TEST REPORT

Technical Report	**2209820**	April 11, 2022
Date Received	March 4, 2022	Page 1 of 19

Factory Company Name：	Artcolor srl Tintoria industriale
Factory Address:	Via Bologna, 288 59025 Cantagallo (PO)
Project No.:	N/A
Client Reference No.:	N/A
Sample Type:	Wastewater, raw – 6h Composite Grab Samples* Incoming – Grab Samples
Sample Pick Up Date:	March 4, 2022
Discharge Type:	Indirect Discharge
Wastewater Discharge to:	Public drainage
Off-site ETP name:	Gida SpA, IDL Cantagallo
Off-site ETP address:	Via Baciacavallo, 36 - 59100 Prato
Local Regulation: / Ordinance / requirements related to wastewater discharged are followed:	AIA n° 7454, document number 21026 date 17/05/2008
On-Site Effluent Treatment Plant (ETP):	No
Test Period:	From March 5, 2022 to April 4, 2022
Testing Option:	Option 2 – Incoming Water, Raw / Untreated Wastewater
Sample Description:	I001) Transparent - Incoming water I002) Reddish liquid – Raw Wastewater

Bureau Veritas Certest srl
Consumer Products Services, Inc.
(Lab Address) Via risorgimento, 16 56028 San Miniato (Pi)
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REMARK

If there are questions or concerns on this report, please contact the following persons:

General enquiry and invoicing
Technical enquiry-Chemical

This report shown the test result of the auxiliary chemical and/or raw material samples, which collected during particular factory audit. The results of this report shall not be used for any regulatory compliance purposes.

* The sampling is agreed with client.

PREPARED BY: Caterina Cellai — Regional Manager - Chemical Management and Sustainability Solutions, Europe

1A) Conventional Parameters	**I001**	**I002**
Temperature	NR	NR
TSS		
COD		
Total-N		
pH Value		
Color [m^{-1}] (436nm; 525nm; 620nm)		
BOD_5		
Ammonium-N		
Total-P		
AOX		
Oil and Grease		
Phenol		
Coliform		
Persistent Foam		
ANIONS - Cyanide		
ANIONS - Sulfide		
ANIONS - Sulfite		
1B) Conventional Parameters – METALS		☐

Note / Key :
☐ – Meet Foundational Limit / Meet discharge license criteria
■ – Exceeding Foundational Limit / Exceeding discharge license criteria
NR – Not Requested / Not required

ZDHC MRSL Substances	**I001**	**I002**
2A) APs and APEOs	NR	o
2B) Chlorobenzenes and Chlorotoluenes	NR	o
2C) Chlorophenols	NR	o
2D) Azo Dyes	NR	o
2E) Carcinogenic Dyes	NR	o
2F) Disperse Dyes	NR	o
2G) Flame Retardants	NR	o
2H) Glycols	NR	o
2I) Halogenated Solvents	NR	o
2J) Organotin Compounds	NR	o
2K) Perfluorinated and Polyfluorinated Chemicals	NR	o
2L) Phthalates	NR	o
2M) Poly Aromatic Hydrocarbons	NR	o
2N) Volatile Organic Compounds	NR	o

Note / Key :
- ● – Detected
- o – Not Detected
- NR – Not Requested
- N/A – Not Applicable

Objective

The environment samples were tested for below parameters.

1B) Conventional Parameters – METALS
2A) APs and APEOs
2B) Chlorobenzenes and Chlorotoluenes
2C) Chlorophenols
2D) Azo Dyes
2E) Carcinogenic Dyes
2F) Disperse Dyes
2G) Flame Retardants
2H) Glycols
2I) Halogenated Solvents
2J) Organotin Compounds
2K) Perfluorinated and Polyfluorinated Chemicals
2L) Phthalates
2M) Poly Aromatic Hydrocarbons
2N) Volatile Organic Compounds

Sampling Plan

Basically, two environment samples were sampled per factory, including 1) Incoming water; 2) Raw wastewater. Total number of sample collected will be depended on the actual factory facilities and manufacturing processes.

Method of sampling used is time-weighted composite grab samples (agreed with client.). Composite sampling shall be performed for no less than six hours, with no more than one hour between discrete samples. Each discrete sample shall be of equal volume. Wastewater and freshwater samples should, as much as possible, be collected simultaneously, during the time that PU is in normal operation. The sampling shall aim to analyse the snapshot of water quality characteristics of the operating PU. Under no circumstance shall samples be taken during times when the production process is not running or the wastewater is diluted due to heavy rainfall, etc.

Remark :

- Sampling procedure is with reference to below standards:
  1) South Australia EPA Guidelines (June 2007), Regulatory Monitoring and Testing Water and Wastewater Sampling.
  2) Australia EPA (Victoria) Guideline (June 2009), Sampling and Analysis of Waters, Wastewaters, Soils and Wastes.
  3) ISO 5667-3:2003, Water Quality - Sampling - Part 3: Guidance on the Preservation and Handling of Water Samples.
  4) ASTM D3976-92 (Reapproved 2010), Standard Practice for Preparation of Sediment Samples for Chemical Analysis.
  - Field on-site photos are attached in appendix A and field data records are attached in Appendix C.

Test Result

1B) Conventional Parameters – METALS

Heavy Metals	**I001** ***(mg/L)***	**I002** ***(mg/L)***
Antimony(Sb) Discharge License Criteria: Not applicable	ND	ND
Chromium(Cr), total Discharge License Criteria: ≤4mg/L	ND	0.033 Comply with discharge license
Cobalt(Co) Discharge License Criteria: Not applicable	ND	ND
Copper(Cu) Discharge License Criteria: ≤ 1,0 mg/L	ND	0.0105 Comply with discharge license
Nickel (Ni) Discharge License Criteria: ≤ 4 mg/L	ND	ND Comply with discharge license
Silver (Ag) Discharge License Criteria: Not applicable	ND	ND
Zinc(Zn) Discharge License Criteria: ≤ 2,0 mg/L	0.004	0.373 Comply with discharge license
Arsenic (As) Discharge License Criteria: ≤ 0.5 mg/L	ND	ND Comply with discharge license
Cadmium(Cd) Discharge License Criteria: ≤ 0.02 mg/L	ND	ND Comply with discharge license
Chromium VI(CrVI) Discharge License Criteria: ≤ 0.20 mg/L	ND	ND Comply with discharge license
Lead(Pb) Discharge License Criteria: ≤0.3 mg/L	ND	ND Comply with discharge license
Mercury (Hg) Discharge License Criteria: ≤0.005 mg/L	ND	ND Comply with discharge license

Others Priority Chemical Groups

	I001 ***(ug/L)***	**I002** ***(ug/L)***
2A) APs and APEOs	NR	ND
2B) Chlorobenzenes and Chlorotoluenes	NR	ND
2C) Chlorophenols	NR	ND
2D) Azo Dyes	NR	ND
2E) Carcinogenic Dyes	NR	ND
2F) Disperse Dyes	NR	ND
2G) Flame Retardants	NR	ND
2H) Glycols	NR	ND
2I) Halogenated Solvents	NR	ND
2J) Organotin Compounds	NR	ND
2K) Perfluorinated and Polyfluorinated Chemicals	NR	ND
2L) Phthalates	NR	ND
2M) Poly Aromatic Hydrocarbons	NR	ND
2N) Volatile Organic Compounds	NR	ND

Remark：

- Test method, reporting limit and list of chemical are summarized in tables of Appendix A.
- ND = Not detected (Please refer to reporting limit shown in Appendix A.).
- All results are in ppb as unit.
- ppm = part(s) per million; ppb = part(s) per billion.

APPENDIX A - Photo of the Sample/ Sampling Location

I001) Sampling Point
N 45°0’37.08”
E 11°8’38.328”

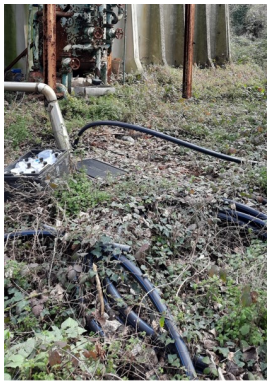
I001) Sampling Point Surrounding Environment
N 45°0’37.08”
E 11°8’38.328”

I001) All sampled bottles with label

I001) pH value

I001) Sample for Phthalate Testing

I001) Packaging

I002) Sampling Point N 45°0’37.08” E 11°8’38.328” 	I002) Sampling Point Surrounding Environment N 45°0’37.08” E 11°8’38.328” 
I002) All sampled bottles with label 	I002) pH value 
I002) Sample for Phthalate Testing 	I002) Packaging 

APPENDIX B

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
2A. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers	Nonylphenol NP, mixed isomers	Various (incl. 104-40-5, 11066-49-2, 25154-52-3, 84852-15-3)	5	0.2	NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC/MS or LC/MS(-MS) OPEO/NPEO: ISO18857-2 or ASTM D7065(LC/MS; GC/MS or LC/MSMS for n=1,2) APEO 1-18
	Octylphenol OP, mixed isomers	Various (incl. 140-66-9, 1806-26-4, 27193-28-8)	5	0.2	
	Octylphenol ethoxylates (OPEO)	Various (incl. 9002-93-1, 9036-19-5, 68987-90-6)	5	0.2	
	Nonylphenol ethoxylates (NPEO)	Various (inc. 9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0)	5	0.2	
2B. Chlorobenzenes and Chlorotoluenes	Monochlorobenzene	108-90-7	0.2	0.1	USEPA 8260B,8270D. Dichloromethane extraction followed by GC/MS
	1,2-Dichlorobenzene	95-50-1	0.2	0.1	
	1,3-Dichlorobenzene	541-73-1	0.2	0.1	
	1,4-Dichlorobenzene	106-46-7	0.2	0.1	
	1,2,3-Trichlorobenzene	87-61-6	0.2	0.1	
	1,2,4-Trichlorobenzene	120-82-1	0.2	0.1	
	1,3,5-Trichlorobenzene	108-70-3	0.2	0.1	
	1,2,3,4-Tetrachlorobenzene	634-66-2	0.2	0.1	
	1,2,3,5-Tetraclorobenzene	634-90-2	0.2	0.1	
	1,2,4,5-Tetrachlorobenzene	95-94-3	0.2	0.1	
	Pentachlorobenzene	608-93-5	0.2	0.1	
	Hexachlorobenzene	118-74-1	0.2	0.1	
	2-Chlorotoluene	95-49-8	0.2	0.1	
	3-Chlorotoluene	108-41-8	0.2	0.1	
	4-Chlorotoluene	106-43-4	0.2	0.1	
	2,3-Dichlorotoluene	32768-54-0	0.2	0.1	
	2,4-Dichlorotoluene	95-73-8	0.2	0.1	
	2,5-Dichlorotoluene	19398-61-9	0.2	0.1	
	2,6-Dichlorotoluene	118-69-4	0.2	0.1	
	3,4-Dichlorotoluene	95-75-0	0.2	0.1	
	3,5-Dichlorotoluene	25186-47-4	0.2	0.1	
	2,3,4-Trichlorotoluene	7359-72-0	0.2	0.1	
	2,3,6-Trichlorotoluene	2077-46-5	0.2	0.1	
	2,4,5-Trichlorotoluene	6639-30-1	0.2	0.1	
	2,4,6-Trichlorotoluene	23749-65-7	0.2	0.1	
	3,4,5-Trichlorotoluene	21472-86-6	0.2	0.1	
	2,3,4,5-Tetrachlorotoluene	76057-12-0	0.2	0.1	
	2,3,5,6-Tetrachlorotoluene	29733-70-8	0.2	0.1	
	2,3,4,6-Tetrachlorotoluene	875-40-1	0.2	0.1	
	Pentachlorotoluene	877-11-2	0.2	0.1	
2C. Chlorophenols	2-Chlorophenol	95-57-8	0.5	0.025	USEPA 8270 D Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC/MS
	3-Chlorophenol	108-43-0	0.5	0.025	
	4-Chlorophenol	106-48-9	0.5	0.025	
	2,3-Dichlorophenol	576-24-9	0.5	0.025	
	2,4-Dichlorophenol	120-83-2	0.5	0.025	
	2,5-Dichlorophenol	583-78-8	0.5	0.025	
	2,6-Dichlorophenol	87-65-0	0.5	0.025	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	3,4-Dichlorophenol	95-77-2	0.5	0.025	
	3,5-Dichlorophenol	591-35-5	0.5	0.025	
	2,3,4-Trichlorophenol	15950-66-0	0.5	0.025	
	2,3,5-Trichlorophenol	933-78-8	0.5	0.025	
	2,3,6-Trichlorophenol	933-75-5	0.5	0.025	
	2,4,5-Trichlorophenol	95-95-4	0.5	0.025	
	2,4,6-Trichlorophenol	88-06-2	0.5	0.025	
	3,4,5-Trichlorophenol	609-19-8	0.5	0.025	
	2,3,4,5-Tetrachlorophenol	4901-51-3	0.5	0.025	
	2,3,4,6-Tetrachlorophenol	58-90-2	0.5	0.025	
	2,3,5,6-Tetrachlorophenol	935-95-5	0.5	0.025	
	Pentachlorophenol (PCP)	87-86-5	0.5	0.025	
2D. Dyes - Azo (Forming Restricted Amines)	4,4`-Methylene-bis-(2-chloro-aniline)	101-14-4	0.1	0.1	EN 14362. Reduction step with Sodiumdithionite, solvent extraction, GC/MS or LC/MS
	4,4'-methylenedianiline	101-77-9	0.1	0.1	
	4,4`-Oxydianiline	101-80-4	0.1	0.1	
	4-Chloroaniline	106-47-8	0.1	0.1	
	3,3`-Dimethoxybenzidine	119-90-4	0.1	0.1	
	3,3`-Dimethylbenzidine	119-93-7	0.1	0.1	
	6-methoxy-m-toluidine (p-Cresidine)	120-71-8	0.1	0.1	
	2,4,5-Trimethylaniline	137-17-7	0.1	0.1	
	4,4`-Thiodianiline	139-65-1	0.1	0.1	
	4-Aminoazobenzene	60-09-3	0.1	0.1	
	4-Methoxy-m-phenylenediamine	615-05-4	0.1	0.1	
	4,4`-Methylene-di-o-toluidine	838-88-0	0.1	0.1	
	2,6-Xylidine	87-62-7	0.1	0.1	
	o-Anisidine	90-04-0	0.1	0.1	
	2-Naphthylamine	91-59-8	0.1	0.1	
	3,3`-Dichlorobenzidine	91-94-1	0.1	0.1	
	4-Aminodiphenyl	92-67-1	0.1	0.1	
	Benzidine	92-87-5	0.1	0.1	
	o-Toluidine	95-53-4	0.1	0.1	
	2,4-Xylidine	95-68-1	0.1	0.1	
	4-Chloro-o-toluidine	95-69-2	0.1	0.1	
	4-Methyl-m-phenylenediamine	95-80-7	0.1	0.1	
	o-Aminoazotoluene	97-56-3	0.1	0.1	
	5-nitro-o-toluidine	99-55-8	0.1	0.1	
2E. Dyes-Carcionogenic or Equivalent Concern	C.I. Direct Black 38	1937-37-7	500	1	Liquid Extraction LC/MS
	C.I. Direct Blue 6	2602-46-2	500	1	
	C.I. Acid Red 26	3761-53-3	500	1	
	C.I. Basic Red 9	569-61-9	500	1	
	C.I. Direct Red 28	573-58-0	500	1	
	C.I. Basic Violet 14	632-99-5	500	1	
	C.I. Disperse Blue 1	2475-45-8	500	1	
	C.I. Disperse Blue 3	2475-46-9	500	1	
	C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5	500	1	
	C.I. Basic Green 4 (malachite green chloride)	569-64-2	500	1	
	C.I. Basic Green 4	2437-29-8	500	1	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	(malachite green oxalate)				
	C.I. Basic Green 4(malachite green)	10309-95-2	500	1	
	Disperse Orange 11	82-28-0	500	1	
2F. Dyes-disperse (sensitizing)	Disperse Yellow 1	119-15-3	50	1	Liquid Extraction LC/MS
	Disperse Blue 102	12222-97-8	50	1	
	Disperse Blue 106	12223-01-7	50	1	
	Disperse Yellow 39	12236-29-2	50	1	
	Disperse Orange 37/59/76	13301-61-6	50	1	
	Disperse Brown 1	23355-64-8	50	1	
	Disperse Orange 1	2581-69-3	50	1	
	Disperse Yellow 3	2832-40-8	50	1	
	Disperse Red 11	2872-48-2	50	1	
	Disperse Red 1	2872-52-8	50	1	
	Disperse Red 17	3179-89-3	50	1	
	Disperse Blue 7	3179-90-6	50	1	
	Disperse Blue 26	3860-63-7	50	1	
	Disperse Yellow 49	54824-37-2	50	1	
	Disperse Blue 35	12222-75-2	50	1	
	Disperse Blue 124	61951-51-7	50	1	
	Disperse Yellow 9	6373-73-5	50	1	
	Disperse Orange 3	730-40-5	50	1	
	Disperse Blue 35	56524-77-7	50	1	
2G. Flame Retardants	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	5	1	ISO 22032, USEPA527 and USEPA8321B. Dichloromethane extraction GC/MS or LC/MS(-MS)
	Decabromodiphenyl ether (DecaBDE)	1163-19-5	5	1	
	Tris(2,3-dibromopropyl) phosphate (TRIS/TDBPP)	126-72-7	5	1	
	Pentabromodiphenyl ether (PentaBDE)	32534-81-9	5	1	
	Octabromodiphenyl ether (OctaBDE)	32536-52-0	5	1	
	Bis(2,3-dibromopropyl) phosphate (BIS/BDBPP)	5412-25-9	5	1	
	Tris(aziridinyl)-phosphineoxide (TEPA)	545-55-1	5	1	
	Polybromobiphenyls (PBBs)	59536-65-1	5	1	
	Tetrabromobisphenol A (TBBPA)	79-94-7	5	1	
	Hexabromocyclododecane (HBCDD)	3194-55-6	5	1	
	2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	5	1	
	Tris(1,3-dichloro-isopropyl) phosphate (TDCP)	13674-87-8	5	1	
	Short chain chlorinated paraffins (SCCPs) (C10-C13)	85535-84-8	5	1	
2H. Glycols	Bis(2-methoxyethyl)-ether	111-96-6	50	5	US EPA 8270 Liquid Extraction LC/MS
	2-ethoxyethanol	110-80-5	50	5	
	2-ethoxyethyl acetate	111-15-9	50	5	
	Ethylene glycol dimethyl	110-71-4	50	5	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	ether				
	2-methoxyethanol	109-86-4	50	5	
	2-methoxyethylacetate	110-49-6	50	5	
	2-methoxypropylacetate	70657-70-4	50	5	
	Triethylene glycol dimethyl ether	112-49-2	50	5	
2I. Halogenated Solvents	1,2-Dichloroethane	107-06-2	1	1	USEPA 8260B Headspace GC/MS or Purgeand-Trap-GC/MS
	Methylene Chloride	75-09-2	1	1	
	Trichloroethylene	79-01-6	1	1	
	Tetrachloroethylene	127-18-4	1	1	
2J. Organotin Compounds	Mono-, di- and tri-methyltin derivatives	Multiple	0.01	0.1	ISO 17353 Derivatisation with NaB(C2H5) GC/MS
	Mono-, di- and tri-butyltin derivatives	Multiple	0.01	0.1	
	Mono-, di- and tri-phenyltin derivatives	Multiple	0.01	0.1	
	Mono-, di- and tri-octyltin derivatives	Multiple	0.01	0.1	
	Monomethyltin	Multiple	0.01	0.1	
	Dimethyltin	Multiple	0.01	0.1	
	Trimethyltin	Multiple	0.01	0.1	
	Monobutyltin	Multiple	0.01	0.1	
	Dibutyltin	Multiple	0.01	0.1	
	Tributyltin	Multiple	0.01	0.1	
	Monophenyltin	Multiple	0.01	0.1	
	Diphenyltin	Multiple	0.01	0.1	
	Triphenyltin	Multiple	0.01	0.1	
	Monooctyltin	Multiple	0.01	0.1	
	Dioctyltin	Multiple	0.01	0.1	
	Trioctyltin	Multiple	0.01	0.1	
2K. Perfluorinated and Polyfluorinated Chemicals (PFCs)	Perfluorooctanesulfonic acid (PFOS)	355-46-4 ,432-50-7	0.01	0.05	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
	Perfluoro-n-octanoic acid (PFOA)	335-67-1	0.01	0.05	
	Perfluorobutanesulfonic acid (PFBS)	29420-49-3, 29420-43-3	0.01	0.05	
	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	0.01	0.05	
	8:2 FTOH	678-39-7	1	0.5	
	6:2 FTOH	647-42-7	1	0.5	
2L. Phthalates (including all other esthers of phthalic acid)	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	10	1	US EPA 8270D, ISO 18856 Dichloromethane extraction GC/MS
	Dimethoxyethyl phthalate (DMEP)	117-82-8	10	1	
	Di-n-octyl phthalate (DNOP)	117-84-0	10	1	
	Di-iso-decyl phthalate (DIDP)	26761-40-0	10	1	
	Di-iso-nonyl phthalate (DINP)	28553-12-0	10	1	
	Di-n-hexyl phthalate (DnHP)	84-75-3	10	1	
	Dibutyl phthalate (DBP)	84-74-2	10	1	
	Butyl benzyl phthalate (BBP)	85-68-7	10	1	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg)/(ppm)	
	Dinonyl phthalate (DNP)	84-76-4	10	1	
	Diethyl phthalate (DEP)	84-66-2	10	1	
	Di-n-propyl phthalate (DPRP)	131-16-8	10	1	
	Di-iso-butyl phthalate (DIBP)	84-69-5	10	1	
	Di-cyclohexyl phthalate (DCHP)	84-61-7	10	1	
	Di-iso-octyl phthalate (DIOP)	27554-26-3	10	1	
	1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4	10	1	
	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	10	1	
2M. Poly Aromatic Hydrocarbons (PaHs)	Benzo[a]pyrene (BaP)	50-32-8	1	1	DIN 38407-39 Solvent extraction GC/MS
	Anthracene	120-12-7	1	1	
	Pyrene	129-00-0	1	1	
	Benzo[ghi]perylene	191-24-2	1	1	
	Benzo[e]pyrene	192-97-2	1	1	
	Indeno[1,2,3-cd]pyrene	193-39-5	1	1	
	Benzo[j]fluoranthene	205-82-3	1	1	
	Benzo[b]fluoranthene	205-99-2	1	1	
	Fluoranthene	206-44-0	1	1	
	Benzo[k]fluoranthene	207-08-9	1	1	
	Acenaphthylene	208-96-8	1	1	
	Chrysene	218-01-9	1	1	
	Dibenz[a,h]anthracene	53-70-3	1	1	
	Benzo[a]anthracene	56-55-3	1	1	
	Acenaphthene	83-32-9	1	1	
	Phenanthrene	85-01-8	1	1	
	Fluorene	86-73-7	1	1	
	Naphthalene	91-20-3	1	1	
2N. Volatile Organic Compound (VOCs)	Benzene	71-43-2	1	0.1	ISO 11423-1 Headspace- or Purge-and-Trap-GC/MS
	Xylene	1330-20-7	1	0.1	
	o-cresol	95-48-7	1	0.1	
	p-cresol	106-44-5	1	0.1	
	m-cresol	108-39-4	1	0.1	
1A. Conventional Parameters	Temperature	—	N/A	N/A	Apply the standard methods that best apply to the region (ISO, EU, US, China), please refer to ZDHC Wastewater Guidelines for more details on the testing method and the levels (Foundational, Progressive, and Aspirational). Cyanide: With
	TSS	—	N/A	N/A	
	COD	—	N/A	N/A	
	Total-N	—	N/A	N/A	
	pH	—	N/A	N/A	
	Color [m^{-1}] (436nm; 525nm; 620nm)	—	N/A	N/A	
	BOD5	—	N/A	N/A	
	Ammonium-N	—	N/A	N/A	
	Total-P	—	N/A	N/A	
	AoX	—	N/A	N/A	
	Oil and Grease	—	N/A	N/A	
	Phenol	—	N/A	N/A	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (ug/L)/(ppb)	Sludge (mg/kg) /(ppm)	
	Coliform(bacteria/100ml)	—	N/A	N/A	reference to APHA 4500 CN—B,C&E and followed by UV analysis
	Persistent Foam	—	Not visible	Not visible	
	Substance (Testing parameter)	CAS No.	Wastewater (mg/L) / (ppm)	Wastewater (mg/kg) / (ppm)	
	ANIONS				
	Cyanide(CN-)	Various (incl. 57-12-5)	0.02	0.5	
	Sulfide	—	N/A	N/A	
	Sulfite	—	N/A	N/A	

Group	Substance (Testing parameter)	CAS No.	Report Limit		Name of the testing method
			Wastewater (mg/L) / (ppm)	Wastewater (mg/kg) / (ppm)	
1B. Conventional Parameters - **METALS**	Antimony(Sb)	7440-36-0	0.001	N/A	Various Acid Digestion with ICP analysis pleasterefer to ZDHC Wastewater Guidelines for more details on the testing method and the levels (Foundational, Progressive, and Aspirational). Cr(VI): Various Solvent extraction and derivatisation followed by UV analysis
	Chromium(Cr), total	7440-47-3	0.001	N/A	
	Cobalt(Co)	7440-48-4	0.001	N/A	
	Copper(Cu)	7440-50-8	0.001	N/A	
	Nickel (Ni)	7440-02-0	0.001	N/A	
	Silver (Ag)	7440-22-4	0.001	N/A	
	Zinc(Zn)	7440-66-6	0.001	N/A	
	Arsenic (As)	7440-38-2	0.001	1	
	Cadmium(Cd)	7440-43-9	0.0001	1	
	Chromium VI(CrVI)	18540-29-9	0.001	1	
	Lead(Pb)	7439-92-1	0.001	1	
	Mercury (Hg)	7439-97-6	0.00005	0.1	

Note / Key :

ppm = part(s) per million; ppb = part(s) per billion
U. S. EPA = United States Environmental Protection Agency
APHA = American Public Health Association

APPENDIX C

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (INDIVIDUAL SAMPLING)	CPSD-AN-00613-DATA 04
	Issue Date: November 20, 2
	Version No.: 9
	Business Line: Analytic

General Data

Laboratory Sample Number	
Client Name	Artcolor srl
Field Contact Person	Guido Nesti Phone No:0039 0574982106
Project (Facility Name and Address)	Via Bologna 288, Camagaio 59025 Prato
Sampling Location / Description	INCOMING WATER
Sample Identification	Zero discharge with sampling plan
Sample Type	Grab sample
Name of Sampler	Caterina Celiai 8F146509949
Discharge mode	Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant
Date of collection	
Factory Type	Dyeing/Printing/Washing/Finishing/Other (please specify)

*Note: It would be selected more than one

Field Data for wastewater

Arrival Time:		Departure Time:			
Field Parameters	pH : 7,15	Temp : 7,4 °C	Color : Yellowish		
Control No. of field equipment					

Analysis Required and Preservation Method

Factory with effluent treatment plant	Yes	No
Sample matrix	× Incoming water	
	Wastewater before treatment	
	Wastewater after treatment – water at discharge point	
Sampler container number		
Recording time ID		
Recording time Time	12.43	
Volume collected, mL	500	
Total volume collected	1 0 L	Remark: Total volume collected must be greater than total of sample size required

Tests (MRSL Parameters)	Test required (√)	Total of sample size	Type of container	Preservation method
1. Phthalate	√	500 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
2. Brominated and chlorinated Flame retardant	√	1000 mL		
3. Chlorobenzenes, Chlorotoluene & Polynuclear aromatic hydrocarbons (PAHs)	√	1000 mL		
4. Chlorophenols & Cresols	√	100 mL		
5. SCCPs	√	1000 mL		
6. Flame retardant	√	500 mL		
7. APS	√	1000mL		
8. Chlorinated solvent / Volatile organic compounds (VOCs)	√	10 mL		Fill to full container without air gap; acidify to ~pH 2 with HCl and store sample at 4°C
9. Organotin Compounds	√	500 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
10. Dyes	√	10 mL		
11. Glycol	√	60 mL		
12. *Pesticides		1000 mL		Adjust to pH 6-8 with acetic acid and NaOH Store sample at 4°C
13. *Nitrosamine		10 mL		
14. Banded Azodyes	√	2000 mL		
15. *Free primary aromatic amines		500mL		
16. APEOs	√	100mL		Adjust to pH 7 with HCl and NaOH Store sample at 4°C
17. PFCs	√	1 mL	PE, wash with pesticide grade Acetone;	Adjust to pH 6-8 with HCl and NaOH Store sample at 4°C
18. FTAs and FTOHs	√	1 mL		Without adding acid Store sample at 4°C

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (INDIVIDUAL SAMPLING)

CPSD-AN-00613-DATA 04
Issue Date: November 20, 2
Version No.: 9
Business Line: Analytic

Tests (Conventional Parameters)	Test required (√)	Total of sample size	Type of container	Preservation method
19. Heavy Metals except Cr(VI)	√	9 mL	PE, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Acidify to pH 2 with HNO3 and store at 4oC
20. CrVI	√	95 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air gap nor acid add and store sample at 4°C *Check pH initially. If pH <7 or pH >9, adjust pH to 8.0 – 8.5. Otherwise, no pH adjustment is required.
21. Cyanide	√	500 mL		Adjust pH 12 with 50% NaOH and store sample at 4°C
22. Chemical oxygen demand (COD)		100 mL	Amber Glass;wash with nitric acid; *Pre-add 6.5 mL of 2M H2SO4*	Fill to full bottle without any air gap; acidify to ~pH 2 with H2SO4 Store sample at 4°C
23. Total suspened solids (TSS)		500 mL	Amber Glass,wash with nitric acid, rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
24. 5-day Biochemical Oxygen Demand (BOD5)		1000 mL		
25. Total dissolved solids (TDS)		500 mL		
26. Adsorbable organically bound halogens (AOX)		100 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Fill to full bottle without any air gap; acidify to ~pH 2 with HNO3 Store sample at 4°C
Observation/ Remark:				

*Remarks:
1.2016 ZDCH guideline test parameters can be allowed to perform individual sampling upon request
2. The minimum sampling time for 2016 ZDCH guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
3. Free primary aromatic amine, pesticides and nitrosamine are not in the scope of ZDCH Guidline 2016, they are tested upon request.

Recorded by: _____ Date: 4/3/22
Full name:

Comment from factory

Acknowledgement by factory
I hereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in designated container(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-4°C

Signatory of Factory Representative: GIULIO FANCIULLACCI Date: 04/03/2022
Full Name:

FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE SAMPLING)	CPSD-AN-00613-DATA 05
	Issue Date: November 20, 2018
	Version No.: 8
	Business Line: Analytical

General Data

Laboratory Sample Number	
Client Name	Artcolor srl
Field Contact Person	Guido Nesti Phone No:0039 0574582106
Project (Facility Name and Address)	Via Bologna 288, Cantagallo 59025 Prato
Sampling Location / Description	raw waste waters (before treatment)
Sample Identification	Zero discharge with sampling plan
Sample Type	Composite sample
Name of Sampler	Caterina Cellai 8F145509949
Discharge mode	Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant
Date of collection	4/03/22
Factory Type	Dyeing/ Printing/ Washing/ Finishing/ Other (please specify) _____
	*Note: It would be selected more than one

Field Data for wastewater

Arrival Time:				Departure Time:				
Factory with effluent treatment plant	Yes			No				
Sample matrix		Incoming water						
	×	Wastewater before treatment						
		Wastewater after treatment – water at discharge point						
Field Parameters	1	2	3	4	5	6	7	8
Recording time	10,30	11,30	12,30	13,30	14,30	15,30		
pH :	6,63	6,65	6,41	6,27	6,12	6,07		
Temp (°C) :	23,6	23,3	23,0	23,6	23,6	23,2		
Color :	Rosso 59	Rosso 59	Rosso 59	Rosso 59	Rosso 59	Rosso 59		
Sample container number	Tramoggia	Tramoggia	Tramoggia	Tramoggia	Tramoggia	Tramoggia		
Volume collected, mL	160	160	160	160	160	160		
Total volume collected	2 L	Remark: Total volume collected must be greater than total of sample size required						

Analysis Required and Preservation Method

Tests (MRSL Parameters)	Test required (√)	Total of sample size	Type of container	Preservation method
1. Phthalate	√	500 mL	Amber Glass, wash with nitric acid; Pre-add 6.5 mL of 2M HCl	Acidify to ~pH 2 with HCl and store sample at 4°C
2. Brominated and chlorinated Flame retardant	√	1000 mL		
3. Chlorobenzenes, Chlorotoluene & Polynuclear aromatic hydrocarbons (PAHs)	√	1000 mL		
4. Chlorophenols & Cresols	√	100 mL		
5. SCCPs	√	1000 mL		
6. Flame retardant	√	500 mL		
7. APS	√	1000mL		
8. Chlorinated solvent / Volatile organic compounds (VOCs)	√	10 mL		Fill to full container without air gap; acidify to ~pH 2 with HCl and store sample at 4°C
9. Organotin Compounds	√	500 mL	Amber Glass,wash with nitric acid, rinse thoroughly with	Without adding acid Store sample at 4°C
10. Dyes	√	10 mL		
11. Glycol	√	50 mL		
12. *Pesticides		1000 mL		

13. *Nitrosamine		10 mL	distilled water and dry before use	
14. Banded Azodyes	√	2000 mL		Adjust to pH 6-8 with acetic acid and NaOH Store sample at 4°C
15. *Free primary aromatic amines		500mL		
16. APEOs	√	100mL		Adjust to pH 7 with HCl and NaOH Store sample at 4°C
17. PFCs	√	1 mL	PE, wash with pesticide grade Acetone;	Adjust to pH 6-8 with HCl and NaOH Store sample at 4°C
18. FTAs and FTOHs	√	1 mL		Without adding acid Store sample at 4°C

Tests (Conventional Parameters)	Test required (√)	Total of sample size	Type of container	Preservation method
19. Heavy Metals except Cr(VI)	√	9 mL	PE, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Acidify to pH 2 with HNO3 and store at 4oC
20. CrVI	√	95 mL	Amber Glass, wash with pesticide grade acetone	Fill to full bottle without air gap nor acid add and store sample at 4°C *Check pH initially. If pH <7 or pH >9, adjust pH to 8.0 – 8.5. Otherwise, no pH adjustment is required.
21. Cyanide	√	500 mL		Adjust pH 12 with 50% NaOH and store sample at 4°C
22. Chemical oxygen demand (COD)		100 mL	Amber Glass;wash with nitric acid; Pre-add 6.5 mL of 2M H2SO4	Fill to full bottle without any air gap; acidify to ~pH 2 with H2SO4 Store sample at 4°C
23. Total suspened solids (TSS)		500 mL	Amber Glass,wash with nitric acid; rinse thoroughly with distillated water and dry before use	Without adding acid Store sample at 4°C
24. 5-day Biochemical Oxygen Demand (BOD5)		1000 mL		
25. Total dissolved solids (TDS)		500 mL		
26. Adsorbable organically bound halogens (AOX)		100 mL	Amber Glass, wash with nitric acid, pre-add 6.5mL of 2M HNO3	Fill to full bottle without any air gap; acidify to ~pH 2 with HNO3 Store sample at 4°C
Observation/ Remark:				

*Remarks:
1. The minimum sampling time for 2016 ZDCH guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.
2. Free primary aromatic amine, pesticides and nitrosamine are not in the scope of ZDCH Guidline 2016, they are tested upon request.

Comment from factory

Recorded by: Chieh Ching Date: 6/3/22
Full name:

Acknowledgement by factory

I hereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in desinated container(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-4°C

Signatory of Factory Representative: GIULIO FANCIULLACCI Date: 06/03/22
Full name:

Field Data for Sludge

Field Parameters	pH :	Temp : °C	Color :
Control No. of field equipment			

Analysis Required and Preservation Method

Factory with effluent treatment plant	Yes	No
Sample matrix	Sludge in clarifier (sedimentation tank)	

APPENDIX D – Limitation Value of Legal Requirements

Tabella dei valori limiti di emissione in fognatura
(estratta da Tabella dell'Allegato 1 della delibera del C.d.A. della G.I.D.A. SpA del 18/04/2001)

Numero parametro	Parametro	Unità di misura	Scarico in rete fognaria
1	PH		4,5 - 9,5 (il valore istantaneo non deve essere minore di 4)
2	Temperatura	°C	-
3	Colore		-
4	Odore		-
5	materiali grossolani		assenti
6	Solidi sospesi totali	mg/L	≤ 1200
7	BOD_5 (come O_2)	mg/L	≤ 600
8	COD (come O_2)	mg/L	≤ 3000
9	Alluminio	mg/L	≤ 2,0
10	Arsenico	mg/L	≤ 0,5
11	Bario	mg/L	-
12	Boro	mg/L	≤ 4
13	Cadmio	mg/L	≤ 0,02
14	Cromo totale	mg/L	≤ 4
15	Cromo VI	mg/L	≤ 0,20
16	Ferro	mg/L	≤ 4
17	Manganese	mg/L	≤ 4
18	Mercurio	mg/L	≤ 0,005
19	Nichel	mg/L	≤ 4
20	Piombo	mg/L	≤ 0,3
21	Rame	mg/L	≤ 1,0
22	Selenio	mg/L	≤ 0,03
23	Stagno	mg/L	-
24	Zinco	mg/L	≤ 2,0
25	Cianuri totali (come CN)	mg/L	≤ 1,0
26	Cloro attivo libero	mg/L	≤ 5,0
27	Solfuri (come S)	mg/L	≤ 60
28	Solfiti (come SO_3)	mg/L	≤ 60
29	Solfati (come SO_4)	mg/L	≤ 3000
30	Cloruri	mg/L	≤ 5000
31	Fluoruri	mg/L	≤ 12
32	Fosforo totale (come P)	mg/L	≤ 20
33	Azoto ammoniacale (come NH_4)	mg/L	≤ 100
34	Azoto nitroso (come N)	mg/L	≤ 1,2
35	Azoto nitrico (come N)	mg/L	≤ 45
36	Grassi e olii animali/vegetali	mg/L	≤ 150
37	Idrocarburi totali	mg/L	≤ 200
38	Fenoli	mg/L	≤ 1
39	Aldeidi	mg/L	≤ 2
40	Solventi organici aromatici	mg/L	≤ 0,4
41	Solventi organici azotati	mg/L	≤ 0,2
42	Tensioattivi totali	mg/L	≤ 300
43	Pesticidi fosforati	mg/L	≤ 0,10
44	Pesticidi totali (esclusi i fosforati) tra cui:	mg/L	≤ 0,05
45	aldrin	mg/L	≤ 0,01
46	dieldrin	mg/L	≤ 0,01
47	endrin	mg/L	≤ 0,002
48	isodrin	mg/L	≤ 0,002
49	Solventi clorurati	mg/L	≤ 2