BURBERRY

EFFLUENT TESTING TREND ANALYSIS
NOVEMBER 2024

CONTENTS

1. EXECUTIVE SUMMARY

The challenges posed by the climate crisis, water security, and biodiversity loss are significant for both businesses and society. Our success in fulfilling our climate and environmental commitments over the years will determine the long-term success of our business. Our Chemical Management Programme supports Burberry's goals of embedding sustainable manufacturing and protecting nature. Our approach to sustainable chemical management is to eliminate hazardous chemicals from our supply chain and drive systemic change across the industry. By actively engaging with the Zero Discharge of Hazardous Chemicals (ZDHC) Foundation, our luxury peers, third-party suppliers and external chemical experts Burberry contributes to driving industry-wide transformation aimed at eliminating unwanted chemicals and preventing their release into the environment. These initiatives demonstrate our dedication to protecting people and the planet, mitigating risks and potential adverse impacts throughout our supply chain and beyond.

This report details the outcomes of effluent testing carried out by Burberry's supply chain partners who conducted wastewater analysis during the testing rounds of October 2023, April 2024 and October 2024.[1] By comparing data from this analysis to previous testing, the results indicate continuous improvement in aligning with the Zero Discharge of Hazardous Chemicals Wastewater Guidelines (ZDHC WWG).[2]

During the testing rounds, Burberry's supply chain conformance to the ZDHC WWG Manufacturing Restricted Substances List (MRSL) parameters was 98.7% for October 2023 alone and 98.8% for April and October 2024. Moreover, 96% of the conventional parameters met the minimum wastewater guidelines requirements and heavy metals achieved a conformance rate of 99.7%.[3]

[1]These results reflect production of the full facility not only for Burberry production.

[2] ZDHC Wastewater Guidelines

[3]MRSL and heavy metal adherence is analysed for all manufacturing facilities, whereas Conventional parameters, including anions is applicable to manufacturing facilities with DIRECT discharge during the period under study.

2. INTRODUCTION

We are committed to eliminating hazardous substances from our manufacturing value chain to ensure the safety of our people, planet, and products. Our Chemical Management Programme is in line with the ZDHC Roadmap to Zero framework. Burberry MRSL[4] prohibits all Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) in addition to the ZDHC MRSL. We are implementing the ZDHC Supplier to Zero (S2Z) programme across our value chain to ensure that the best practices in sustainable chemical management are adopted. Moreover, we monitor the conformance through rigorous product and effluent testing: our product is tested against our Product Restricted Substances List (PRSL)[5] whilst effluent is tested against the ZDHC WWG.

Wastewater testing is pivotal in monitoring the potential use of these unwanted substances in the manufacturing of Burberry products. Our partners are required to conduct effluent testing twice a year (prior to the end of April and October) at a ZDHC-accredited laboratory, following the ZDHC WWG. The results of these tests must be disclosed on the ZDHC Gateway,[6] a global online platform used to register and share chemical management performance data against the ZDHC guidelines. By adopting a globally unified standard, wastewater testing encourages continuous improvement in the overall quality of wastewater management within the industry.

Supply chain partners are expected to implement the ZDHC WWG, and this report presents the latest data disclosed on the ZDHC Gateway (October 2023, April 2024 and October 2024[7] testing rounds. Hereafter referred as 'reporting period'). This report also monitors performance trends since the ZDHC WWG was established in October 2017, identifying areas for improvement. In the event of non-conformities to the ZDHC WWG, partners are required to perform a Root Cause Analysis, create a Corrective Action Plan, and share their findings on the ZDHC Gateway and with Burberry.

Comprehensive testing data from supply chain partners for the reporting period is publicly available on our Codes and Policies page (Environment/Chemical Management).

3. METHODOLOGY

Wastewater analysis is conducted following the ZDHC WWG 2.1 methodology,[8] using the parameters specified in Appendix 1. The sampling and reporting procedures are carried out by ZDHC Approved Laboratories. The ZDHC WWG is applicable to wet processing facilities who generates an average daily effluent over 15 m^3/day.

[4] Burberry MRSL

[5] Burberry PRSL

[6] ZDHC Gateway

[7] All tests performed from the 1st of May to the 31st of October are included in the October testing rounds, whereas the tests performed from the 1st of November to the 30th of April are included in April testing round.

[8] In September 2024, the ZDHC published the recent WWG Version 2.2, and this will come to effect from April 2025 wastewater testing round.

4. TREND ANALYSIS

4.1 Data Overview

83 facilities participated in the October 2023 effluent testing round, and 88 and 85 facilities participated in the April and October 2024 testing rounds respectively (Figure 1). These test reports have been uploaded and disclosed on the ZDHC Gateway, in accordance with the ZDHC WWG.

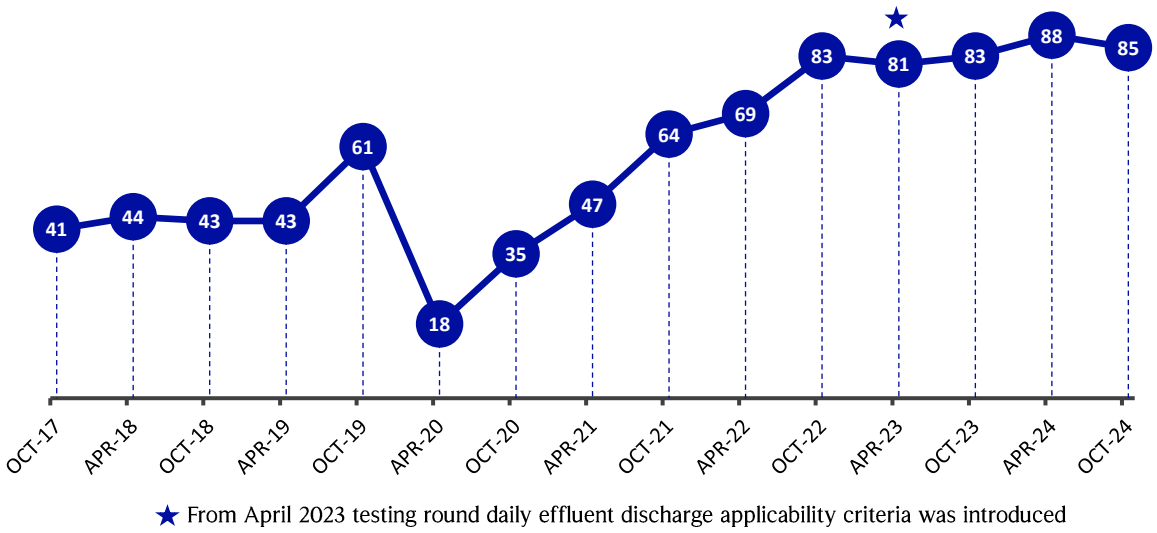

Figure 1: Number of Burberry partners' facilities disclosing effluent test reports on the ZDHC Gateway

Since the launch of the ZDHC effluent testing program in 2017, the highest level of participation from Burberry partners was observed in April 2024, with 88 reports published on the ZDHC Gateway. This was achieved due to enhanced engagement with supply chain partners, reach of ZDHC in the industry and collaboration with peers.

76% of Burberry products[9] were processed at facilities that participated in the ZDHC effluent testing programme in the reporting period with an improvement of 6% compared to the previous reporting period.

Figure 2 provides an overview of participation categorized by facility type (textile or leather) and direct[10] or indirect discharge[11] in the reporting period.

[9]The percentage of product delivered by each Direct Raw Material Supplier is equally distributed among its Wet Processors.

[10] Reference: Glossary, definition of direct and indirect facility

[11] Reference: Glossary, definition of direct and indirect facility

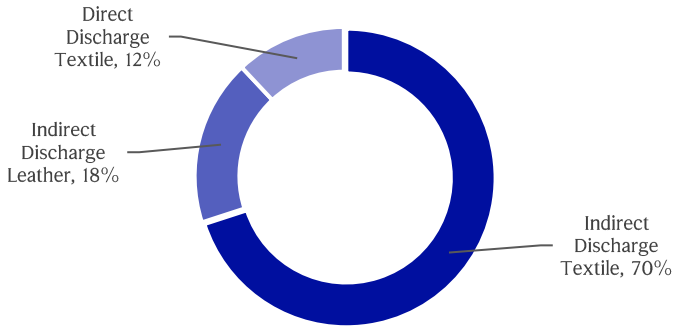

Figure 2: Number of facilities participating in the reporting period

In the reporting period, 77% of the facilities that participated were in Europe, while 23% were in Asia (Figure 3).

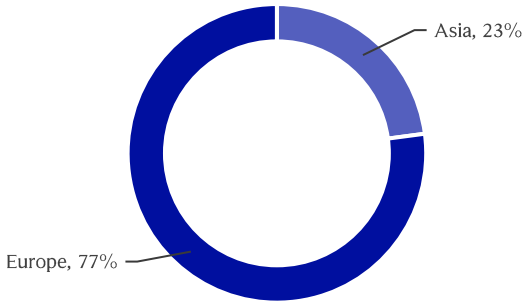

Figure 3: Number of facilities participating in the reporting period by region

4.2 ZDHC MRSL Parameters

To evaluate adherence to the ZDHC Wastewater Guidelines within Burberry's supply chain, a summary of test reports from participating facilities is provided below.

The supply chain showed a 98.7% overall conformance rate with the MRSL wastewater parameters in October 2023 round and the result is based on the analysis of 18721 analytes tested. In April and October 2024, overall MRSL conformance rate is 98.8%. This result is derived from the analysis of a total of 38788 analytes tested.

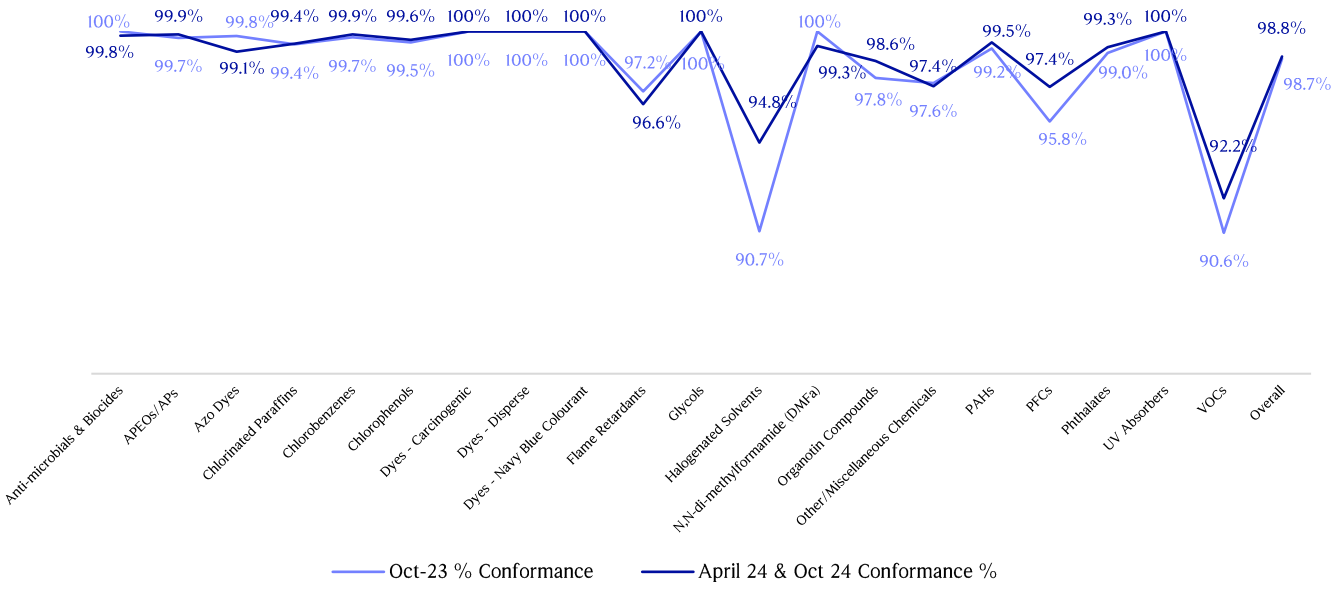

Figure 4: % adherence to ZDHC Wastewater MRSL limits per chemical group in the reporting period

In the reporting period, no traces of Carcinogenic Dyes, Disperse Dyes, Dyes – Navy Blue Colourants, Glycols and UV absorbers were found in the wastewater samples, showing full adherence to the WWG MRSL requirements.

Moreover, the detections of Anti-microbials & Biocides, APEOs/APs, Chlorobenzenes, Chlorophenols and PAHs were marginal. APEOs/APs and Chlorobenzenes show continuous improvements over the last years (refer Figures 5 and 6), and this indicates an increased use of more sustainable chemicals.

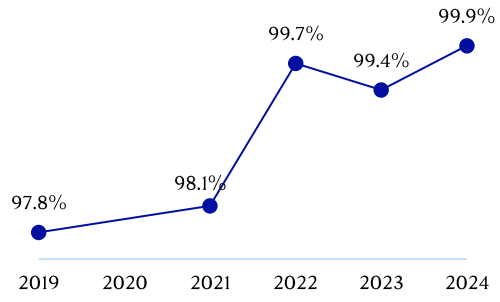

Figure 5: APEOs/APs conformance over the years

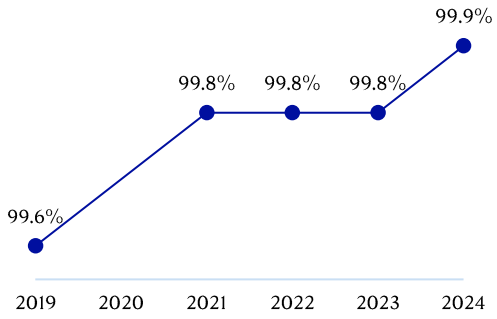

Figure 6: Chlorobenzene conformance over the years

In 2024 testing rounds, lowest MRSL conformance demonstrated in VOCs (92.2%) followed by Halogenated Solvents (94.8%), Flame Retardants (96.6%), PFCs (97.4%) and Other/Miscellaneous chemicals (97.4%).

96.7% of flame retardants non-conformities resulted from parameters[12] whose reporting limit has been increased in the latest ZDHC WWG (version 2.2). Considering the new limit, flame retardants conformance would be 99.3%. No direct correlation has been identified between these detections and the use of MRSL listed flame retardants, and further studies need to be completed in relation to the testing methods, presence of Boron due to non-listed flame retardants in the MRSL, potential contamination of raw materials in upstream supply chain, etc.

For majority of MRSL detections, incoming water was not tested (refer to Figure 7) as it is not a mandatory requirement in the ZDHC WWG. In the case of a detection, Burberry encourages its partners to conduct tests on incoming water in order to understand when freshwater contamination could be the root cause for its presence. During the reporting period, MRSL parameters were detected in incoming water representing 10% of total MRSL non-conformities and majority of these detections occurred in Italy. These incoming freshwater contaminations were associated with Flame Retardants, Halogenated Solvents, Organotin Compounds and PFCs.

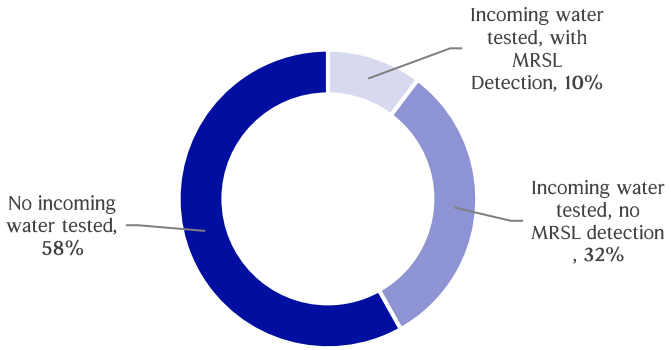

Figure 7: Incoming water testing with reference to total MRSL non-conformities

[12] Boric acid, Diboron trioxide, Disodium octaborate, Disodium tetraborate, anhydrous and Tetraboron disodium heptaoxide, hydrate limit increased to 500 µg/l.

4.3 Heavy Metals

The analysis was also conducted on heavy metals. As per the ZDHC WWG, a three-tiered approach; Foundational, Progressive, and Aspirational limits considered on heavy metals. All facilities should meet the Foundational Limits for all heavy metals at a minimum. During the reporting period, facilities demonstrated a conformance rate of 99.7% with the ZDHC WWG. Among the 1476 metal parameters tested by facilities, only Copper and Lead exceeded the Foundational limit.

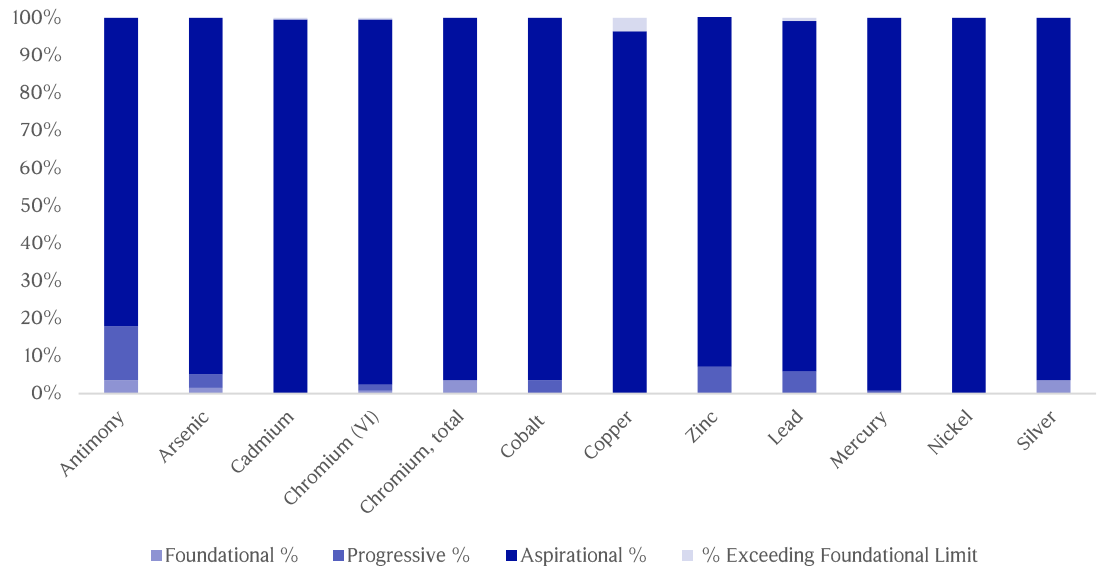

Figure 8: Heavy metals conformance level in the reporting period

4.4 Conventional Parameters

Conventional parameter limits are pivotal in the assessment of Direct Discharge facilities, where wastewater treatment occurs on-site, and effluent is discharged directly into water bodies. Some conventional parameters are typically part of the facilities' discharge permits. The ZDHC WWG uses a three-tiered approach; Foundational, Progressive, and Aspirational limits on conventional parameters as well. These encourages facilities to continuously improve their wastewater quality, often beyond what may be legally required. Evaluation against these levels are exclusively applicable to direct discharge facilities (12% of participated facilities in this reporting period).

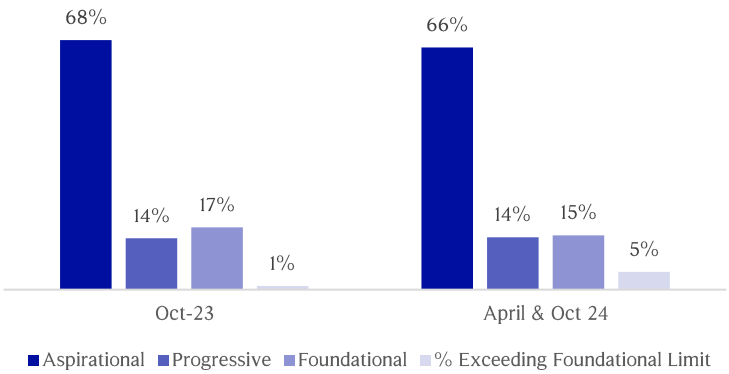

Figure 9: Conformity of conventional parameters to WWG limits in the reporting period for direct discharge facilities

The results from three rounds of testing indicated that a significant number of analytes tested by direct discharge facilities met high environmental standards. In October 2023, 68% of the analytes achieved the Aspirational level, 14% met the Progressive level, and about 17% satisfied the Foundational level. In the subsequent rounds in April and October 2024, 66% of analytes reached the Aspirational level, 14% met the Progressive level, and around 15% fulfilled the Foundational level. In total, 96% of analytes were conformant to the ZDHC Wastewater requirements in the reporting period. More detailed data by parameter can be found in Figure 10.

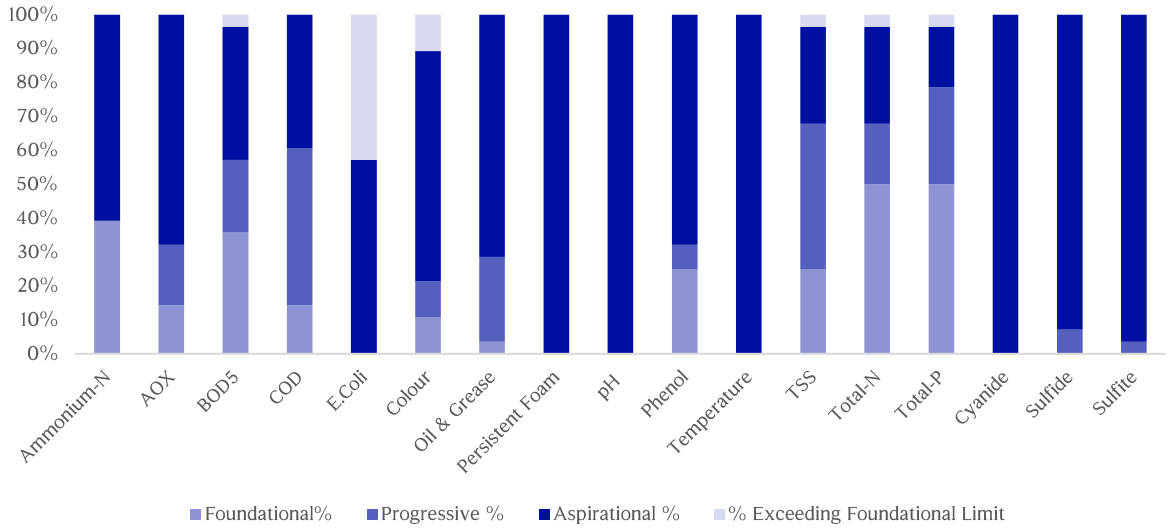

Figure 10: Conformity level of conventional parameters with anions to WWG limits in the reporting period

4.5 Root Cause Analysis

In cases where non-conformities are identified in effluent during wastewater testing, Burberry requires partners to systematically address these issues related to MRSL, heavy metals and conventional parameters. This involves conducting a comprehensive Root Cause Analysis (RCA) and developing a Corrective Action Plan (CAP). Partners must submit these documents via the ZDHC Gateway. This approach aims to ensure transparency and facilitate timely resolution of identified issues.

In the October 2023 and April 2024 testing rounds, Burberry received 70% of Corrective Action Plans for non-conformities related to MRSL, Heavy Metals, and Conventional parameters. For the October 2024 wastewater testing non-conformities, partners have been contacted to request the RCA and CAP.

5. CONCLUSION

Burberry remains committed to the ZDHC Roadmap to Zero and to the adoption of the ZDHC wastewater guidelines (WWG). Burberry places a strong emphasis on maintaining ethical and environmental standards throughout its supply chain.

With a conformance of 98.8% in the reporting period, the most important detected MRSL parameters were Flame Retardants, Halogenated Solvents, Other/Miscellaneous chemicals, PFCs and Volatile Organic Compounds (VOCs). Except for VOCs, these substances were often found in the incoming water, suggesting contamination of freshwater resources. Carcinogenic Dyes, Disperse Dyes, Dyes – Navy blue colorants, Glycols, and UV absorbers 100% conformant, not having been detected.

The overall conformance rate for conventional parameters was 96%, with 66% achieving the highest level, known as the Aspirational level, according to the ZDHC WWG. In the case of heavy metals, conformance was 99.7%.

In the event of any non-conformity, partners must conduct a Root Cause Analysis (RCA) and develop a Corrective Action Plan (CAP). This approach is designed to prevent recurrence of issues and promote continuous improvement.

Wastewater testing is a crucial part of Burberry Chemical Management Program for the elimination of harmful chemicals from supply chain, key to our Responsibility Strategy.

6. NEXT STEPS

Burberry is committed to drive industry systemic change and to eliminate the use of hazardous substances. To achieve this, Burberry is dedicated to increasing participation in wastewater testing and support our partners advancing towards full conformance to the ZDHC Wastewater Guidelines (WWG).

To accomplish this goal, Burberry will maintain collaborations with the ZDHC, third-party entities, and supply chain partners. These efforts will focus on sharing learning resources, enhancing chemical management practices, controlling chemical inputs, improving effluent quality, and promptly addressing any non-conformities that may arise.

Burberry understands how crucial it is to protect water resources and aims to create products that prioritize responsible water use. We are committed to leading change in our industry and beyond. We promote openness and transparency to better understand and monitor water impacts in manufacturing through our Water Conservation Programme launched in 2020. In 2024, Burberry also joined Corporate Water Leaders initiative, an international network of working groups dedicated to addressing industry-wide water challenges. This is an important step in furthering our Water Conservation Programme and its aim to build water resilience within our supply chain.

Burberry will integrate water-related initiatives into its overall business objectives and strategies. Specific teams, such as supply chain management and raw materials sourcing, will be assigned clear responsibilities to ensure effective implementation.

Burberry will maintain transparency by sharing updates on its progress through the Burberry Plc website, Annual Report, and independent reports such as CDP Water.

7. GLOSSARY

- **CETP:** Centralized Effluent Treatment Plant.
- **Direct Discharge:** A point source that discharges wastewater to streams, lakes, or oceans. Municipal and industrial facilities that induce pollution through a defined conveyance or system such as outlet pipes are direct dischargers.
- **ETP:** Effluent Treatment Plant.
- **Indirect Discharge:** The discharge of wastewater to a treatment facility not owned and operated by the facility discharging the pollutants, for example a municipal wastewater treatment plant or industrial treatment park.
- **Incoming Water (IW):** Water that is supplied to a manufacturing process, usually withdrawn from surface water bodies, groundwater or collected from rainfall. This includes water supplied by municipalities and condensate from external sources of process stream.
- **Pre-treated Wastewater (Pre-treated WW):** Wastewater that has been pre-treated prior to indirect discharge from the facility to a CETP.
- **Untreated WW:** (previously referred as 'Raw Wastewater') Wastewater that has not yet been treated prior to direct or indirect discharge from the facility, or prior to water recycling efforts.
- **Wet process facility**: facility responsible of carrying out an aqueous stage in its production process.

8. APPENDIX 1

Tables below report the parameters tested, their reporting limits, and the test method applied.

Table 1A: **Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Nonylphenol ethoxylates (NPEO)	9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	Textile and Leather: 5	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC-MS or LC-MS(-MS) OPEO/NPEO (n>2): ASTM D7742 ISO 18857-2
Nonylphenol (NP), mixed isomers	104-40-5 11066-49-2 25154-52-3 84852-15-3		NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC-MS or LC-MS(-MS) OPEO/NPEO (n>2): ASTM D7742 ISO 18857-2
Octylphenol ethoxylates (OPEO)	9002-93-1 9036-19-5 68987-90-6		NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC-MS or LC-MS(-MS) OPEO/NPEO (n>2): ASTM D7742 ISO 18857-2
Octylphenol (OP), mixed isomers	140-66-9 1806-26-4 27193-28-8	Textile and Leather: 5	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC-MS or LC-MS(-MS) OPEO/NPEO (n>2): ASTM D7742 ISO 18857-2

Table 1B: **Anti- Microbials & Biocides**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
o-Phenylphenol (+salts)	90-43-7	Textile only: 100	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS BS EN 12673-1999 an alternative method of solvent extraction and derivatisation are included
Triclosan	3380-34-5	Textile and Leather: 100	
Permethrin	Multiple	Textile and Leather: 500	USEPA 8270E Solvent extraction, followed by GC-MS ISO 14154:2005 An alternate method, without derivatisation and determination by LCMS/LCMSMS is also possible

Table 1C: **Chlorinated Parafins**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Medium-chain Chlorinated paraffins (MCCPs) (C14-C17)	85535-85-9	Textile and Leather: 500	Preparation: EPA 3510 Analysis: ISO18219-2:2021 Method for MCCP with GC-MS(NCI) or LC-MS/MS
Short-chain Chlorinated paraffin (C10 – C13)	85535-84-8	Textile and Leather: 25	Preparation EPA 3510 Analysis: ISO18219-1:2021, ISO 12010:2019 Methods for SCCP with GC-MS(NCI) or LC-MS/MS

Table 1D: **Chlorobenzenes and Chlorotoluenes**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
1,2-dichlorobenzene	95-50-1	Textile and Leather: 0.2	USEPA 8260D, 8270E, Purge and Trap, Head Space Dichloromethane extraction followed by GC-MS
Other isomers of mono-, di-, tri-, tetra-, penta- and hexa- Chlorobenzene and mono-, di-, tri-, tetra- and penta- chlorotoluene	Multiple		

Table 1E: **Chlorophenols**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
2-chlorophenol	95-57-8	Textile and Leather: 0.5	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS BS EN 12673-1999 the procedure of solvent extraction and derivatisation are included
3-chlorophenol	108-43-0		
4-chlorophenol	106-48-9		
2,3-dichlorophenol	576-24-9		
2,4-dichlorophenol	120-83-2		
2,5-dichlorophenol	583-78-8		
2,6-dichlorophenol	87-65-0		
3,4-dichlorophenol	95-77-2		
3,5-dichlorophenol	591-35-5		
2,3,4-trichlorophenol	15950-66-0		
2,3,5-trichlorophenol	933-78-8		
2,3,6-trichlorophenol	933-75-5		
2,4,5-trichlorophenol	95-95-4		
2,4,6-trichlorophenol	88-06-2		
3,4,5-trichlorophenol	609-19-8		
2,3,5,6-tetrachlorophenol	935-95-5		
2,3,4,6-tetrachlorophenol	58-90-2		
2,3,4,5-tetrachlorophenol	4901-51-3		
Pentachlorophenol (PCP)	87-86-5		

Table 1F: **N,N-di-methylformamide (DMFa)**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Dimethyl formamide; N,N-dimethylformamide (DMFa)[a]	68-12-2	Textile only: 1000	EPA 8015, EPA 8270E

Table 1G: **Dyes – Carcinogenic or Equivalent Concern**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Basic violet 3 with >0.1% of Michler's Ketone[b]	548-62-9	Textile and Leather: 500	Liquid extraction, LC-MS
C.I. Acid Red 26	3761-53-3		
C.I. Acid Violet 49	1694-09-3		
C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5		
C.I. Basic Green 4 (Malachite Green Chloride)	569-64-2		
C.I. Basic Green 4 (Malachite Green Oxalate)	2437-29-8		
C.I. Basic Green 4 (Malachite Green)	10309-95-2		
C.I. Basic Red 9	569-61-9		
C.I. Basic Violet 14	632-99-5		
C.I. Direct Black 38	1937-37-7		
C.I. Direct Blue 6	2602-46-2		
C.I. Direct Red 28	573-58-0		
C.I. Disperse Blue 1	2475-45-8	Textile only: 500	Liquid extraction, LC-MS
C.I. Disperse Blue 3	2475-46-9		
Disperse Orange 11	82-28-0		

Table 1H: **Dyes – Disperse (Allergenic)**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Disperse Blue 102	12222-97-8	Textile only: 50	Liquid extraction, LC-MS
Disperse Blue 106	12223-01-7		
Disperse Blue 124	61951-51-7		
Disperse Blue 26	3860-63-7		
Disperse Blue 35	12222-75-2		
Disperse Blue 35	56524-77-7		
Disperse Blue 7	3179-90-6		
Disperse Brown 1	23355-64-8		
Disperse Orange 1	2581-69-3		
Disperse Orange 3	730-40-5		
Disperse Orange 37/59/76	13301-61-6		
Disperse Red 1	2872-52-8		
Disperse Red 11	2872-48-2		
Disperse Red 17	3179-89-3		
Disperse Yellow 1	119-15-3		
Disperse Yellow 3	2832-40-8		
Disperse Yellow 39	12236-29-2		
Disperse Yellow 49	54824-37-2	Textile only: 50	Liquid extraction, LC-MS
Disperse Yellow 9	6373-73-5		

Table 1I: **Dyes – Navy Blue Colourant**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing (parameter has been moved to the archive list)
Component 1: C39H23Cl-CrN7O12S 2Na	118685-33-9	Textile and Leather: 500	Liquid extraction, LC-MS
Component 2: C46H-30CrN10O20S2 3Na	Not Allocated		

Table 1J: **Flame Retardants**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
2,2-bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	Textile: 25 Leather: 5	USEPA 8270E, ISO 22032, USEPA 527 and USEPA 8321B Dichloromethane extraction GC-MS or LC-MS(-MS)
Bis(2,3-dibromopropyl) phosphate (BIS)	5412-25-9		
Decabromodiphenyl ether (DecaBDE)	1163-19-5		
Hexabromocyclodecane (HBCDD)	3194-55-6		
Octabromodiphenyl ether (OctaBDE)	32536-52-0	Textile: 25 Leather: 5	USEPA 8270, ISO 22032, USEPA 527 and USEPA 8321B Dichloromethane extraction GC-MS or LC-MS(-MS)
Pentabromodiphenyl ether (PentaBDE)	32534-81-9		
Polybromobiphenyls (PBB)	59536-65-1		
Tetrabromobisphenol A (TBBPA)	79-94-7		
Tris-(2-chloro-1-methylethyl) phosphate (TCPP)	13674-84-5		
Tris(1-aziridinyl)phosphine oxide) (TEPA)	545-55-1		
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8		
Tris(2-chloroethyl) phosphate (TCEP)	115-96-8		
Tris(2,3,-dibromopropyl)-phosphate (TRIS)	126-72-7		
Decabromobiphenyl (DecaBB)	13654-09-6	Textile only: 25	
Dibromobiphenyls (DiBB)	Multiple		
Octabromobiphenyls (OctaBB)			
Dibromopropylether	21850-44-2		
Heptabromodiphenyl ether (HeptaBDE)	68928-80-3		
Hexabromodiphenyl ether (HexaBDE)	36483-60-0		
Monobromobiphenyls (MonoBB)	Multiple		
Monobromodiphenylethers (MonoBDEs)			
Nonabromobiphenyls (NonaBB)			

Table 1J: **Flame Retardants (continued)**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Nonabromodiphenyl ether (NonaBDE)	63936-56-1	Textile only: 25	USEPA 8270E, ISO 22032, USEPA 527 and USEPA 8321B Dichloromethane extraction GC-MS or LC-MS(-MS)
Tetrabromodiphenyl ether (TetraBDE)	40088-47-9		
Tribromodiphenylethers (TriBDEs)	Multiple		
Boric acid	10043-35-3 11113-50-1	Textile only: 100[c]	determined as total boron via ICP
Diboron trioxide	1303-86-2		
Disodium octaborate	12008-41-2		
Disodium tetraborate anhydrous	1303-96-4 1330-43-4		
Tetraboron disodium heptaoxide, hydrate	12267-73-1		

Table 1K: **Glycols / Glycol Ethers**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
2-ethoxyethanol	110-80-5	Textile and Leather: 50	USEPA 8270E Liquid extraction, LC-MS GC-MS
2-ethoxyethyl acetate	111-15-9		
2-methoxyethanol	109-86-4		
2-methoxyethylacetate	110-49-6		
2-methoxypropylacetate	70657-70-4		
Bis(2-methoxyethyl)-ether	111-96-6		
Ethylene glycol dimethyl ether	110-71-4	Textile and Leather: 50	USEPA 8270E Liquid extraction, LC-MS GC-MS
Triethylene glycol dimethyl ether	112-49-2		

Table 1L: **Halogenated Solvents**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
1,2-dichloroethane	107-06-2	Textile and Leather: 1	USEPA 8260D Headspace GC-MS or Purge and trap GC-MS
Methylene chloride	75-09-2		
Tetrachloroethylene	127-18-4		
Trichloroethylene	79-01-6		

Table 1M: **Organotin Compounds**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Dipropyltin compounds (DPT)	Multiple	Textile and Leather: 0.01	ISO 17353 Derivatisation with NaB (C2H5) GC-MS
Mono-, di- and tri-butyltin derivatives			
Mono-, di- and tri-methyltin derivatives			
Mono-, di- and tri-octyltin derivatives			
Mono-, di- and tri-phenyltin derivatives			
Tetrabutyltin compounds (TeBT)			
Tripropyltin Compounds (TPT)			
Tetraoctyltin compounds (TeOT)			
Tricyclohexyltin (TCyHT)			
Tetraethyltin Compounds (TeET)			ISO 17353

Table 1N: **Other/Miscellaneous Chemicals**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
AEEA [2-(2-aminoethylamino)ethanol]	111-41-1	Textile only: 500	Liquid extraction, LC-MSMS
Bisphenol A	80-05-7	Textile only: 10	Liquid extraction, LC-MS
Thiourea	62-56-6	Textile only: 50	
Quinoline	91-22-5		
Borate, zinc salt	12767-90-7	Textile only: 100[d]	determined as total boron and total zinc via ICP
Silica[e] (Used in sand blasting)	14464-46-1	Textile and Leather: N/A	Not a ZDHC Wastwater parameter

Table 1O: **Perfluorinated and Polyfluorinated Chemicals (PFCs)**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	Multiple	Textile and Leather: 0.01	PFCs: EPA 537:2020 FTOH: BS EN 12673-1999, EPA 8270, PFCs: LC-MSMS FTOH: GC-MS Derivatisation with acetic anhydride followed by GC-MS
Perfluorooctanoic acid (PFOA) related substances		Textile and Leather: 1	

Table 1P: **Phthalates – including all other esters of ortho-phthalic acid**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
1,2-benzenedicarboxylic acid, di-C6-8 branched and linearalkyl esters , C7-rich (DIHP)	71888-89-6 84777-06-0	Textile and Leather: 10	USEPA 8270E, ISO 18856 Dichloromethane extraction GC-MS
1,2-benzenedicarboxylic acid, di-C7-11 branched and linearalkyl esters (DHNUP)	68515-42-4 68515-50-4		
Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8		
Butyl benzyl phthalate (BBP)	85-68-7		
Di-cyclohexyl phthalate (DCHP)	84-61-7		
Di-iso-decyl phthalate (DIDP)	26761-40-0		
Di-iso-octyl phthalate (DIOP)	27554-26-3		
Di-isobutyl phthalate (DIBP)	84-69-5		
Di-isononyl phthalate (DINP)	28553-12-0		
Di-n-hexyl phthalate (DnHP)	84-75-3		
Di-n-octyl phthalate (DNOP)	117-84-0		
Di-n-pentylphthalates	131-18-0		
Di-n-propyl phthalate (DPRP)	131-16-8		
Di(ethylhexyl) phthalate (DEHP)	117-81-7		
Dibutyl phthalate (DBP)	84-74-2		
Diethyl phthalate (DEP)	84-66-2	Textile and Leather: 10	USEPA 8270E, ISO 18856 Dichloromethane extraction GC-MS
Diisopentylphthalates	605-50-5		
Dinonyl phthalate (DNP)	84-76-4		

Table 1Q: **Polycyclic Aromatic Hydrocarbons (PAHs)**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Acenaphthene	83-32-9	Textile and Leather: 1	USEPA 8270E DIN 38407-39 Solvent extraction GC-MS
Acenaphthylene	208-96-8		
Anthracene	120-12-7		
Benzo[a]anthracene	56-55-3		
Benzo[a]pyrene (BaP)	50-32-8		
Benzo[b]fluoranthene	205-99-2		
Benzo[e]pyrene	192-97-2		
Benzo[ghi]perylene	191-24-2		
Benzo[j]fluoranthene	205-82-3		
Benzo[k]fluoranthene	207-08-9		
Chrysene	218-01-9		
Dibenz[a,h]anthracene	53-70-3		
Fluoranthene	206-44-0	Textile and Leather: 1	USEPA 8270E DIN 38407-39 Solvent extraction GC-MS
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 1R: **Restricted Aromatic Amines (Cleavable from Azo-colourants)[f]**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
2-naphthylamine	91-59-8	Textile and Leather: 0.1	Reduction step with sodium dithionite, solvent extraction USEPA 8270E and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/MS/MS
2-Naphthylammoniumacetate	553-00-4		
2,4-xylidine	95-68-1		
2,4,5-trimethylaniline	137-17-7		
2,4,5-trimethylaniline hydrochloride	21436-97-5		
2,6-xylidine	87-62-7		
3,3'-dichlorobenzidine	91-94-1		
3,3-dimethoxylbenzidine	119-90-4		
3,3-dimethylbenzidine	119-93-7		
4-aminoazobenzene	60-09-3	Textile and Leather: 0.1	Reduction step with sodium dithionite, solvent extraction USEPA 8270E and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/MS/MS
4-aminodiphenyl	92-67-1		
4-chloro-o-toluidine	95-69-2		
4-chloro-o-toluidinium chloride	3165-93-3		
4-chloroaniline	106-47-8		
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	39156-41-7		
4-methoxy-m-phenylenediamine	615-05-4		
4-methyl-m-phenylenediamine	95-80-7		
4,4-methylene-bis-(2-chloro-aniline)	101-14-4		
4,4-methylenedi-o-toluidine	838-88-0		
4,4-methylenedianiline	101-77-9		
4,4-oxydianiline	101-80-4		
4,4-thiodianiline	139-65-1		
5-nitro-o-toluidine	99-55-8		
6-methoxy-m-toluidine	120-71-8		
Benzidine	92-87-5		
o-aminoazotoluene	97-56-3		
o-anisidine	90-04-0		
o-toluidine	95-53-4		

Table 1S: **UV Absorbers**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec- butyl) phenol (UV-350)	36437-37-3	Textile only: 100	USEPA 8270 ISO 22032, USEPA 527 and USEPA 8321B. Dichloromethane extraction GC-MS or LC-MS(-MS)
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1		
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7		
2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327)	3864-99-1		

Table 1T: **Volatile Organic Compounds (VOC)**

Substance	CAS Number	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Benzene	71-43-2	Textile and Leather: 1	ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D Add ISO 20595 Static headspace for determination of VOC in wastewater
m-cresol	108-39-4		ISO 11423-1 Headspace or Purge and trap GC-MS EPA 8270 BS EN 12673-1999
o-cresol	95-48-7	Textile and Leather: 1	ISO 11423-1 Headspace or Purge and trap GC-MS EPA 8270 BS EN 12673-1999
p-cresol	106-44-5		
Xylene	1330-20-7	Textile only: 1	ISO 11423-1 Headspace or Purge and trap GC-MS USEPA 8260D
Toluene[g]	108-88-3	Textile only: 1	HJ 1067 or EPA 8260D or ISO 11423-1

Parameter	Unit	Parameter limit values			Standard methods for analysis and testing Equivalent methods can be used if approved by ZDHC			
		Wastewater Foundational	Wastewater Progressive	Wastewater Aspirational	International/ Europe	USA	China	India
Antimony*	mg/L	Textile and Leather: 0.1	Textile and Leather: 0.05	Textile and Leather: 0.01	ISO 17294	USEPA 200.8 USEPA 6010C USEPA 6020A	HJ 700	IS 3025 (Part 65)
Chromium (VI)	mg/L	Textile: 0.05 Leather: 0.15	Textile: 0.005 Leather: 0.05	Textile: 0.001 Leather: 0.02	ISO 18412	USEPA 218.6	GB 7467	IS 3025 (Part 52) must meet reporting limit
Barium	mg/L	Textile: Sample and report only				EPA 200.8 EPA 6010C EPA 6020A	HJ 700	
Selenium	mg/L							
Tin	mg/L							

Parameter	Unit	Parameter limit values			Standard methods for analysis and testing Equivalent methods can be used if approved by ZDHC			
		Wastewater Foundational	Wastewater Progressive	Wastewater Aspirational	International/ Europe	USA	China	India
Arsenic	mg/L	Textile and Leather: 0.05	Textile and Leather: 0.01	Textile and Leather: 0.005	ISO 17294	USEPA 200.8 USEPA 6010C USEPA 6020A	HJ 700	IS 3025 (Part 65)
Chromium, total	mg/L	Textile: 0.2 Leather: 1.5	Textile: 0.1 Leather: 0.8	Textile: 0.05 Leather: 0.3				IS 3025 (Part 65)
Cobalt	mg/L	Textile and Leather: 0.05	Textile and Leather: 0.02	Textile and Leather: 0.01				
Cadmium	mg/L	Textile and Leather: 0.1	Textile and Leather: 0.05	Textile and Leather: 0.01			GB 7475 HJ 700	IS 3025 (Part 65) IS 3025 (Part 41) AAS Instrumental Method
Copper	mg/L	Textile and Leather: 1	Textile and Leather: 0.5	Textile and Leather: 0.25				IS 3025 (Part 65) IS 3025 (Part 42) AAS Instrumental Method
Lead	mg/L	Textile and Leather: 0.1	Textile and Leather: 0.05	Textile and Leather: 0.01				IS 3025 (Part 65) IS 3025 (Part 47) AAS Instrumental Method
Nickel	mg/L	Textile and Leather: 0.2	Textile and Leather: 0.1	Textile and Leather: 0.05			GB 11912 HJ 700	IS 3025 (Part 65) IS 3025 (Part 54) AAS Instrumental Method
Silver	mg/L	Textile and Leather: 0.1	Textile and Leather: 0.05	Textile and Leather: 0.005			GB 11907 HJ 700 I	IS 3025 (Part 65)
Zinc	mg/L	Textile and Leather: 5	Textile and Leather: 1	Textile and Leather: 0.5			GB 7472 GB 7475 HJ 700	IS 3025 (Part 65) IS 3025 (Part 49) AAS Instrumental Method
Mercury	mg/L	Textile and Leather: 0.01	Textile and Leather: 0.005	Textile and Leather: 0.001	ISO 17294	EPA 200.8-SIM EPA 6020A-SIM EPA 245.1 EPA 245.7	HJ 597 HJ 694	IS 3025 part 48 cold vapor AAS only, IS 3025 part 65-SI

Parameter	Unit	Parameter limit values			Standard methods for analysis and testing Equivalent methods can be used if approved by ZDHC			
		Wastewater Foundational	Wastewater Progressive	Wastewater Aspirational	International/ Europe	USA	China	India
Conventional Parameters (Testing conducted during sample collection for pH, Temperature difference, Persistent Foam, Wastewater flowrate, DO, Total Chlorine)								
pH[a]	pH	Textile and Leather: 6 - 9			ISO 10523	USEPA 150.1 SM 4500-H+	HJ 1147	IS 3025 (Part 11) Electrometric method only
Temperature difference[b]	°C	Textile and Leather:			DIN 38 404-4 or equivalent	USEPA 170.1 SM 2550	GB/T 13195	IS 3025 (Part 9)
		Δ+15	Δ+10	Δ+5				
E.coli	MPN/100-ml	Textile and Leather: 126 MPN/100-ml				SM 9221B presumptive, confirm positive with SM9221F or G		
Colour[c] (436nm; 525nm; 620nm)	m-1	Textile and Leather:			ISO 7887-B			
		7; 5; 3	5; 3; 2	2; 1; 1				
Persistent Foam[d]	Absent/ Present	Textile and Leather: No indication of Persistent foam in receiving water			N/A			
Wastewater Flowrate[e]	15m³ per day							
Ammonium-Nitrogen	mg/L	Textile: 10 Leather: 15	Textile: 1 Leather: 10	Textile: 0.5 Leather: 1	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) phenate or ammonia selective electrode only
AOX	mg/L	Textile only: 3	Textile only: 0.5	Textile only: 0.1	ISO 9562	HACH LCK 390 Merck 1.00675.0001	HJ/T 83-2001	
Biochemical Oxygen Demand 5-days concentration (BOD_5)	mg/L	Textile: 30 Leather: 50	Textile: 15 Leather: 30	Textile: 8 Leather: 20	ISO 5815-1	USEPA 405.1 SM 5210-B	HJ 505	IS 3025 (Part 44) seeded dilution water (BOD_5)
Chemical Oxygen Demand (COD)	mg/L	Textile: 150 Leather: 250	Textile: 80 Leather: 150	Textile: 40 Leather: 100	ISO 6060[f] ISO 15705	USEPA 410.4 SM 5220-D	HJ 828 GB/T 11914 e	IS 3025 (Part 58) e
Dissolved Oxygen (DO)[g]	mg/L	Textile and Leather: Sample and report only			ISO 5814	EPA 360.1 SM 4500-O-G	HJ 506	
Oil & Grease	mg/L	Textile: 10 Leather: 20	Textile: 2 Leather: 10	Textile: 0.5 Leather: 5	ISO 9377-2	SM 5520-B/C USEPA 1664 revision B	HJ 637 (total oil and grease)	IS 3025 (Part 39) partition gravimetric or partition Infra-red
Total Phenols / Phenol Index	mg/L	Textile and Leather: 0.5	Textile: 0.01 Leather: 0.3	Textile: 0.001 Leather: 0.1	ISO 6439	SM 5530-B/C	HJ 503 must meet required reporting limit	IS 3025 (Part 43)
Total Chlorine[a]	mg/L	Textile and Leather: Sample and report only			ISO 7393-2	EPA 330.5 SM4500-Cl-G	HJ 586	
Total Dissolved Solids (TDS)[i]	mg/L	Textile and Leather: Sample and report only				SM 2540-C USEPA 160.1	GB/T 5750.4-2006 180°C (180 degree centigrade)	IS 3025 (Part 16) 179°C to 181°C
Total Nitrogen	mg/L	Textile: 20 Leather: 35	Textile: 10 Leather: 20	Textile: 5 Leather: 10	ISO 11905 - Part 1 ISO 29441	USEPA 351.2 SM 4500P-J SM 4500N-B SM 4500N-C	HJ 636	IS 3025 (Part 34) measure and total all forms of nitrogen (ammonia,nitrate, nitrite,organic)
Total Phosphorus	mg/L	Textile and Leather: 3	Textile: 0.5 Leather: 1	Textile: 0.1 Leather: 0.5	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)
Total Suspended Solids (TSS)	mg/L	Textile: 50 Leather: 70	Textile: 15 Leather: 50	Textile: 5 Leather: 20	ISO 11923	USEPA 160.2 SM 2540D	GB/T 11901	IS 3025 (Part 17) 103°C to 105°C
Anions								
Chloride	mg/L	Textile and Leather: Sample and report only			ISO 10304-1 ISO 15923-1	SM 4110-B SM 4110-C SM 4500-Cl D or E USEPA 300	HJ 84-2016	IS 3025 (Part 32) potentiometric or automated ferricyanide only
Cyanide, total	mg/L	Textile only: 0.2	Textile only: 0.1	Textile only: 0.05	ISO 6703-1,-2,-3, ISO 14403-1,-2	USEPA 335.2, APHA 4500-CN	HJ 484	
Sulfate	mg/L	Textile and Leather: Sample and report only			ISO 10304-1 ISO 15923-1	SM 4500 SO4, E, F, G SM 4110 B, C USEPA 300 USEPA 9038	HJ 84-2016	IS 3025 (Part 24)
Sulfide	mg/L	Textile: 0.5 Leather: 1	Textile: 0.05 Leather: 0.5	Textile: 0.01 Leather: 0.2	ISO 10530	SM 4500-S2-D, E,G, or I	GB/T 16489	IS 3025 (Part 29) Methylene blue only
Sulfite	mg/L	Textile only: 2	Textile only: 0.5	Textile only: 0.2	ISO 10304-3	SM 4500-SO32-C	HJ 84-2016	