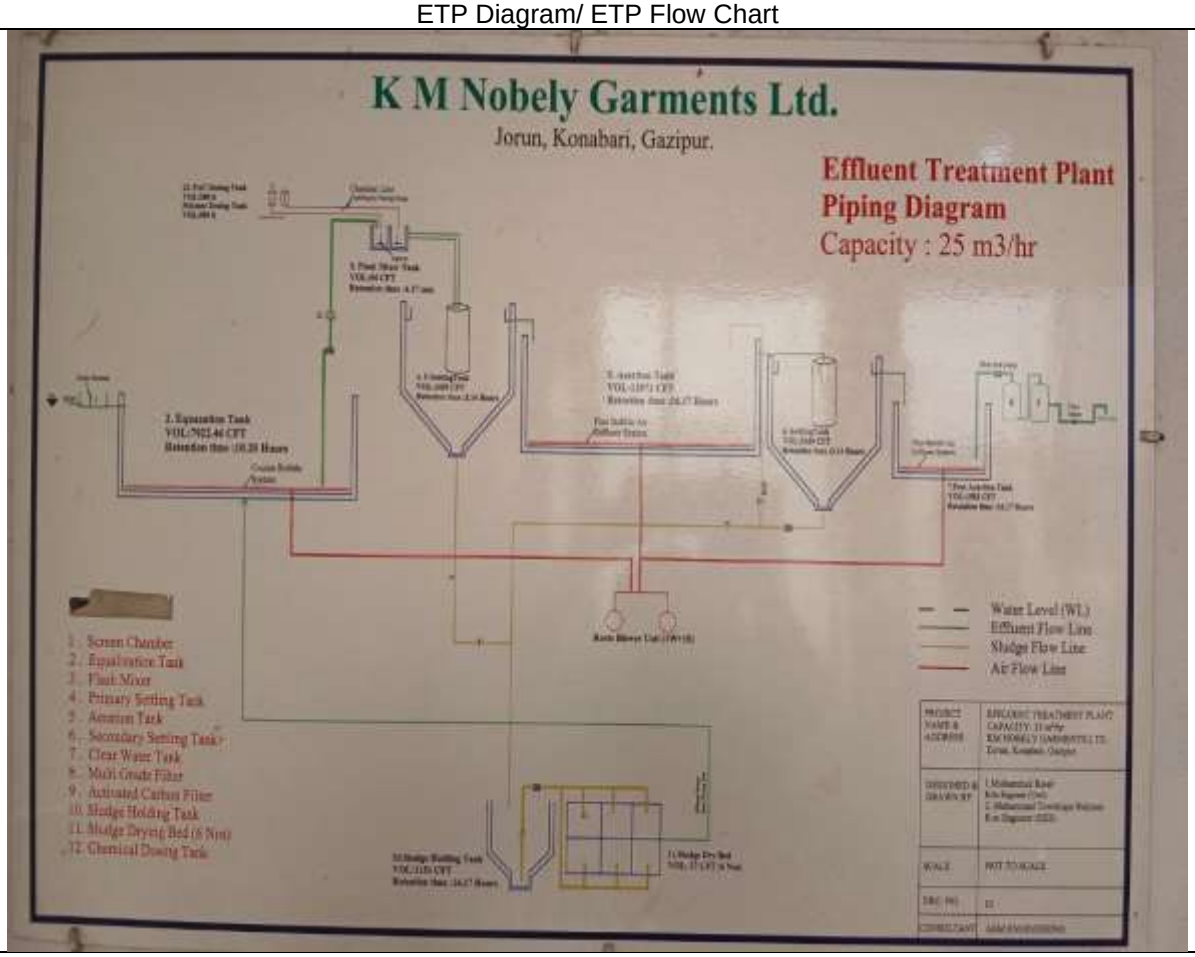
ETP Outlet Flow Meter

Factory Entrance

Factory Map


KM NOBELY GARMENTS LTD.
EMERGENCY FIRE SAFETY & EVACUATION PLAN
জরুরী অগ্নি নিরাপত্তা ও বহির্গমন পরিকল্পনা
1st Floor
দ্বিতীয় তলা
OFFICE & DINING SECTION- অফিস এবং ডাইনিং সেকশন
Goods Area - গুডস এরিয়া
Goods Area - গুডস এরিয়া
Goods Area - গুডস এরিয়া
Goods Area - গুডস এরিয়া
Medical Room
Conference Room
Office Room
HR Office Room
LEGEND
K M NOBELY GARMENTS LTD.
LIVE LOAD PLAN OF 1ST FLOOR

ETP Diagram/ ETP Flow Chart



M001- Untreated Wastewater (Sample Bottle)

M002- Effluent (Sample Bottle)

M003- Sludge (Sample Bottle)

MATERIAL LIST

Material No.	Material	Sampling
M001	Blue	Untreated Wastewater
M002	Light Blue	Effluent
M003	Dark Grey	Sludge

TEST RESULT

ZDHC MRSL WASTEWATER PARAMETERS

Table 1A: Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): Including All Isomers
Test method: MS-0045536, Based on EN ISO 18857-2, ISO18254-1 determination by LC-MS

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
Nonylphenol ethoxylates (NPEO)	Multiple Including 9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	5	Textile and Leather: 5	n.d.
Nonylphenol (NP), mixed isomers	Multiple Including 104-40-5 11066-49-2 25154-52-3	5	Textile and Leather: 5	n.d.
Octylphenol ethoxylates (OPEO)	Multiple Including 9002-93-1 9036-19-5 68987-90-6	5	Textile and Leather: 5	n.d.
Octylphenol (OP), mixed isomers	Multiple Including 140-66-9 1806-26-4 27193-28-8	5	Textile and Leather: 5	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1B: Anti- Microbials & Biocides
Test method: USEPA 8270E:2018 Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS In House Work Instruction MS-0045503

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
o-Phenylphenol (+salts)	90-43-7	100	Textile: 100 Leather: /	n.d.
Triclosan	3380-34-5	100	Textile and Leather: 100	n.d.
Permethrin	Multiple including 52645-53-1	500	Textile and Leather: 500	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1C: Chlorinated Parafins
Test method: MS-0045531, Based on SCCPs (ISO 12010:2019), MCCPs (ISO 18219-2:2021) determination by GC-MS(NCI)

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
Medium-chain Chlorinated paraffins (MCCPs) (C14-C17)	85535-85-9	500	Textile and Leather: 500	n.d.
Short-Chain Chlorinated Paraffin (SCCPs) (C10'–C13)	85535-84-8	25	Textile and Leather: 25	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1D: Chlorobenzenes and Chlorotoluenes
Test method: MS-0045535, Based on USEPA 8260D, 8270E, Purge and Trap, Head Space, determination by GC-MS

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
1,2-dichlorobenzene	95-50-1	0.2	Textile and Leather: 0.2	n.d.
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- Chlorobenzene and mono-, di-, tri-, tetra- and penta- chlorotoluene	Multiple including 108-90-7 541-73-1 106-46-7 87-61-6 120-82-1 108-70-3 634-66-2 634-90-2 95-94-3 608-93-5 118-74-1 95-49-8 108-41-8 106-43-4 32768-54-0 95-73-8 19398-61-9 118-69-4 95-75-0 25186-47-4 7359-72-0 2077-46-5 6639-30-1 23749-65-7 21472-86-6 1006-32-2 875-40-1 1006-31-1 877-11-2	0.2	Textile and Leather: 0.2	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1E: Chlorophenols
Test method: MS-0045533, Based on USEPA 8270E, BS EN 12673-1999, determination by GC-MS

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
2-chlorophenol	95-57-8	0.5	Textile and Leather: 0.5	n.d.
3-chlorophenol	108-43-0	0.5	Textile and Leather: 0.5	n.d.
4-chlorophenol	106-48-9	0.5	Textile and Leather: 0.5	n.d.
2,3-dichlorophenol	576-24-9	0.5	Textile and Leather: 0.5	n.d.
2,4-dichlorophenol	120-83-2	0.5	Textile and Leather: 0.5	n.d.
2,5-dichlorophenol	583-78-8	0.5	Textile and Leather: 0.5	n.d.
2,6-dichlorophenol	87-65-0	0.5	Textile and Leather: 0.5	n.d.
3,4-dichlorophenol	95-77-2	0.5	Textile and Leather: 0.5	n.d.
3,5-dichlorophenol	591-35-5	0.5	Textile and Leather: 0.5	n.d.
2,3,4-trichlorophenol	15950-66-0	0.5	Textile and Leather: 0.5	n.d.
2,3,5-trichlorophenol	933-78-8	0.5	Textile and Leather: 0.5	n.d.
2,3,6-trichlorophenol	933-75-5	0.5	Textile and Leather: 0.5	n.d.
2,4,5-trichlorophenol	95-95-4	0.5	Textile and Leather: 0.5	n.d.
2,4,6-trichlorophenol	88-06-2	0.5	Textile and Leather: 0.5	n.d.
3,4,5-trichlorophenol	609-19-8	0.5	Textile and Leather: 0.5	n.d.
2,3,5,6-tetrachlorophenol	935-95-5	0.5	Textile and Leather: 0.5	n.d.
2,3,4,6-tetrachlorophenol	58-90-2	0.5	Textile and Leather: 0.5	n.d.
2,3,4,5-tetrachlorophenol	4901-51-3	0.5	Textile and Leather: 0.5	n.d.
Pentachlorophenol (PCP)	87-86-5	0.5	Textile and Leather: 0.5	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1F: N,N-di-Dimethyl Formamide (DMFa)
Test method: EPA 8015, EPA 8270 E, determination by GC-MS

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
Dimethyl formamide; N,N-dimethylformamide (DMFa)	68-12-2	1000	Textile: 1000 Leather: /	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1G: Dyes – Carcinogenic or Equivalent Concern
Test method: MS-0045537, Based on Liquid extraction, determination by LC-MS/MS Based on DIN 54231-2022

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
Basic violet 3 with >0.1% of Michler´s Ketone	548-62-9	500	Textile and Leather: 500	n.d.
C.I. Acid Red 26	3761-53-3	500	Textile and Leather: 500	n.d.
C.I. Acid Violet 49	1694-09-3	500	Textile and Leather: 500	n.d.
C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5	500	Textile and Leather: 500	n.d.
C.I. Basic Green 4 (Malachite Green Chloride)	569-64-2	500	Textile and Leather: 500	n.d.
C.I. Basic Green 4 (Malachite Green Oxalate)	2437-29-8	500	Textile and Leather: 500	n.d.
C.I. Basic Green 4 (Malachite Green)	10309-95-2	500	Textile and Leather: 500	n.d.
C.I. Basic Red 9	569-61-9	500	Textile and Leather: 500	n.d.
C.I. Basic Violet 14	632-99-5	500	Textile and Leather: 500	n.d.
C.I. Direct Black 38	1937-37-7	500	Textile and Leather: 500	n.d.
C.I. Direct Blue 6	2602-46-2	500	Textile and Leather: 500	n.d.
C.I. Direct Red 28	573-58-0	500	Textile and Leather: 500	n.d.
C.I. Disperse Blue 1	2475-45-8	500	Textile and Leather: 500	n.d.
C.I. Disperse Blue 3	2475-46-9	500	Textile and Leather: 500	n.d.
C.I. Disperse Orange 11	82-28-0	500	Textile and Leather: 500	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1H: Dyes – Disperse (Allergenic)
Test method: MS-0045537, Based on Liquid extraction, determination by LC-MS/MS Based on DIN 54231-2022

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
Disperse Blue 102	12222-97-8	50	Textile only: 50	n.d.
Disperse Blue 106	12223-01-7	50	Textile only: 50	n.d.
Disperse Blue 124	61951-51-7	50	Textile only: 50	n.d.
Disperse Blue 26	3860-63-7	50	Textile only: 50	n.d.
Disperse Blue 35	12222-75-2	50	Textile only: 50	n.d.
Disperse Blue 35	56524-77-7	50	Textile only: 50	n.d.
Disperse Blue 7	3179-90-6	50	Textile only: 50	n.d.
Disperse Brown 1	23355-64-8	50	Textile only: 50	n.d.
Disperse Orange 1	2581-69-3	50	Textile only: 50	n.d.
Disperse Orange 3	730-40-5	50	Textile only: 50	n.d.
Disperse Orange 37/59/76	13301-61-6	50	Textile only: 50	n.d.
Disperse Red 1	2872-52-8	50	Textile only: 50	n.d.
Disperse Red 11	2872-48-2	50	Textile only: 50	n.d.
Disperse Red 17	3179-89-3	50	Textile only: 50	n.d.
Disperse Yellow 1	119-15-3	50	Textile only: 50	n.d.
Disperse Yellow 3	2832-40-8	50	Textile only: 50	n.d.
Disperse Yellow 39	12236-29-2	50	Textile only: 50	n.d.
Disperse Yellow 49	54824-37-2	50	Textile only: 50	n.d.
Disperse Yellow 9	6373-73-5	50	Textile only: 50	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1J*:* Flame Retardants
Test method: MS-0045539, MS-0045540, MS-0045541, MS-0045542, MS-0045610, Based on USEPA 8270E, EN ISO 22032, USEPA 527 & USEPA 8321B determination by GC-MS & (total boron via ICP-MS)

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001(µg/L)
2,2-bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	25	Textile and Leather: 25	n.d.
Bis(2,3-dibromopropyl) phosphate (BDBPP)	5412-25-9	25	Textile and Leather: 25	n.d.
Decabromodiphenyl ether (DecaBDE)	1163-19-5	25	Textile and Leather: 25	n.d.
Hexabromocyclodecane (HBCDD)	3194-55-6	25	Textile and Leather: 25	n.d.
Octabromodiphenyl ether (OctaBDE)	32536-52-0	25	Textile and Leather: 25	n.d.
Pentabromodiphenyl ether (PentaBDE)	32534-81-9	25	Textile and Leather: 25	n.d.
Polybromobiphenyls (PBB)	59536-65-1	25	Textile and Leather: 25	n.d.
Tetrabromobisphenol A (TBBPA)	79-94-7	25	Textile and Leather: 25	n.d.
Tris-(2-chloro-1-methylethyl) phosphate (TCPP)	13674-84-5	25	Textile and Leather: 25	n.d.
Tris(1-aziridinyl)phosphine oxide) (TEPA)	545-55-1	25	Textile and Leather: 25	n.d.
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8	25	Textile and Leather: 25	n.d.
Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	25	Textile and Leather: 25	n.d.
Tris(2,3,-dibromopropyl)-phosphate (TRIS)	126-72-7	25	Textile and Leather: 25	n.d.
Decabromobiphenyl (DecaBB)	13654-09-6	25	Textile and Leather: 25	n.d.
Dibromobiphenyls (DiBB)	Multiple	25	Textile and Leather: 25	n.d.
Octabromobiphenyls (OctaBB)	Multiple	25	Textile and Leather: 25	n.d.
Dibromopropylether	21850-44-2	25	Textile and Leather: 25	n.d.
Heptabromodiphenyl ether (HeptaBDE)	68928-80-3	25	Textile and Leather: 25	n.d.
Hexabromodiphenyl ether (HexaBDE)	36483-60-0	25	Textile and Leather: 25	n.d.
Monobromobiphenyls (MonoBB)	Multiple	25	Textile and Leather: 25	n.d.
Monobromodiphenylethers (MonoBDEs)	Multiple	25	Textile and Leather: 25	n.d.
Nonabromobiphenyls (NonaBB)	Multiple	25	Textile and Leather: 25	n.d.
Nonabromodiphenyl ether (NonaBDE)	63936-56-1	25	Textile and Leather: 25	n.d.
Tetrabromodiphenyl ether (TetraBDE)	40088-47-9	25	Textile and Leather: 25	n.d.
Tribromodiphenylethers (TriBDEs)	Multiple	25	Textile and Leather: 25	n.d.
Boric acid	10043-35-3 11113-50-1	500	Textile and Leather: 500	n.d.
Diboron trioxide	1303-86-2	500	Textile and Leather: 500	n.d.
Disodium octaborate	12008-41-2	500	Textile and Leather: 500	n.d.
Disodium tetraborate anhydrous	1303-96-4 1330-43-4	500	Textile and Leather: 500	n.d.
Tetraboron disodium heptaoxide, hydrate	12267-73-1	500	Textile and Leather: 500	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting

Table 1K*:* Glycols / Glycol Ethers
Test method: In House MS-0045544,USEPA 8270E:2018 (determination by GC-MS/LC-MS)

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
2-ethoxyethanol	110-80-5	50	Textile and Leather: 50	n.d.
2-ethoxyethyl acetate	111-15-9	50	Textile and Leather: 50	n.d.
2-methoxyethanol	109-86-4	50	Textile and Leather: 50	n.d.
2-methoxyethylacetate	110-49-6	50	Textile and Leather: 50	n.d.
2-methoxypropylacetate	70657-70-4	50	Textile and Leather: 50	n.d.
Bis(2-methoxyethyl)-ether	111-96-6	50	Textile and Leather: 50	n.d.
Ethylene glycol dimethyl ether	110-71-4	50	Textile and Leather: 50	n.d.
Triethylene glycol dimethyl ether	112-49-2	50	Textile and Leather: 50	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1L*:* Halogenated Solvents
Test method: MS-0045545, Based on US EPA 8260 D:2017, Headspace, determination by GC-MS

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
1,2-dichloroethane	107-06-2	1	Textile and Leather: 1	n.d.
Methylene chloride	75-09-2	1	Textile and Leather: 1	n.d.
Tetrachloroethylene	127-18-4	1	Textile and Leather: 1	n.d.
Trichloroethylene	79-01-6	1	Textile and Leather: 1	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1M*:* Organotin Compounds
Test method: MS-0045534, Based on ISO 17353 (Liquid Extraction, determination by GC-MS)

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
Dipropyltin compounds (DPT)	Multiple including 867-36-7	0.01	Textile and Leather: 0.01	n.d.
Mono-, di- and tri-butyltin derivatives	Multiple including 1118-46-3 1461-22-9	0.01	Textile and Leather: 0.01	n.d.
Mono-, di- and tri-methyltin derivatives	Multiple including 993-16-8 753-73-1 1066-45-1	0.01	Textile and Leather: 0.01	n.d.
Mono-, di- and tri-octyltin derivatives	Multiple including 3091-25-6 3542-36-7 2587-76-0	0.01	Textile and Leather: 0.01	n.d.
Mono-, di- and tri-phenyltin derivatives	Multiple including 1124-19-2 1135-99-5	0.01	Textile and Leather: 0.01	n.d.
Tetrabutyltin compounds (TeBT)	Multiple including 1461-25-2	0.01	Textile and Leather: 0.01	n.d.
Tripropyltin Compounds (TPT)	Multiple including 2279-76-7	0.01	Textile and Leather: 0.01	n.d.
Tetraoctyltin compounds (TeOT)	Multiple including 3590-84-9	0.01	Textile and Leather: 0.01	n.d.
Tricyclohexyltin (TCyHT)	Multiple including 3091-32-5	0.01	Textile and Leather: 0.01	n.d.
Tetraethyltin Compounds (TeET)	Multiple including 597-64-8	0.01	Textile and Leather: 0.01	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1N: Other/Miscellaneous Chemicals
Test method: MS-0045504, Based on Liquid extraction, determination by LC-MS/MS
Borate, zinc salt: Determined as total boron and total zinc via ICP-MS

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
AEEA [2-(2-aminoethylamino)ethanol]	111-41-1	500	Textile and Leather: 500	n.d.
Bisphenol A	80-05-7	10	Textile and Leather: 10	n.d.
Thiourea	62-56-6	50	Textile and Leather: 50	n.d.
Quinoline	91-22-5	50	Textile and Leather: 50	n.d.
Borate, zinc salt	12767-90-7	100 (Limit refers to boron and zinc individually, not the salt)	Textile and Leather: 100	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1O: Perfluorinated and Polyfluorinated Chemicals (PFCs)

Test method: MS-0045538, Based on PFCs: EPA 537:2020, determination by LC-MSMS &
FTOH: BS EN 12673- 1999 (Derivatisation with acetic anhydride, determination by GC-MS)

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
Perfluorooctane sulfonate (PFOS) and related substances	Multiple including 1763-23-1	0.01	Textile and Leather: 0.01	n.d.
Perfluorooctanoic acid (PFOA) and related substances	Multiple including 335-67-1	1	Textile and Leather: 1	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1P*:* Phthalates – including all other esters of ortho-phthalic acid
Test method: MS-0045532, Based on US EPA 8270E, ISO 18856,
(Dichloromethane extraction, determination by GC-MS)

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
1,2-benzenedicarboxylic acid, di-C6-8 branched and liearalkyl esters , C7-rich (DIHP)	71888-89-6 84777-06-0	10	Textile and Leather: 10	n.d.
1,2-benzenedicarboxylic acid, di-C7-11 branched and liearalkyl esters (DHNUP)	68515-42-4 68515-50-4	10	Textile and Leather: 10	n.d.
Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	10	Textile and Leather: 10	n.d.
Butyl benzyl phthalate (BBP)	85-68-7	10	Textile and Leather: 10	n.d.
Di-cyclohexyl phthalate (DCHP)	84-61-7	10	Textile and Leather: 10	n.d.
Di-iso-decyl phthalate (DIDP)	26761-40-0	10	Textile and Leather: 10	n.d.
Di-iso-octyl phthalate (DIOP)	27554-26-3	10	Textile and Leather: 10	n.d.
Di-isobutyl phthalate (DIBP)	84-69-5	10	Textile and Leather: 10	n.d.
Di-isononyl phthalate (DINP)	28553-12-0	10	Textile and Leather: 10	n.d.
Di-n-hexyl phthalate (DnHP)	84-75-3	10	Textile and Leather: 10	n.d.
Di-n-octyl phthalate (DNOP)	117-84-0	10	Textile and Leather: 10	n.d.
Di-n-pentylphthalates	131-18-0	10	Textile and Leather: 10	n.d.
Di-n-propyl phthalate (DPRP)	131-16-8	10	Textile and Leather: 10	n.d.
Di(ethylhexyl) phthalate (DEHP)	117-81-7	10	Textile and Leather: 10	n.d.
Dibutyl phthalate (DBP)	84-74-2	10	Textile and Leather: 10	n.d.
Diethyl phthalate (DEP)	84-66-2	10	Textile and Leather: 10	n.d.
Diisopentylphthalates	605-50-5	10	Textile and Leather: 10	n.d.
Dinonyl phthalate (DNP)	84-76-4	10	Textile and Leather: 10	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1Q*:* Polycyclic Aromatic Hydrocarbons (PAHs)
Test method: MS-0045517, Based on USEPA 8270E and DIN 38407-39,
(Solvent extraction, determination by GC-MS)

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
Acenaphthene	83-32-9	1	Textile and Leather: 1	n.d.
Acenaphthylene	208-96-8	1	Textile and Leather: 1	n.d.
Anthracene	120-12-7	1	Textile and Leather: 1	n.d.
Benzo[a]anthracene	56-55-3	1	Textile and Leather: 1	n.d.
Benzo[a]pyrene (BaP)	50-32-8	1	Textile and Leather: 1	n.d.
Benzo[b]fluoranthene	205-99-2	1	Textile and Leather: 1	n.d.
Benzo[e]pyrene	192-97-2	1	Textile and Leather: 1	n.d.
Benzo[ghi]perylene	191-24-2	1	Textile and Leather: 1	n.d.
Benzo[j]fluoranthene	205-82-3	1	Textile and Leather: 1	n.d.
Benzo[k]fluoranthene	207-08-9	1	Textile and Leather: 1	n.d.
Chrysene	218-01-9	1	Textile and Leather: 1	n.d.
Dibenz[a,h]anthracene	53-70-3	1	Textile and Leather: 1	n.d.
Fluoranthene	206-44-0	1	Textile and Leather: 1	n.d.
Fluorene	86-73-7	1	Textile and Leather: 1	n.d.
Indeno[1,2,3-cd]pyrene	193-39-5	1	Textile and Leather: 1	n.d.
Naphthalene	91-20-3	1	Textile and Leather: 1	n.d.
Phenanthrene	85-01-8	1	Textile and Leather: 1	n.d.
Pyrene	129-00-0	1	Textile and Leather: 1	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1R*:* Restricted Aromatic Amines (Cleavable from Azo-colourants)
Test method: MS-0045516, Based on 8270E, EN ISO 14362-1 and EN ISO 14362-3, determination by GC-MS

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
2-naphthylamine	91-59-8	0.1	Textile and Leather: 0.1	n.d.
2-Naphthylammoniumacetate	553-00-4	0.1	Textile and Leather: 0.1	n.d.
2,4-xylidine	95-68-1	0.1	Textile and Leather: 0.1	n.d.
2,4,5-trimethylaniline	137-17-7	0.1	Textile and Leather: 0.1	n.d.
2,4,5-trimethylaniline hydrochloride	21436-97-5	0.1	Textile and Leather: 0.1	n.d.
2,6-xylidine	87-62-7	0.1	Textile and Leather: 0.1	n.d.
3,3'-dichlorobenzidine	91-94-1	0.1	Textile and Leather: 0.1	n.d.
3,3-dimethoxylbenzidine	119-90-4	0.1	Textile and Leather: 0.1	n.d.
3,3-dimethylbenzidine	119-93-7	0.1	Textile and Leather: 0.1	n.d.
4-aminoazobenzene	60-09-3	0.1	Textile and Leather: 0.1	n.d.
4-aminodiphenyl	92-67-1	0.1	Textile and Leather: 0.1	n.d.
4-chloro-o-toluidine	95-69-2	0.1	Textile and Leather: 0.1	n.d.
4-chloro-o-toluidinium chloride	3165-93-3	0.1	Textile and Leather: 0.1	n.d.
4-chloroaniline	106-47-8	0.1	Textile and Leather: 0.1	n.d.
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	39156-41-7	0.1	Textile and Leather: 0.1	n.d.
4-methoxy-m-phenylenediamine	615-05-4	0.1	Textile and Leather: 0.1	n.d.
4-methyl-m-phenylenediamine	95-80-7	0.1	Textile and Leather: 0.1	n.d.
4,4-methylenebis-(2-chloro-aniline)	101-14-4	0.1	Textile and Leather: 0.1	n.d.
4,4-methylenedi-o-toluidine	838-88-0	0.1	Textile and Leather: 0.1	n.d.
4,4-methylenedianiline	101-77-9	0.1	Textile and Leather: 0.1	n.d.
4,4-oxydianiline	101-80-4	0.1	Textile and Leather: 0.1	n.d.
4,4-thiodianiline	139-65-1	0.1	Textile and Leather: 0.1	n.d.
5-nitro-o-toluidine	99-55-8	0.1	Textile and Leather: 0.1	n.d.
6-methoxy-m-toluidine	120-71-8	0.1	Textile and Leather: 0.1	n.d.
Benzidine	92-87-5	0.1	Textile and Leather: 0.1	n.d.
o-aminoazotoluene	97-56-3	0.1	Textile and Leather: 0.1	n.d.
o-anisidine	90-04-0	0.1	Textile and Leather: 0.1	n.d.
o-toluidine	95-53-4	0.1	Textile and Leather: 0.1	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1S: UV Absorbers
Test method: MS-0045504, Based on USEPA 8270, USEPA 527 and USEPA 8321B Dichloromethane Extraction, determination by GC-MS or LC-MS (-MS)

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec- butyl) phenol (UV-350)	36437-37-3	100	Textile and Leather: 100	n.d.
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	100	Textile and Leather: 100	n.d.
2-benzotriazol-2-yl-4,6-di-tertbutylphenol (UV-320)	3846-71-7	100	Textile and Leather: 100	n.d.
2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327)	3864-99-1	100	Textile and Leather: 100	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

Table 1T: Volatile Organic Compounds (VOC)
Test method: MS-0045611, Based on ISO 11423-1, US EPA 8270E and BS EN 12673-1999 (Headspace, determination by GC-MS)

Parameter	CAS no.	Reporting Limit (µg/L)	ZDHC Limit (µg/L)	Result M001 (µg/L)
Benzene	71-43-2	1	Textile and Leather: 1	n.d.
m-cresol	108-39-4	1	Textile and Leather: 1	n.d.
o-cresol	95-48-7	1	Textile and Leather: 1	n.d.
p-cresol	106-44-5	1	Textile and Leather: 1	n.d.
Xylene	1330-20-7	1	Textile and Leather: 1	n.d.
Toluene	108-88-3	1	Textile and Leather: 1	n.d.

Abbreviation: µg/ L = microgram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

ZDHC HEAVY METALS WASTEWATER PARAMETERS

Table 2*:* Heavy Metals
Test method: MS-0045514, MS-0045515, Based on USEPA 200.8, USEPA 6010C, USEPA 6020A, ISO 17294, ISO 18412 : 2006, determination by ICP-OES

Parameter	CAS no.	Reporting Limit (Mg/L)	ZDHC Limit (mg/L)	Result M002 (mg/L)
Antimony	-	0.005	Textile and Leather: 0.1	n.d.
Chromium (VI)	-	0.001	Textile: 0.05 Leather: 0.15	n.d.
Barium	-	0.01	-	n.d.
Selenium	-	0.01	-	n.d.
Tin	-	0.01	-	n.d.
Arsenic	-	0.005	Textile and Leather: 0.05	n.d.
Chromium, total	-	0.001	Textile: 0.2 Leather: 1.5	n.d.
Cobalt	-	0.005	Textile and Leather: 0.05	n.d.
Cadmium	-	0.01	Textile and Leather: 0.1	n.d.
Copper	-	0.05	Textile and Leather: 1	n.d.
Lead	-	0.01	Textile and Leather: 0.1	n.d.
Nickel	-	0.005	Textile and Leather: 0.2	n.d.
Silver	-	0.001	Textile and Leather: 0.1	n.d.
Zinc	-	0.10	Textile and Leather: 5	n.d.
Mercury	-	0.001	Textile and Leather: 0.01	n.d.

Abbreviation: mg/L= milligram per liter
RL = Reporting Limit
n.d. = not detected (< Reporting Limit)

ZDHC CONVENTIONAL PARAMETERS AND ANIONS

Table 3: pH value

Test Method: US EPA 150.1

Parameter	Reporting limit	Result
		M002
pH value	-	7.1

Remarks:

Parameter	ZDHC Limit		
	Foundational	Progressive	Aspirational
pH value	Textile and Leather: 6-9		

Table 3: Temperature difference

Test method: USEPA 170.1

Parameter	Reporting Limit (ºC)	Result
		M002 (ºC)
Temperature - Discharge pipe	-	28.4
Temperature - Receiving water	-	27.7
Temperature difference	-	0.7 (Aspirational)

Abbreviation: ºC = Degrees Celsius

Remarks:

Parameter	ZDHC Limit (ºC)		
	Foundational	Progressive	Aspirational
Temperature	Δ +15	Δ +10	Δ +5

Table 3: E. Coli

Test Method: SM 9221G

Parameter	Reporting Limit (MPN/100ml)	Result
		M002 (MPN/100ml)
E. Coli	10	n.d.

Abbreviation: n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit		
	Foundational	Progressive	Aspirational
E. Coli	Textile and Leather: 126 MPN/100-ml		

Table 3: Colour

Test Method: ISO 7887– Method B

Parameter	Reporting Limit	Result
		M002
Colour [m^{-1}] (436nm; 525nm; 620nm)	[m^{-1}]	1.8; 0.7; 0.4 (Aspirational)

Abbreviation: nm = nanometer

Remarks:

Parameter	ZDHC Limit [m^{-1}]		
	Foundational	Progressive	Aspirational
Colour	7;5;3	5;3;2	2;1;1

Table 3: Persistent Foam

Test Method: Visual estimation

Parameter	Reporting Limit	Result
		M002
Persistent Foam, cm	-	Absent

Remarks:

Parameter	ZDHC Limit		
	Foundational	Progressive	Aspirational
Persistent Foam	Textile and Leather: No indication of Persistent foam in receiving water		

Table 3: Wastewater Flowrate

Test Method: Calculation from Customer's information

Parameter	Reporting Limit	Result
		M002
Wastewater Flowrate	-	416.3 m^3 per day

Remarks:

Parameter	ZDHC Limit (m^3)		
	Foundational	Progressive	Aspirational
Wastewater Flowrate	15m^3 per day		

Table 3: Ammonium-Nitrogen

Test Method: USEPA 350.1

Parameter	Reporting Limit (mg/L)	Result
		M002
Ammonium-Nitrogen	0.5	n.d. (Aspirational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
Ammonium-Nitrogen	Textile: 10 Leather: 15	Textile: 1 Leather: 10	Textile: 0.5 Leather: 1

Table 3: AOX

Test Method: ISO 9562

Parameter	Reporting Limit (mg/L)	Result
		M002
Adsorbable Organic Halogen	0.1	n.d. (Aspirational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
Adsorbable Organic Halogen	Textile and Leather: 3	Textile and Leather: 0.5	Textile and Leather: 0.1

Table 3: Biochemical Oxygen Demand 5-days concentration (BOD_5)

Test Method: USEPA 405.1

Parameter	Reporting Limit (mg/L)	Result
		M002
BOD_5	2	19 (Foundational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
BOD_5	Textile: 30 Leather: 50	Textile: 15 Leather: 30	Textile: 8 Leather: 20

Table 3: Chemical Oxygen Demand (COD)

Test Method: USEPA 410.4

Parameter	Reporting Limit (mg/L)	Result
		M002
COD	10	66 (Progressive)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
COD	Textile: 150 Leather: 250	Textile: 80 Leather: 150	Textile: 40 Leather: 100

Table 3: Dissolved Oxygen (DO)

Test Method: EPA 360.1

Parameter	Reporting Limit (mg/L)	Result
		M002
DO	0.05	4.8

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
DO	Textile and Leather: ≥ 4		

Table 3: Oil & Grease

Test Method: US EPA 1664 B

Parameter	Reporting Limit (mg/L)	Result
		M002
Oil & Grease	0.5	n.d. (Aspirational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
Oil & Grease	Textile: 10 Leather: 20	Textile: 2 Leather: 10	Textile: 0.5 Leather: 5

Table 3: Total Phenols / Phenol Index

Test Method: APHA 5530C

Parameter	Reporting Limit (mg/L)	Result
		M002
Total Phenols	0.001	n.d. (Aspirational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
Total Phenols	Textile and Leather: 0.5	Textile: 0.01 Leather: 0.3	Textile: 0.001 Leather: 0.1

Table 3: Total Chlorine

Test Method: EPA 330.5

Parameter	Reporting Limit (mg/L)	Result
		M002
Chlorine	0.2	n.d.

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
Chlorine	Textile and Leather: 1		

Table 3: Total Dissolved Solids (TDS)

Test Method: USEPA 160.1

Parameter	Reporting Limit (mg/L)	Result
		M002
TDS	10	436

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
TDS	Textile and Leather: Sample and report only		

Table 3: Total Nitrogen

Test Method: SM 4500N-C

Parameter	Reporting Limit (mg/L)	Result
		M002
Total Nitrogen	5	n.d. (Aspirational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
Total Nitrogen	Textile: 20 Leather: 35	Textile: 10 Leather: 20	Textile: 5 Leather: 10

Table 3: Total Phosphorus

Test Method: GB/T 11893

Parameter	Reporting Limit (mg/L)	Result
		M002
Total Phosphorus	0.1	n.d. (Aspirational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	Progressive	Aspirational
Total Phosphorus	Textile and Leather: 3	Textile: 0.5 Leather: 1	Textile: 0.1 Leather: 0.5

Table 3: Total Suspended Solids (TSS)

Test Method: USEPA 160.2

Parameter	Reporting Limit (mg/L)	Result
		M002
TSS	5	12 (Progressive)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	Progressive	Aspirational
TSS	Textile: 50 Leather: 70	Textile: 15 Leather: 50	Textile: 5 Leather: 20

Table 3: Chloride

Test Method: IS 3025 (Part 32)

Parameter	Reporting Limit (mg/L)	Result
		M002
Chloride	0.15	110

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
Chloride	Textile and Leather: Sample and report only		

Table 3: Cyanide, total

Test Method: APHA 4500 CN

Parameter	Reporting Limit (mg/L)	Result
		M002
Cyanide, total	0.05	n.d. (Aspirational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
Cyanide, total	Textile only: 0.2	Textile only: 0.1	Textile only: 0.05

Table 3: Dissolved anion - Sulfate

Test Method: IS 3025 (Part 24)

Parameter	Reporting Limit (mg/L)	Result
		M002
Dissolved anion - Sulfate	5	54

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	Progressive	Aspirational
Dissolved anion - Sulfate	Textile and Leather: Sample and report only		

Table 3: Dissolved anion - Sulfide (S^{2-})

Test Method: APHA 4500 S^{2-} (D)

Parameter	Reporting Limit (mg/L)	Result
		M002
Dissolved anion - Sulfide (S^{2-})	0.01	n.d. (Aspirational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	Progressive	Aspirational
Dissolved anion - Sulfide (S^{2-})	Textile: 0.5 Leather: 1	Textile: 0.05 Leather: 0.5	Textile: 0.01 Leather: 0.2

Table 3: Dissolved anion - Sulfite

Test Method: EN ISO 10304-3

Parameter	Reporting Limit (mg/L)	Result
		M002
Dissolved anion - Sulfite	0.2	n.d. (Aspirational)

Abbreviation: mg/L = milligram per liter
n.d. = not detected (< Reporting Limit)

Remarks:

Parameter	ZDHC Limit (mg/L)		
	Foundational	**Progressive**	**Aspirational**
Dissolved anion - Sulfite	Textile and Leather: 2	Textile and Leather: 0.5	Textile and Leather: 0.2

ZDHC SLUDGE PARAMETERS
Disposal Pathway of Sludge: C

Table 4A: ZDHC MRSL Substances

Table 4A.1: Alkylphenols (APs) and Alkylphenol Ethoxylates (APEOs): Including all isomers

Test Method: In House Work Instruction MS-0045536, Based on ISO 18857-2 and ISO 18254-1:2016

Parameter	Result
	M003 (mg/kg-dw)
NPs	n.d.
OPs	n.d.
NPEOs	n.d.
OPEOs	n.d.

Abbreviation: mg/kg-dw = milligram per kilogram- dry weight
n.d. = not detected (< Reporting Limit)

Remarks:
List of APs and APEOs being tested

Parameter	CAS No.	Reporting Limit	ZDHC Limit
		Sludge (mg/kg-dw)	**Sludge (mg/kg-dw)**
Nonylphenol ethoxylates (NPEO)	9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	0.4	Textile and leather: 0.4
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		

Table 4A.2: Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method: MS-0045517, Based on USEPA 3541, USEPA 3550C, USEPA 36404 and 8270E

Parameter	Result
	M003 (mg/kg-dw)
Acenaphthene	n.d.
Acenaphthylene	n.d.
Anthracene	n.d.
Benzo[a]anthracene	n.d.
Benzo[a]pyrene (BaP)	n.d.
Benzo[b]fluoranthene	n.d.
Benzo[e]pyrene	n.d.
Benzo[ghi]perylene	n.d.
Benzo[j]fluoranthene	n.d.
Benzo[k]fluoranthene	n.d.
Chrysene	n.d.
Dibenz[a,h]anthracene	n.d.
Fluoranthene	n.d.
Fluorene	n.d.
Indeno[1,2,3-cd]pyrene	n.d.
Naphthalene	n.d.
Phenanthrene	n.d.
Pyrene	n.d.

Abbreviation: mg/kg-dw = milligram per kilogram- dry weight
n.d. = not detected (< Reporting Limit)

Remarks:
List of PAH being tested

Parameter	CAS No.	Reporting Limit	ZDHC Limit
		Sludge (mg/kg- dw)	**Sludge (mg/kg- dw)**
Acenaphthene	83-32-9	0.2	Textile and leather: 0.2
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		

Table 4A.3: Chlorotoluenes

Test Method: MS-0045535, Based on USEPA 3541, USEPA 3550C and 8270E

Parameter	CAS No.	M003 (mg/kg- dw)		
		Reporting Limit	**Result**	**ZDHC Limit**
mono-, di-, tri-, tetra- and penta- chlorotoluene	Multiple	0.2	n.d.	Textile and leather: 0.2

Abbreviation: mg/kg-dw = milligram per kilogram- Dry weight
n.d. = not detected (< Reporting Limit)

4C: ZDHC Conventional Parameters and Anions

Table 4C.3: % Solids (Total solids)

Test method: EPA 160.3

Parameter	M003
	Result (%)
% Solids (Total solids)	89.0%

Abbreviation: % = g per 100 g of sludge

---END---

Field Data

TÜVRheinland® Precisely Right.	Sampling Field Data for DETOX/ ZDHC	Appendix 1 of MS-0045758, Rev 1

Sampling Method	ISO 5667-1,3,10,13,15; ZDHC SAP		
ZDHC Sample Code No.			
Customer Name	KM Nobely Garments Ltd.	Facility Code	
Facility Name	KM Nobely Garments Ltd.		
Facility Address	Zorun, Konabari, Gazipur - 1346, Bangladesh		
Facility Representative	Md. Rahel Sarder Dipu		
Responsible for ETP or EMS (facility)	Md. Liton Mahmud		
Sampling Date	25.03.2025		
Quantity of Sample	Water: AT- 19L BT- 1/L IN- X FD-X	Sludge: 1 KG	
Picture Info	Water:	Sludge:	
Type of Wet Processing	1. Spinning; 2. Yarn Dyeing, Bleaching, Fabric Dyeing, Finishing, Washing; 4. Fabric Dyeing, Finishing, Printing; 5. Vertical Knit; Vertical Woven; 7. Assembling; 8. Assembling, Printing. 9. Washing; 10. Packing, Warehouse; 11. Polyurethane Production; 12. Tannery; 13. Others		
Weather Condition	Sunny		

Sampling Point	
Water	Sludge
1. Untreated waste water 2. Treated waste water	ETP Sludge

Type of Sampling	
Water	Sludge
❒ grab sample ☑ composite	❒ grab sample ❒ composite
If composite: (Time of sampling)	If composite: (Time of sampling)
1. Untreated: 10, 11, 12, 1, 2, 3 2. Treated: 10.15; 11.15; 12.15; 1.15, 2.15, 3.15	11.30 – 12.30

On-site Physical Condition

	Quantity/ Bottle	Preservation	Transportation Condition
Type of Sludge- Solid Color-Untreated: Blue Treated: Light Blue Sludge: Dark Gray	32	1. H_2SO_4/HCl 3. HNO_3 4. $Na_2S_2O_3$ 5. NaOH 6. metals	< 8° C
Type of Discharge: Direct/ Indirect ETP: On-site / Off-site Final Discharge: Govt. drain ETP Type: Bio chemical Sludge disposal Pathway: C	Additional Information: ECC : Yes/ No MAX Capacity : 600 m³ / day Outlet Flow rate : 426.3 m³ / day TDS : 436 mg/L		Equipment Identification No.: 9038144

Facility Representative	Md. Rahel Sarder Dipu	Signature	[signature]
Sampler's name	Md. Rasheduzzaman	Signature	[signature]

Page 1 of 2

TÜVRheinland® Precisely Right.	Sampling Field Data for DETOX/ ZDHC	Appendix 1 of MS-0045758 Rev 1

Sampling Collection Information	Sampler Information
Sampling Location: ETP Area	Date: 25.03.2025
Sampling Device Description/Owner:	Sampler name/Email: Md. Rashedul Islam
Sampling mode: □ Autosampler ☑ Manual	Sampler ZDHC Accredited no: ZDHC-A-23-E-CM1068-R2757-0595D
Start Time: 10 AM	ZDHC Composite Sample Code:
End Time: 3.15 PM	

ZDHC Wastewater Flow Device Dimensions				
Measurement (cm)	Meter	Pipe (O)	Flume (U)	Weir (V)
Diameter	-	-	-	-
Depth	-	-	-	-

ZDHC Wastewater Sampling Field Testing QA/QC			
Parameter	LCS Known	LCS Measured	Accuracy %
pH	7.00	7.01	100 %
Total Chlorine	4.00	4.00	100 %

ZDHC Wastewater Sample Collection Field Test Measurements									
Sampling Time (Hours)	Temperature (°C)		pH (Units)	Dissolved Oxygen (mg/L)	Total Chlorine (mg/L)	Persistent Foam (Yes/No)	Wastewater Flow meter (m3/hour)	Alternate measured Flow	
	Wastewater Discharge	Receiving Water						Depth (cm)	Velocity (cm/sec)
0	28.5	27.5	7.0	4.8	<0.2	NO	17.5	-	-
1	28.6	27.4	7.1	4.9	<0.2	"	16.5	-	-
2	28.4	27.6	7.1	4.8	<0.2	"	18.0	-	-
3	28.3	27.6	7.2	4.7	<0.2	"	19.5	-	-
4	28.4	27.7	7.0	4.8	<0.2	"	16.5	-	-
5	28.6	27.8	7.1	4.9	<0.2	"	17.0	-	-
6	28.5	27.9	7.0	4.8	<0.2	"	18.0	-	-
Ave'	28.4	27.7	7.1	4.8	<0.2	NO	17.6	-	-

*Reported with lab data

General Terms and Conditions of Business of TÜV Rheinland Bangladesh Pvt. Ltd.

1 Scope

1.1 The following terms and conditions apply to agreed services including testing, Inspection, consultancy services, information, deliveries and similar services as well as ancillary services and other secondary obligations provided within the scope of contract performance.

1.2 If there is any conflict between these terms and conditions and the client's General Terms and Conditions of Business, including the client's Terms and Conditions of Purchasing, if any, these terms and conditions shall apply. No contractual terms and conditions of the client shall form part of the contract unless specifically referred to or incorporated in the documents forming the contract with the client.

2 Quotations

2.1 Unless otherwise agreed, all quotations submitted by TÜV Rheinland Bangladesh Pvt. Ltd shall be subject to change without notice.

3 Coming into effect and duration of contracts

3.1 The contract shall come into effect for the agreed term upon the quotation letter of TÜV Rheinland Bangladesh Pvt. Ltd or a separate contractual document being signed by both contracting parties, or upon the works requested by the client being carried out by TÜV Rheinland Bangladesh Pvt. Ltd
If the client instructs TÜV Rheinland Bangladesh Pvt. Ltd. without receiving a prior quotation from TÜV Rheinland Bangladesh Pvt. Ltd (quotation), TÜV Rheinland Bangladesh Pvt. Ltd is – in its sole discretion – entitled to accept the order by giving written notice of such acceptance (including notice sent via electronic means) or by performing the requested services.

3.2 The contract term starts upon the coming into effect of the contract in accordance with article 3.1 and shall continue for the term agreed in the contract.

4 Scope of services

4.1 The scope of the services shall be decided solely by a unanimous declaration issued by both parties. If no such declaration exists, then the written confirmation of order by TÜV Rheinland Bangladesh Pvt. Ltd shall be decisive.

4.2 The agreed services shall be performed in compliance with the regulations in force at the time the contract is entered into.

4.3 Furthermore, TÜV Rheinland Bangladesh Pvt. Ltd is entitled to determine (in its sole discretion) the method and nature of the assessment unless otherwise agreed in writing or if mandatory provisions require a specific procedure to be followed.

4.4 On execution of the work there shall be no simultaneous assumption of any guarantee of the correctness (proper quality) and working order of either tested or examined parts nor of the installation as a whole and its upstream and/or downstream processes, organizations, use and application in accordance with regulations, nor of the systems on which the installation is based; in particular, no responsibility shall be assumed for the construction, selection of materials and assembly of installations examined, nor for their use and application in accordance with regulations unless these questions are expressly covered by the contract.

4.5 In the case of inspection work, TÜV Rheinland Bangladesh Pvt. Ltd shall not be responsible for the accuracy or checking of the safety programs or safety regulations on which the inspections are based, unless otherwise expressly agreed in writing.

5 Performance periods/dates

5.1 The contractually agreed periods and dates of performance are based on estimates of the work involved which are prepared in line with the details provided by the client. They shall only be binding if confirmed as binding by TÜV Rheinland Bangladesh Pvt. Ltd. in writing

5.2 If binding periods of performance have been agreed, these periods shall not commence until the client has submitted all required documents to TÜV Rheinland Bangladesh Pvt. Ltd This also applies, even without express approval by the client, to all extensions of agreed dates for performance not caused by TÜV Rheinland Bangladesh Pvt. Ltd.

6 The client's obligation to cooperate

6.1 The client shall guarantee that all cooperation required on its part, its agents or third parties will be provided in good time and at no cost to TÜV Rheinland Bangladesh Pvt. Ltd.

6.2 Design documents, supplies, auxiliary staff, etc. necessary for performance of the services shall be made available free of charge by the client. Moreover, collaborative action of the client must be undertaken in accordance with legal provisions, standards, safety regulations and accident prevention instructions.

6.3 The client shall bear any additional cost incurred on account of work having to be redone or being delayed as a result of late, incorrect or incomplete information or lack of proper cooperation. Even where a fixed or maximum price is agreed, TÜV Rheinland Bangladesh Pvt. Ltd shall be entitled to charge extra for such additional expense.

7 Invoicing of work

7.1 If the scope of performance is not laid down in writing when the order is placed, invoicing shall be based on costs incurred. If no payment is agreed in writing, invoicing shall be in accordance with the TÜV Rheinland Bangladesh Pvt. Ltd. price list valid at the time of performance.

7.2 Unless otherwise agreed, work shall be invoiced according to the progress of the work.

7.3 If the execution of an order extends over more than one month and the value of the contract or the agreed fixed price exceeds €2,500.00) converted into Bangladeshi Taka at the prevailing exchange rates TÜV Rheinland Bangladesh Pvt. Ltd may demand payments on account or in instalments.

8 Payment terms

8.1 All invoice amounts shall be due for payment on receipt of the invoice, subject only to statutory deductions as per applicable tax laws. No discounts shall be granted.

8.2 Payments shall be made to the bank account of TÜV Rheinland Bangladesh Pvt. Ltd. as indicated on the invoice, stating the invoice and customer numbers.

8.3 In cases of default of payment, TÜV Rheinland Bangladesh Pvt. Ltd shall be entitled to claim default interest at a rate of 18% p.a. At the same time, TÜV Rheinland Bangladesh Pvt. Ltd. deserves the right to claim further damages.

8.4 Should the client default in payment of the invoice despite being granted a reasonable grace period, TÜV Rheinland Bangladesh Pvt. Ltd shall be entitled to cancel the contract, withdraw the certificate, claim damages for non-performance and refuse to continue performance of the contract. TUV Rheinland Bangladesh Pvt. Ltd also reserves the right to publish the names of defaulting clients in public domain as may be fit and also meet any other requirements as prescribed by accreditation agencies/bodies.

8.5 The provisions set forth in article 8.4 shall also apply in cases involving returned cheques, cessation of payment, and commencement of insolvency proceedings against the client's assets or cases in which the commencement of insolvency proceedings has been dismissed due to lack of assets.

8.6 Objections to the invoices of TÜV Rheinland Bangladesh Pvt. Ltd shall be submitted in writing within two weeks of receipt of the invoice.

8.7 TÜV Rheinland Bangladesh Pvt. Ltd shall be entitled to demand appropriate advance payments.

8.8 TÜV Rheinland Bangladesh Pvt. Ltd shall be entitled to raise its fees at the beginning of a month if overheads and/or purchase costs have increased. In this case, TÜV Rheinland Bangladesh Pvt. Ltd shall notify the client in writing of the rise in fees. This notification shall be issued one month prior to the date on which the rise in fees shall come into effect (period of notice of changes in fees). If the rise in fees remains under 5% per contractual year, the client shall not have any special right of termination. If the rise in fees exceeds 5% per contractual year, the client shall be entitled to terminate the contractual relationship by the end of the period of notice of changes in fees. If the contract is not terminated, the changed fees shall be deemed to have been agreed upon expiry of the above period.

8.9 Only legally established and undisputed claims may be offset against claims by TÜV Rheinland Bangladesh Pvt. Ltd.

8.10 Any audit schedule cancelation prior to the specified days after payment confirmation the cancelation rules to be followed as stated on the quotation

8.11 In case of cancel an audit schedule, the received payment can be adjusted with next audit fees within 6 months after the audit cancelation.

9 Acceptance

9.1 Any part of the work ordered which is complete in itself may be presented by TÜV Rheinland Bangladesh Pvt. Ltd. for acceptance as an instalment. The client shall be obliged to accept it immediately.

9.2 If the client fails to fulfil its acceptance obligation immediately, acceptance shall be deemed to have taken place 4 calendar weeks after performance of the work if TÜV Rheinland Bangladesh Pvt. Ltd. has specifically made the client aware of the aforementioned deadline upon performance of the service.

Issued on 23 July 2023

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10 Confidentiality

10.1 For the purpose of this agreement, "confidential information" means all information, documents, images, drawings, know-how, data, samples and project documentation which one party (the "disclosing party") hands over, transfers or otherwise discloses to the other party (the "receiving party"). Confidential information also includes paper copies and electronic copies of such information.

10.2 The disclosing party shall mark all confidential information disclosed in written form as confidential before passing it on to the receiving party. The same applies to confidential information transmitted by e-mail. If confidential information is disclosed orally, the receiving party shall be appropriately informed in advance.

10.3 All confidential information which the disclosing party transmits or otherwise discloses to the receiving party in accordance with this agreement:

a) may only be used by the receiving party for the purposes of performing the purpose of the contract, unless expressly otherwise agreed in writing with the disclosing party;

b) may not be copied, distributed, published or otherwise disclosed by the receiving party, unless this is necessary for fulfilling the purpose of the contract or TÜV Rheinland Bangladesh Pvt. Ltd is required to pass on confidential information, inspection reports or documentation to the authorities or third parties that are involved in the performance of the contract

c) must be treated by the receiving party with the same level of confidentiality as the receiving party uses to protect its own confidential information, but never with a lesser level of confidentiality than that which is objectively required

10.4 The receiving party shall disclose any confidential information received from the disclosing party only to those of its employees who need this information to perform the services required for the subject matter of this contract. The receiving party undertakes to oblige these employees to observe the same level of secrecy as set forth in this confidentiality clause

10.5 Information for which the receiving party can furnish proof that:

a) it was generally known at the time of disclosure or has become general knowledge without violation of this agreement; or
b) it was disclosed to the receiving party by a third party entitled to disclose this information; or
c) the receiving party already possessed this information prior to disclosure by the disclosing party ;or
d) the receiving party developed it itself, irrespective of disclosure by the disclosing party, shall not be deemed to constitute "confidential information" as defined in this agreement
e) It is mandated by law or by an order of the Courts to disclose such information

10.6 All confidential information shall remain the property of the disclosing party. The receiving party hereby agrees to immediately

a) return all confidential information, including all copies, to the disclosing party, and/or on request by the disclosing party, to

b) destroy all confidential information, including all copies, and confirm the destruction of this confidential information to the disclosing party in writing, at any time if so requested by the disclosing party but at the latest and without special request after termination or expiry of this contract. This does not extend to include reports and certificates prepared for the client solely for the purpose of fulfilling the obligations under this contract, which shall remain with the client. However, TÜV Rheinland Bangladesh Pvt. Ltd is entitled to make file copies of such reports, certificates and confidential information that forms the basis for preparing these reports and certificates in order to evidence the correctness of its results and for general documentation purposes

10.7 From the start of this contract and for a period of three years after termination or expiry of this contract, the receiving party shall maintain strict secrecy of all confidential information and shall not disclose this information to any third parties or use it for itself

11 Copyrights

11.1 TÜV Rheinland Bangladesh Pvt. Ltd shall retain all exclusive and joint copyrights in the expert reports, test results, calculations, presentations etc. prepared by TÜV Rheinland Bangladesh Pvt. Ltd.

11.2 The client may only use expert reports, test results, calculations, presentations etc. prepared within the scope of the contract for the contractually agreed purpose

11.3 The client may use test reports, test results, expert reports, etc. only complete and unshorten. Any publication or duplication for advertising purposes needs the prior written approval of TÜV Rheinland Bangladesh Pvt. Ltd

12 Liability of TÜV Rheinland Bangladesh Pvt. Ltd

12.1 Irrespective of the legal basis and in particular in the event of a breach of contractual obligations and tort, the liability of TÜV Rheinland (Bangladesh) Pvt. Ltd for all damage, loss and reimbursement of expenses caused by legal representatives and/or employees of TÜV Rheinland (Bangladesh) Pvt. Ltd shall be limited to

a) in the case of contract with a fixed overall fee, an amount equal to the overall fee for the entire contract
b) in the case of contracts for annually recurring services, an amount equal to the agreed annual fee

c) in case of contracts expressly charged on a time and material basis to a maximum of BDT10,00,000/=(Taka Ten Lacs only). And

d) in the case of framework agreements that provide for the possibility of placing individual orders, to an amount equal to three times the fee for the individual order under which the damage occurred. The maximum liability of TÜV Rheinland Bangladesh Pvt. Ltd is limited in any event of damage or loss to the contract value/BDT 10, 00,000/- (Taka Ten Lacs only) whichever is lower

e) Unless prior instruction TRBD will dispose the Tested samples and specimens without further notice after 3 months from the received date of any samples

12.2 TÜV Rheinland Bangladesh Pvt. Ltd shall not be liable for personnel made available by the client to support TÜV Rheinland Bangladesh Pvt. Ltd in the performance of its services regulated under this contract. The client shall indemnify TÜV Rheinland Bangladesh Pvt. Ltd against any claims made by third parties for all loss that may be caused to or suffered by TUV Rheinland Bangladesh Pvt. Ltd due to acts of commission and commission by the client

12.3 The limitation periods for claims for damages shall be based on statutory provisions

12.4 None of the provisions of this article 12 changes the burden of proof to the disadvantage of the client

13 Partial invalidity, written form, place of jurisdiction

13.1 No ancillary agreements to this contract have been concluded

13.2 All amendments and supplements must be in writing in order to be effective; this also applies to amendments and supplements to the requirement for the written form

13.3 Should one or several of the provisions under this contract be or become ineffective, the contracting parties shall replace the invalid provision with a legally valid provision that comes closest to the content of the invalid provision in legal and commercial terms

13.4 The place of jurisdiction for all disputes arising in connection with this contract shall be Dhaka. This contract is governed by Bangladesh substantive law

13.5 All claims, disputes, differences, etc., arising out of and / or connected with the contract between TÜV Rheinland Bangladesh Pvt. Ltd and the client shall be resolved through arbitration to be conducted under the provisions of the Arbitration and Conciliation Act. The seat of arbitration shall be Dhaka, Bangladesh. The Arbitral Tribunal shall comprise of a Sole Arbitrator to be nominated by the mutual consent of TÜV Rheinland Bangladesh Pvt. Ltd and the client. The arbitration proceedings shall be conducted in the English language only

13.6 Subject to resolution of disputes through arbitration, only the Courts in Dhaka, Bangladesh, shall be exclusive jurisdiction over all matters arising out of and /or connected with the contract between TÜV Rheinland Bangladesh Pvt. Ltd and the client

14 Client's obligation to cooperate TUV Rheinland Health, Safety and Environment (HSE) process

14.1 The client shall ensure that TÜV Rheinland employees are provided necessary HSE inductions on the site-specific hazards, HSE plans, emergency procedures, additional activities, pre-cautions, PPE usage requirement etc, as applicable.

14.2 Client shall maintain all HSE legal requirement to provide safe workplace for TÜV Rheinland employees while they will be at client's premise.

14.3 The client shall disclose about any uncertain/ unexpected situation related to health and safety before client site visit and for any such situation Auditor/inspector can deny to perform the job.

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