BURBERRY

LONDON ENGLAND

EFFLUENT TESTING TREND ANALYSIS
JUNE 2020

CONTENTS

EXECUTIVE SUMMARY

This reports aims to analyse and disclose the results of wastewater testing performed by Burberry partners in 2019. The trends are also compared against previous rounds of testing, in order to track the adherence to the *Zero Discharge of Hazardous Chemicals Wastewater Guidelines* (ZDHC WWG)[1].

Overall, figures show that since Burberry started implementing ZDHC WWG in 2017, there has been an increase of about 50% in the number of facilities participating in wastewater testing, achieving over 99% of adherence to the ZDHC WWG for the MRSL parameters, 55% of the conventional parameters achieving the Aspirational level and over 99% of adherence for metals and anions[2].

INTRODUCTION

In 2014, Burberry committed to eliminating chemicals of concern from production[3], by taking an input-management approach, and adopting the *Zero Discharge Hazardous Chemicals Manufacturing Restricted Substances List* (MRSL)[4]. Wastewater testing became crucial in monitoring the potential use of these unwanted substances in the production processes associated to Burberry products. Additionally, by going beyond the required international and local environmental and safety standards, it promotes continuous improvements in the overall industry wastewater quality. Burberry supply chain partners are requested to implement the ZDHC WWG, meaning performing testing twice a year (before April and October), at a ZDHC accredited laboratory. The results must be disclosed on the *ZDHC Gateway – Wastewater Module*[5], a web-based library to share verified data on wastewater.

Burberry's raw material suppliers[6] and finished goods vendors[7] are requested to engage their wet processing partners. The figures reported in this document only account for the results that have been updated and disclosed on the *ZDHC Gateway - Wastewater Module*, to reflect Burberry's commitment to supporting a unified standard for wastewater testing, as well as to promote transparency.

Burberry assess partners' chemical management practices and ensures that Wastewater testing is implemented though specific Key Performance Indicators (KPIs) in the Burberry *Partner Progress Tool (PPT)*[8]. Burberry partners who do not meet the ZDHC WWG limits for MRSL or Conventional parameters are required to perform a Root-Cause-Analysis and share the findings with Burberry.

This document focuses on results that were sampled in April and October 2019[9].

The purpose of this document is also to compare the latest results with the data gathered since the launch of the ZDHC WWG in October 2017, with the aim of analysing the trends over time and to identify the key improvement areas.

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1 ZDHC Wastewater Guidelines V 1.1
2 Conventional parameters, metals and anions levels of adherence are calculated for direct discharge facilities.
3Burberry Commitment on Chemical Management in Manufacturing
4 Burberry MRSL
5 ZDHC Gateway – Wastewater Module
6 Any company that supplies goods or services to Burberry PLC directly or indirectly. This includes but is not limited to printing, weaving, knitting, dyeing, processing, etc.
7 Any company that supplies Burberry with finished goods
8 Burberry PPT Use Guidance
9 All tests performed and disclosed on ZDHC Gateway from the 1st of November 2019 to the 30th of April 2019 are included in April 2019 testing round, whereas the tests performed and disclosed from the 1st of May 2019 to the 31st of October 2019 are included in October 2019 testing round.

The complete testing data, along with Burberry's own testing program launched in 2014, is publicly available on Burberry Policies and Commitments page.

METHODOLOGY

Wastewater tests are performed according to *ZDHC WWG* methodology against the parameters in Appendix 1. Therefore, sampling and reporting activities have been carried out by ZDHC Provisionally Accepted Laboratories. Burberry does not currently request sludge to be tested.

Given that ZDHC guidelines are not specifically applicable to leather, tests results from leather processing are not taken into account in the trend analysis.

TREND ANALYSIS

Data Overview

In 2019, 105 wastewater test reports were published and disclosed on the *ZDHC Gateway-Wastewater Module* by Burberry partners, 44 in April and 61 in October[10] (Table 1). The facilities that participated represent 29% and 64.4% of Burberry's final product, respectively. 69% of the facilities are located in Europe, and 31% in Asia.

	Apr-19	Oct-19
Textile - Direct[11]	9	7
Leather - Direct	0	1
Textile - Indirect[11]	33	51
Leather - Indirect	2	2
TOTAL	44	61

Table 1: Number of facilities participating in 2019 wastewater testing

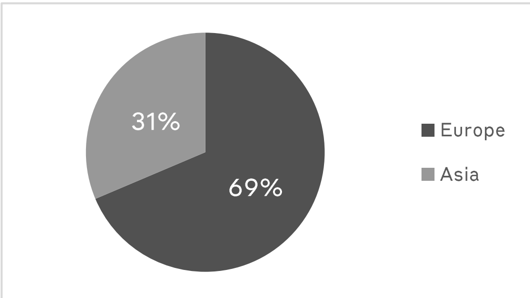

Figure 1: Geographical distribution of the facilities participating in 2019 wastewater testing

10 These figures include tanneries

11 Reference: Glossary, definition of direct and indirect facility

October 2019 saw an increase of about 40%, in the number of facilities performing wastewater testing, publishing and disclosing test reports on ZDHC Gateway – Wastewater Module, compared to April (Figure 2).

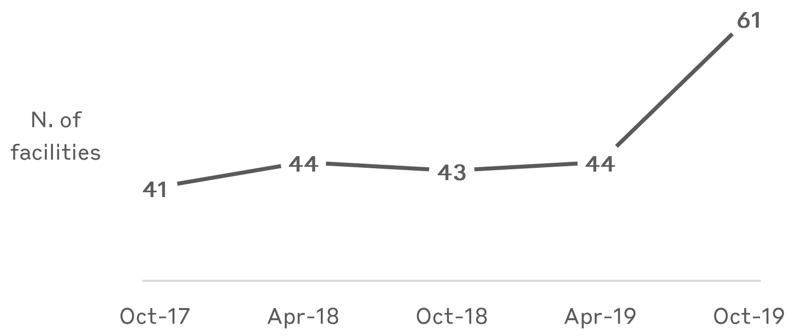

Figure 2: Number of test reports disclosed on ZDHC Gateway – Wastewater Module

This sharp increase may be a result from more Brands requiring their supply chain to perform wastewater testing - under unified ZDHC Guidelines – as well as Burberry partners cascading the request (as solicited by Burberry PPT), and therefore involving an increasing number of facilities each year.

ZDHC MRSL parameters

At the chemical group level, detected parameters in 2019 raw or discharged wastewater are mostly linked to PFCs and Halogenated Solvents (in particular Tetrachloroethylene, CAS 127-18-4), as shown in figure 3 below:

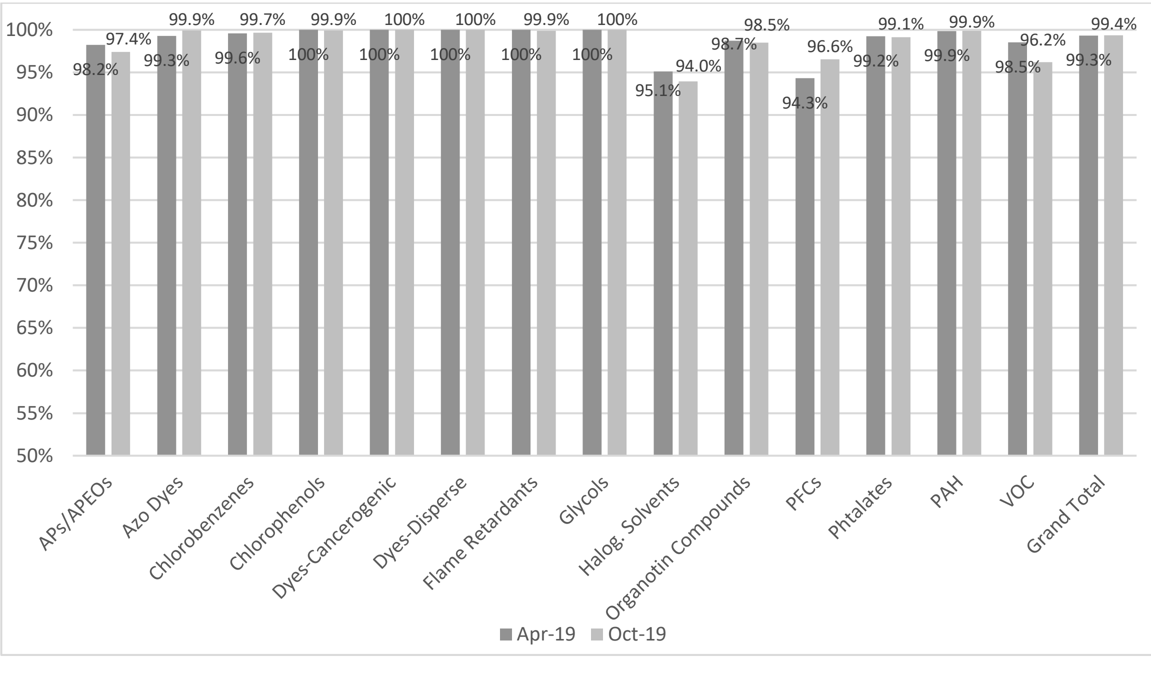

Figure 3: % of adherence to ZDHC MRSL limits per chemical group in 2019

No traces of Carcinogenic Dyes, Disperse Dyes or Glycols have been found in wastewater since 2017. Similarly, Flame Retardants, Azo Dyes, PAH, Chlorobenzenes and Chlorophenols detections have been found to be marginal or absent since 2017. Other chemical groups with decreasing detections rates include AP/APEOS and Phthalates. In 2017 AP/APEOS had a 91% level of adherence to the MRSL, which in October 2019 increased to 98%. Similarly, in 2017 Phthalates had 93% level of adherence, which increased to 99%. Overall, wastewater test results reached 99% conformity to the MRSL in 2019.

In accordance to ZDHC WWG, Burberry requires its partners to test incoming water when MRSL parameters are detected in discharged or raw wastewater, which indicates a possible issue of freshwater contamination in certain areas where Burberry's supply chain operates. Detections in incoming water were found for 15 facilities, 14 of which are located in Italy. The detection of Halogenated Solvents, APs/APEOs and PFCs are frequent in incoming water and could explain 68% of all 2019 detections in raw or discharged wastewater. The wet process facilities with detections in incoming waters represent 13% of Burberry product.

Conventional Parameters

Conventional parameter limits are particularly important when considering Direct Discharge facilities (i.e. facilities with complete wastewater treatment on site and discharging into water bodies). In the case of indirect discharge facilities (facilities which discharge to a centralised ETP), conventional parameters are tested to ensure legal compliance to their permit to discharge and to promote continuous improvement. Burberry requires facilities to share their discharge permit, in order to identify non-conformities. The figures below include direct discharge facilities only.

The ZDHC WWG Conventional parameter results are classified according to a the three level approach (*Foundational*, *Progressive* and *Aspirational* limits), to encourage facilities to improve their wastewater quality, beyond legal requirements.

Overall, in 2019 51% of conventional parameters achieved the aspirational level, and 6 of the 9 facilities achieving these results are located in Europe. Despite a slight decrease in the share of analytes reaching the highest aspirational level between April and October, the percentage of analytes which did not meet the foundational level more than halved in the same period, showing effective actions were undertaken by the wet processors to account for detections.

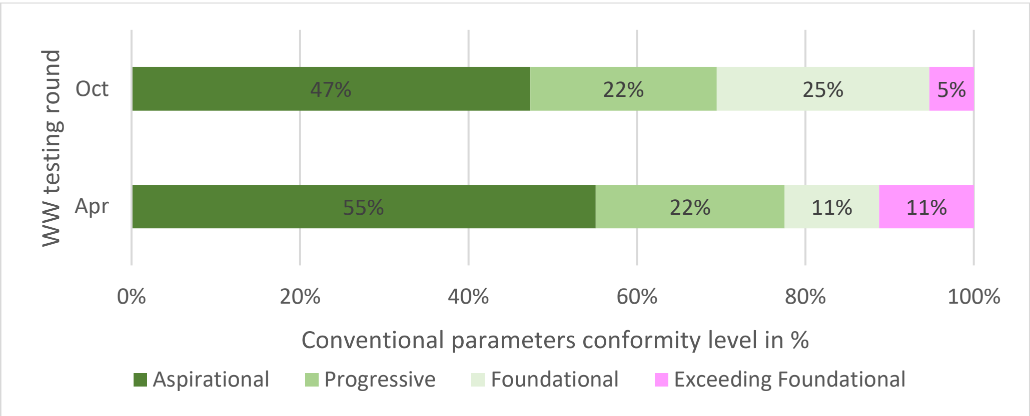

Figure 4: Conformity of Conventional parameters to WWG limits, in April and October 2019 - direct discharge facilities

Over the 193 conventional parameters tested in 2019, 179 were found to meet ZDHC WWG requirements, also showing an increase from 91% to 95% between April and October. Detections most commonly identify with coliform and colour, and were mainly found for facilities located in Europe (4 out of 6 facilities). Figure 5 further details the quality levels achieved per analyte, for direct discharge facilities.

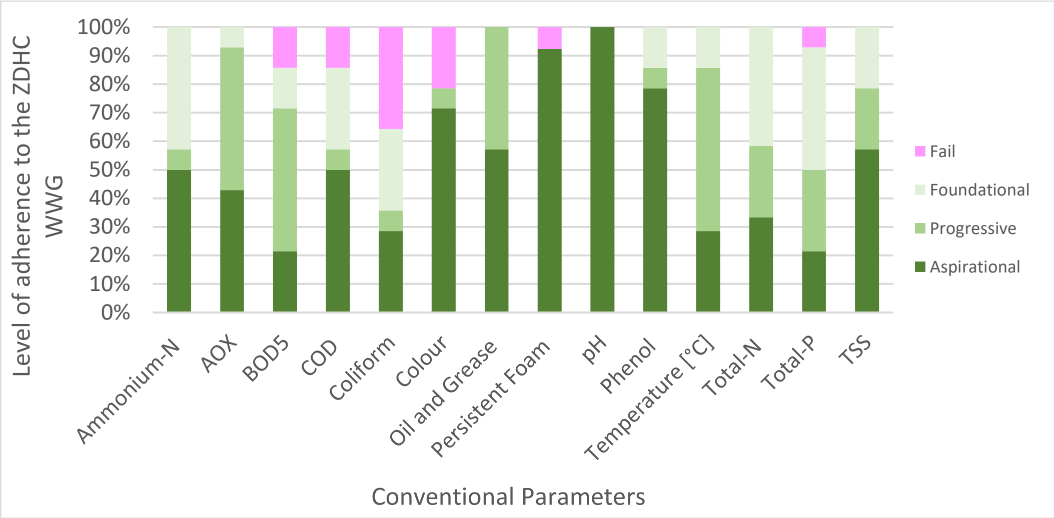

Figure 5: Conformity level of Conventional parameters to WWG limits in 2019 - direct discharge facilities

Heavy Metals & Anions

The same analysis was performed on heavy metals and anions, showing a 99.05% conformity level for direct discharge facilities, with 89% achieving Aspirational level. Only 2 of the 403 analytes tested in 2019 did not meet the Foundational limit. That is, Sulphide and Sulphite were detected for one Asian printing facility, in April only. Therefore, in October round, when all direct discharge facilities were found to have reached 100% conformity level to ZDHC WWG, Sulphide and Sulphite were found to be the only parameters not reaching the Progressive or the Aspirational levels, thus underlining the need to closely monitor them in the future.

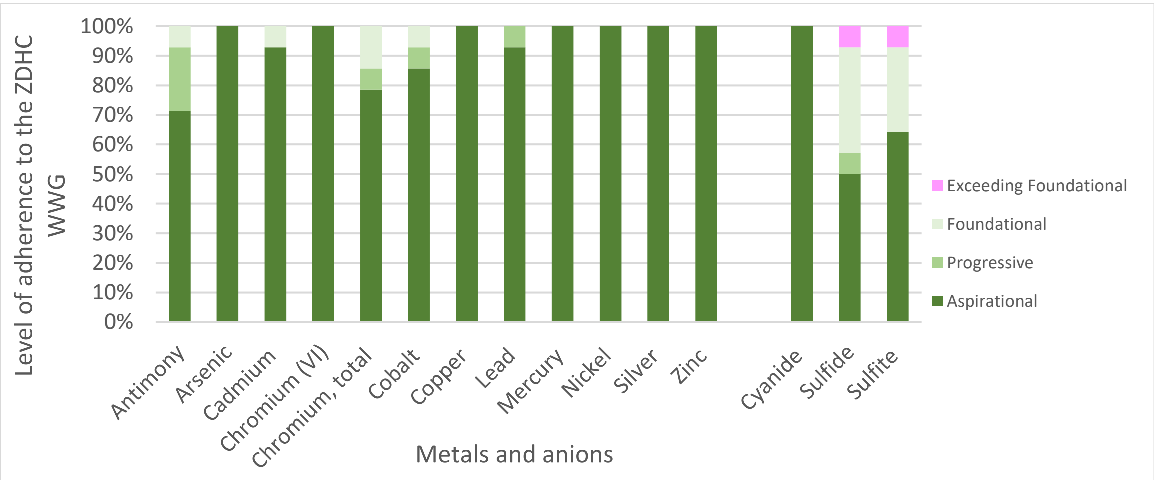

Figure 6: Heavy metals and anions conformance levels in 2019 – direct discharge facilities

CONCLUSIONS

Burberry is supporting the implementation of *ZDHC WWG* in its supply chain, and encourages wastewater testing to be performed twice a year. Root-Cause-Analysis activities are carried out to track and resolve non-conformities.

Data is monitored to track the supply chain's engagement and to underline improvement areas. Overall, trends suggest that the number of Burberry suppliers adhering to the ZDHC wastewater programme is increasing over time, whilst MSRL parameters detections continue to decline, exceeding 99% non-detections in both April and October.

Halogenated Solvents has proven to be the among the chemical groups registering relatively most detections per round, since 2017. By the same token, the attention was lately brought on PFCs, given 2019 test results. Halogenated Solvents, APEOs/APs and PFCs were also found to be present in incoming water, thus underlining a possible contamination of the freshwater resources used by Burberry partners.

No traces of Carcinogenic Dyes, Disperse Dyes or Glycols related analytes have been detected since 2017. Similarly, Flame Retardants, Azo Dyes, PAH, Phtalates, Chlorobenzenes and Chlorophenols were found to have very marginal detections in 2019.

Considering Conventional parameters, Colour and Coliform will need to be closely monitored to ensure Foundational limits are met for direct discharge facilities. Similarly, efforts will be redirected towards reducing Sulphide and Sulphite discharge concentrations, among heavy metals and anions parameters.

Considering Coliform in particular, the discussion focus is being brought on the current testing method, as it might be determining the anomalously high levels and detections frequency reported. Wastewater testing is embedded in Burberry's commitment to eliminate unwanted chemicals from its production, and therefore targets on quality are periodically reviewed and tracked to ensure alignment with Burberry's long-term Responsibility Strategy [12] . Indeed, Burberry promotes wastewater testing under unified guidelines, as well as the disclosure of wastewater quality information through ZDHC tools. Therefore, Burberry also participated in a tanneries' pilot coordinated by ZDHC, with the technical support of the Tanneries' Italian Association (UNIC – *Unione Nazionale Industria Conciaria*), also supported by 2 other ZDHC brands. Of the 13 tanneries involved, 7 were Burberry's tanneries.

It is understood that the role of Burberry is not only to encourage the implementation of the WWG along its supply chain, but also to stimulate other brands and stakeholders of the fashion industry to align, in order to effectively drive the change towards cleaner production. Burberry acknowledges the positive advantages that derive from the use of a harmonized system, in eliminating duplicative testing from wet processors, improving the sharing of information and aligning the brands requests to the suppliers. Therefore Burberry will continue to collaborate with ZDHC Foundation and with the other Brands to sensitize the fashion industry.

12 Burberry Policies and Commitments

NEXT STEPS

Burberry will continue to engage the supply chain in wastewater testing, providing internal learning resources and collaborating, as well as promoting trainings organized by third parties. Burberry organised an in-person training on wastewater testing with 44 attendees at a 3rd party laboratory in July 2019 in Italy.

Support will also be granted to improve the understanding of Root-Cause-Analysis methodologies, thus encouraging the supply chain to analyse the test results and plan corrective actions when needed.

Burberry understands the importance of preserving water resources and delivering a water-responsible product. Therefore, future targets will not only continue ensure water quality is preserved, but efforts will be put into action to tackle possible ways to reduce the water consumption along the supply chain, in particular though the launch of Burberry Water Conservation Programme.

Future analysis will also evaluate the impact of covid-19 on the effluents quality and the suppliers participation to testing.

GLOSSARY

- **Direct Discharge:** A point source that discharges waste water 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;
- **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;
- **Raw Waste Water (Raw WW):** Wastewater that has not yet been treated prior to direct or indirect discharge from the facility, or prior to water recycling efforts;
- **Pre-treated Waste Water (Pre-treated WW):** Wastewater that has been pre-treated prior to indirect discharge from the facility to a Centralized Effluent Treatment Plant (CETP)Treated Waste Water (Treated WW): Wastewater that has been fully treated with an on-site ETP, prior to the direct discharge to the environment;
- **Treated Waste Water (Treated WW):** Wastewater that has been fully treated with an on-site ETP, prior to the direct discharge to the environment;
- **Wet process facility:** facility responsible of carrying out an aqueous stage in its production process.

APPENDIX 1

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

Table 1A: Sum Parameters and Anions

The conventional parameters showing foundational, progressive and aspirational limits, and the standard methods for analysis.

* Δ is the degree above ambient temperature of receiving water body.

** Validated cuvette methods can be used alternatively.

mg/L unless otherwise noted	Limits			Standard Method for Analysis/Testing			
	Foundational	Progressive	Aspirational	ISO	European Union	United States	China
Sum parameters							
Temperature [°C] *	Δ15 or max. 35	Δ10 or max. 30	Δ5 or max. 25	No standard	No standard	US EPA 17.01	GB/T 13195
TSS	50	15	5	ISO 11923	ISO 11923	US EPA 160.2, APHA 2540D	GB/T 11901
COD	150	80	40	ISO 6060**	ISO 6060**	US EPA 410.4, APHA 5220D**	GB/T 11914**
Total-N	20	10	5	ISO 5663, ISO 29441	ISO 5663, ISO 29441	US EPA 351.2, APHA 4500P-J, APHA 4500N-C	HJ 636, GB 11891
pH	6-9			ISO 10523	EN ISO 10523	US EPA 150.1	GB/T 6920
Colour [m^{-1}] (436nm; 525; 620nm)	7; 5; 3	5; 3; 2	2; 1; 1	ISO 7887-B	-	-	-
BOD_5	30	15	5	ISO 5815-1, -2 (5 days)	EN 1899-1 (5days)	US EPA 405.1 (5 days), APHA 5210B (5 days)	HJ 505
Ammonium-N	10	1	0.5	ISO 11732, ISO 7150	EN ISO 11732	US EPA 350.1, APHA 4500 NH_3-N	HJ 535, HJ 536
Total-P	3	0.5	0.1	ISO 11885, ISO 6878	EN ISO 11885	US EPA 365.4, APHA 4500P-J	GB/T 11893
AOX	5	1	0.1	ISO 9562	EN ISO 9563	US EPA 1650	HJ/T 83-2001
Oil and Grease	10	2	0.5	ISO 9377-2	EN ISO 9377-2	US EPA 1664	HJ 637
Phenol	0.5	0.01	0.001	ISO 14402	EN ISO 14402	APHA 5530 B, C&D	HJ 503
Coliform [bacteria/100 ml]	400	100	25	ISO 9308-1	EN ISO 9308-1	US EPA 9132	GB/T 5750.12
Persistent Foam	Refer to respective information in section 9.6.A			N/A	N/A	N/A	N/A
Anions							
Cyanide - Total	0.2	0.1	0.05	ISO 6703-1,-2,-3, ISO 14403-1,-2	ISO 6703-1,-2,-3, ISO 14403-1,-2	US EPA 335.2, APHA 4500-CN	HJ 484
Sulfide	0.5	0.05	0.01	ISO 10530	ISO 10530	APHA 4500-S2-D	GB/T 16489
Sulfite	2	0.5	0.2	ISO 10304-3	EN ISO 10304-3	US EPA 377.1	**

Table 1B: Metals

The conventional parameters showing foundational, progressive and aspirational limits, and the standard methods for analysis.

*** Data collection only for polyester production.

mg/L unless otherwise noted	Limits			Standard Method for Analysis/Testing			
	Foundational	Progressive	Aspirational	ISO	European Union	United States	China
Metals							
Antimony***	0.1	0.05	0.01	ISO 11885	EN ISO 11885	US EPA 200.7, US EPA 200.8, US EPA 6010c, US EPA 6020a	GB 7475, HJ 700
Chromium, total	0.2	0.1	0.05				GB 7466, HJ 700
Cobalt	0.05	0.02	0.01				HJ 700
Copper	1	0.5	0.25				GB 7475, HJ 700
Nickle	0.2	0.1	0.05				GB 11907, HJ 700
Silver	0.1	0.05	0.005				GB 11907, HJ 700
Zinc	5.0	1.0	0.5				GB 7472, GB 7475, HJ 700
Arsenic	0.05	0.01	0.005	ISO 11885	EN ISO 11885	US EPA 200.7, US EPA 200.8, US EPA 6010c, US EPA 6020a	GB 7475, HJ 700
Cadmium	0.1	0.05	0.01	ISO 11885	EN ISO 11885	US EPA 200.7, US EPA 200.8, US EPA 6010c, US EPA 6020a	GB 7475, HJ 700
Chromium (VI)	0.05	0.005	0.001	ISO 18412	EN ISO 18412	US EPA 218.6	GB 7467
Lead	0.1	0.05	0.01	ISO 11885	EN ISO 11885	US EPA 200.7, US EPA 200.8, US EPA 6010c, US EPA 6020a	GB 7475, HJ 700
Mercury	0.01	0.005	0.001	ISO 12846 or ISO 17852	EN ISO 18412 or ISO 17852	US EPA 200.7, US EPA 200.8, US EPA 6010c, US EPA 6020a	HJ 597

Table 2A:

Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): Including All Isomers

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Nonylphenol (NP), mixed isomers	104-40-5 11066-49-2 25154-52-3 84852-15-3	5	NP/OP: ISO 18857 -2 (modified dichloromethane extraction) or ASTM D7065 (GC/MS or LC/MS(-MS) OPEO/NPEO (n>2): ISO 18254-1 OPEO/NPEO (n=1,2): ISO 18857-2 or ASTM D7065
Octylphenol (OP), mixed isomers	140-66-9 1806-26-4 27193-28-8		
Octylphenol ethoxylates (OPEO)	9002-93-1 9036-19-5 68987-90-6		
Nonylphenol ethoxylates (NPEO)	9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0		

Table 2B:

Chlorobenzenes and Chlorotoluenes

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/ Testing
Monochlorobenzene	108-90-7	0,2	USEPA 8260B, 8270D. Dichloro-methane extraction followed by GC/MS
1,2-Dichlorobenzene	95-50-1		
1,3-Dichlorobenzene	541-73-1		
1,4-Dichlorobenzene	106-46-7		
1,2,3-Trichlorobenzene	87-61-6		
1,2,4-Trichlorobenzene	120-82-1		
1,3,5-Trichlorobenzene	108-70-3		
1,2,3,4-Tetrachlorobenzene	634-66-2		
1,2,3,5-Tetrachlorobenzene	634-90-2		
1,2,4,5-Tetrachlorobenzene	95-94-3		
Pentachlorobenzene	608-93-5		
Hexachlorobenzene	118-74-1		
2-Chlorotoluene	95-49-8		
3-Chlorotoluene	108-41-8		
4-Chlorotoluene	106-43-4		
2,3-Dichlorotoluene	32768-54-0		
2,4-Dichlorotoluene	95-73-8		
2,5-Dichlorotoluene	19398-61-9		
2,6-Dichlorotoluene	118-69-4		
3,4-Dichlorotoluene	95-75-0		
3,5-Dichlorotoluene	25186-47-4		
2,3,4-Trichlorotoluene	7359-72-0		
2,3,6-Trichlorotoluene	2077-46-5		
2,4,5-Trichlorotoluene	6639-30-1		
2,4,6-Trichlorotoluene	23749-65-7		
3,4,5-Trichlorotoluene	21472-86-6		
2,3,4,5-Tetrachlorotoluene	76057-12-0		
2,3,5,6-Tetrachlorotoluene	29733-70-8		
2,3,4,6-Tetrachlorotoluene	875-40-1		
Pentachlorotoluene	877-11-2		

Table 2C:

Chlorophenols

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/ Testing
2-chlorophenol	95-57-8	0.5	USEPA 8270 D. Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC/MS ISO 14154:2005
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		
2,3,4,5-tetrachlorophenol	4901-51-3		
2,3,4,6-tetrachlorophenol	58-90-2		
2,3,5,6-tetrachlorophenol	935-95-5		
Pentachlorophenol	87-86-5		

Table 2D:

Dyes – Azo (Forming Restricted Amines)

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/ Testing
4,4'-methylene-bis-(2-chloro-aniline)	101-14-4	0.1	EN 14362-1 EN 14362-3 Reduction step with sodium dithionite, solvent extraction, GC/MS or LC/MS
4,4'-methylenedianiline	101-77-9		
4,4'-oxydianiline	101-80-4		
4-chloroaniline	106-47-8		
3,3'-dimethoxylbenzidine	119-90-4		
3,3'-dimethylbenzidine	119-93-7		
6-methoxy-m-toluidine	120-71-8		
2,4,5-trimethylaniline	137-17-7		
4,4'-thiodianiline	139-65-1		
4-aminoazobenzene	60-09-3		
4-methoxy-m-phenylenediamine	615-05-4		
4,4'-methylenedi-o-toluidine	838-88-0		
2,6-xylidine	87-62-7		
o-anisidine	90-04-0		
2-naphthylamine	91-59-8		
3,3'-dichlorobenzidine	91-94-1		
4-aminodiphenyl	92-67-1		
Benzidine	92-87-5		
o-toluidine	95-53-4		
2,4-xylidine	95-68-1		
4-chloro-o-toluidine	95-69-2		
4-methyl-m-phenylenediamine	95-80-7		
o-aminoazotoluene	97-56-3		
5-nitro-o-toluidine	99-55-8		

Table 2E:

Dyes – Carcinogenic or Equivalent Concern

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/ Testing
C.I. Direct Black 38	1937-37-7	500	Liquid extraction, LC/MS
C.I. Direct Blue 6	2602-46-2		
C.I. Acid Red 26	3761-53-3		
C.I. Basic Red 9	569-61-9		
C.I. Direct Red 28	573-58-0		
C.I. Basic Violet 14	632-99-5		
C.I. Disperse Blue 1	2475-45-8		
C.I. Disperse Blue 3	2475-46-9		
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		
Disperse Orange 11	82-28-0		

Table 2F:

Dyes – Disperse (Sensitising)

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

Table 2G:

Flame Retardants

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/ Testing
Tris(2-chloroethyl)phosphate (TCEP)	115-96-8	5	US EPA 8270 ISO 22032, USEPA 527 and USEPA 8321B. Dichloro-methane extraction GC/MS or LC/MS (-MS)
Decabromodiphenyl ether (DecaBDE)	1163-19-5		
Tris(2,3,-dibromopropyl) phosphate (TRIS)	126-72-7		
Pentabromodiphenyl ether (PentaBDE)	32534-81-9		
Octabromodiphenyl ether (OctaBDE)	32536-52-0		
Bis(2,3-dibromopropyl) phosphate (BIS)	5412-25-9		
Tris(1-aziridinyl) phosphine oxide (TEPA)	545-55-1		
Polybromobiphenyls (PBB)	59536-65-1		
Tetrabromobisphenol A (TBBPA)	79-94-7		
Hexabromocyclododecane (HBCDD)	3194-55-6		
2,2-bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0		
Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8		
Short-chain chlorinated Paraffins (SCCP) (C10-C13)	85535-84-8		

Table 2H:

Glycols

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

Table 2I:

Halogenated Solvents

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

Table 2J:

Organotin Compounds

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/ Testing
Mono-, di- and tri-methyltin derivatives	Multiple	0.01	ISO 17353 Derivatisation with NaB(C2H5) GC/MS
Mono-, di- and tri-butyltin derivatives	Multiple		
Mono-, di- and tri-phenyltin derivatives	Multiple		
Mono-, di- and tri-octyltin derivatives	Multiple		

Table 2K:

Perfluorinated and Polyfluorinated Chemicals (PFCs)

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/ Testing
PFOS	1763-23-1	0.01	DIN 38407-42 (modified) Ionic PFC: Concentration or direct injection, LC/MS(-MS); Non-ionic PFC (FTOH): derivatisation with acetic anhydride followed by GC/ MS
PFOA	335-67-1		
PFBS	375-73-5 29420-49-3 29420-43-3		
PFHxA	307-24-4		
8:2 FTOH	678-39-7	1	
6:2 FTOH	647-42-7		

Table 2L:

Ortho-Phthalates – Including all ortho esters of phthalic acid

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

Table 2M:

Polycyclic Aromatic Hydrocarbons (PAHs)

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/ Testing
Benzo[a]pyrene (BaP)	50-32-8	1	US EPA 8270 DIN 38407-39 Solvent extraction GC/MS
Anthracene	120-12-7		
Pyrene	129-00-0		
Benzo[ghi]perylene	191-24-2		
Benzo[e]pyrene	192-97-2		
Indeno[1,2,3-cd]pyrene	193-39-5		
Benzo[j]fluoranthene	205-82-3		
Benzo[b]fluoranthene	205-99-2		
Fluoranthene	206-44-0		
Benzo[k]fluoranthene	207-08-9		
Acenaphthylene	208-96-8		
Chrysene	218-01-9		
Dibenz[a,h]anthracene	53-70-3		
Benzo[a]anthracene	56-55-3		
Acenaphthene	83-32-9		
Phenanthrene	85-01-8		
Fluorene	86-73-7		
Naphthalene	91-20-3		

Table 2N:

Volatile Organic Compounds (VOC)

Substance or Substance Group	CAS	Reporting Limit (µg/L)	Standard Method for Analysis/Testing
Benzene	71-43-2	1	ISO 11423-1 Headspace- or Purge-and-Trap-GC/MS US EPA 8260
Xylene	1330-20-7		
o-cresol	95-48-7		
p-cresol	106-44-5		
m-cresol	108-39-4		