Test Report No.: 178205132a 001

Client: **SHANDONG HENGTAI TEXTILE CO. LTD.**

West of Tengfei Road, Economic Development Zone, Yishui County, Linyi City, Shandong, P.R. China

Factory Details

Factory Name	:	Shandong hengtai textile co. LTD.
Factory Address (with geographical coordinates)	:	West of Tengfei Road, Economic Development Zone, Yishui County, Linyi City, Shandong, P.R. China
On-site ETP	:	Y
Discharge Type of Wastewater	:	Indirect discharge
Destination of Wastewater	:	Linyi Runze Water co.,LTD

For Indirect discharge

Name of public wastewater treatment plants(CETP)	:	Linyi Runze Water co.,LTD
Address of public wastewater treatment plants(CETP)	:	HuBu Xi Cun, Yi shui, Linyi City

Sampling Details

Sampling Date	:	2024-09-10
Sample Receiving Date	:	2024-09-12
Testing Period	:	2024-09-12 - 2024-09-27
Parameter(s) exceeded maximum holding time	:	Yes(ph Value, Fecal Coliform)

Sampling Method:

Sample Type	Total Volume	1	2	3	4	5	6	7
Discharged Wastewater	1.22L	09:50	10:50	11:50	12:50	13:50	14:50	15:50
Raw Wastewater	15.24L	10:02	11:10	12:05	13:07	14:06	15:03	16:05
Incoming Water	4.96L	09:30	-	-	-	-	-	-
Sludge	5.5L	12:30	-	-	-	-	-	-

Overall Rating	**Discharged Wastewater**	**Raw Wastewater**	**Sludge**
Conventional Parameters / Anion / Metals	Fulfill Aspirational Limit	Not Tested	Report Only
MRSL Parameters	Not Tested	Not Comply	Report Only
Legal Compliance	Not Tested	Not Tested	Not Tested
Specifications	ZDHC Wastewater Guidelines Version 2.1 (November 2022)		

For and on behalf of
TÜV Rheinland/CCIC (Qingdao) Co., Ltd.

2024-09-29 Echo Xu / Department Manager

Date *Name/Position*

Test Report No.: 178205132a 001

Result Summary :

Conventional Parameters	Incoming Water	Discharged Wastewater	Raw Wastewater	Sludge
pH Value^	-	-	-	Report Only
Anion - Cyanide^	-	-	-	Report Only
Heavy Metals^	-	Aspirational	-	Report Only
Leachate Heavy Metals^	-	-	-	Report Only
%Solid^	-	-	-	Report Only
Paint Filter Test^	-	-	-	Report Only
Fecal Coliform^	-	-	-	Report Only
Manufacturing Restricted Substances List (MRSL)	**Incoming Water**	**Discharged Wastewater**	**Raw Wastewater**	**Sludge**
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs)^	-	-	Comply	Report Only
Anti-Microbials & Biocides^	-	-	Comply	-
Chlorinated Paraffins^	-	-	Comply	-
Chlorobenzenes and Chlorotoluenes^	-	-	Comply	Report Only
Chlorophenols^	-	-	Comply	-
Dyes – Carcinogenic or Equivalent Concern^	-	-	Comply	-
Dyes – Disperse (Sensitizing)^	-	-	Comply	-
Dyes – Navy Blue Colorant^	-	-	Comply	-
Flame Retardants^	-	-	Not Comply	-
Glycols/ Glycol Ethers^	-	-	Comply	-
Halogenated Solvents^	-	-	Comply	-
Organotin Compounds^	-	-	Comply	-
Other / Miscellaneous Chemicals^	-	-	Not Comply	-
Perfluorinated and Polyfluorinated Chemicals (PFCs)^	-	-	Comply	-
Phthalates - Including all other esters of phthalic acid^	-	-	Not Comply	-
Polycyclic Aromatic Hydrocarbons (PAHs)^	-	-	Comply	Report Only
Restricted Aromatic Amines(Cleavable from Azo)^	-	-	Comply	-
UV Absorbers^	-	-	Comply	-
Volatile Organic Compounds (VOC)^	-	-	Comply	-
Dimethyl Formamide (DMFa)	-	-	Comply	-

Note: Aspirational = Fulfill Aspirational Limit
Foundational = Fulfill Foundational Limit
Comply = Comply with ZDHC Limit
- = Not Tested
Progressive = Fulfill Progressive Limit
Exceed = Exceed Foundational Limit
Not Comply = Not Comply with ZDHC Limit

Material List:

Field ID	Sample Type	Sample Description
D001	Waste water	Discharge Wastewater*
R001	Waste water	Raw Wastewater*
S001	Sludge	Sludge*(Type A)

Notes:

*** Discharge Wastewater:** Wastewater that is released from a supplier, either directly to the environment (including but not limited to: water bodies, land application/irrigation), or to a wastewater treatment system beyond the supplier's property boundaries.

*** Direct Discharge:** A point source that discharges wastewater to stream, lakes, oceans, or other receiving bodies. Distribution of wastewater onto land is also considered a type of direct discharge. Municipal bodies and suppliers that introduce pollution through a defined conveyance or system such as outlet pipes are direct dischargers.

*** Indirect Discharge:** The discharge of wastewater through a sanitary or industrial wastewater sewer system to a central or common effluent treatment plant (CETP) not owned and/ or operated by the supplier discharging the pollutants.

*** Raw Wastewater: (Untreated Wastewater)** Wastewater that has not yet been treated prior to direct or indirect discharge, or recycling efforts. This wastewater therefore does not meet the quality standards for beneficial use.

*** Sludge:** The solid or semi-solid material separated during the wastewater treatment process, including septic and Zero Liquid Discharge (ZLD) systems.

*** Incoming Water:** Water that is supplied to a manufacturing process, usually withdrawn from surface water bodies, groundwater, collected from rainfall, supplied by municipalities, etc.

Type A: Offsite Incineration at > 1000°C.

Type B: Landfill with Significant Control Measures.

Type C: Building Products Processed at > 1000°C.

Type D: Landfill with Limited Control Measures.

Type E Offsite Incineration and Building Products Processed at < 1000°C.

Type F: Landfill with No Control Measures.

Type G: Land Application.

1.pH Value^

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
pH Value	PH	HJ 962	NONE	NA	6.72
Conclusion					Report Only

Abbreviation: NA = Not Applicable

Remark:

The limits according to ZDHC limit (Table 3 & 4C of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	**ZDHC Wastewater Limit**		
	Foundational	**Progressive**	**Aspirational**
pH Value	6-9		

Parameter	**ZDHC Sludge Limit**						
Sludge Type	A	B	C	D	E	F	G
pH Value	Report Only	Report Only	5-11	5-11	5-11	6.5-9	6.5-9

2.Anion - Cyanide^

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Anion - Cyanide	57-12-5	HJ 745	mg/kg	10	< RL
Conclusion					Report Only

Abbreviation: < =less than
RL =reporting limit
mg/L = milligram per liter
mg/kg = milligram per kilogram

Remark:

The limits according to ZDHC limit (Table 3 & 4A & 4D of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	**ZDHC Limit for Wastewater (mg/L)**		
	Foundational	**Progressive**	**Aspirational**
Anion - Cyanide	0.2	0.1	0.05

Parameter	**ZDHC Sludge Limit (mg/kg)**						
Sludge Type	A	B	C	D	E	F	G
Anion - Cyanide	Sample and Report only		100	85	70	70	70

3.Heavy Metals^

				Sample No.	D001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Arsenic (As)	Arsenic	US EPA 6020a	mg/L	0.001	< RL
Cadmium (Cd)	Cadmium	US EPA 6020a	mg/L	0.001	< RL
Chromium (Cr VI)	Chromium VI	GB 7467	mg/L	0.001	< RL
Lead (Pb)	Lead	US EPA 6020a	mg/L	0.001	< RL
Mercury (Hg)	Mercury	ISO 17294-2	mg/L	0.001	< RL
Conclusion					Fulfill Aspirational Limit

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Antimony (Sb)	Antimony	HJ 803	mg/kg	5	146
Chromium (Cr, total)	Chromium Total	HJ 803	mg/kg	50	55
Cobalt (Co)	Cobalt	US EPA 7196	mg/kg	400	< RL
Copper (Cu)	Copper	HJ 803	mg/kg	50	363
Nickel (Ni)	Nickel	HJ 803	mg/kg	20	< RL
Silver (Ag)	Silver	US EPA 6020b	mg/kg	50	< RL
Zinc (Zn)	Zinc	HJ 803	mg/kg	400	9210
Arsenic (As)	Arsenic	HJ 803	mg/kg	5	9
Cadmium (Cd)	Cadmium	HJ 803	mg/kg	1	< RL
Chromium (Cr VI)	Chromium VI	US EPA 7196	mg/kg	20	< RL
Lead (Pb)	Lead	HJ 803	mg/kg	5	7
Mercury (Hg)	Mercury	US EPA 6020b	mg/kg	1	< RL
Barium (Ba)	Barium	US EPA 6020b	mg/kg	200	< RL
Selenium (Se)	Selenium	US EPA 6020b	mg/kg	5	< RL
Conclusion					Report Only

Abbreviation: < =less than
RL =reporting limit
mg/L = milligram per liter
mg/kg = milligram per kilogram

Remark:

The limits according to ZDHC limit (Table 2 & 4A & 4B of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	ZDHC Limit for Wastewater (mg/L)			ZDHC Limit for Sludge (mg/kg)		
	Foundational	Progressive	Aspirational	Disposal pathway A-F	Disposal pathway G	Total Metals Threshold Values**
Antimony (Sb)	0.1	0.05	0.01	Report only	Sample and report only	12
Chromium (Cr, total)	0.2	0.1	0.05		3000	100
Cobalt (Co)	0.05	0.02	0.01		Sample and report only	1600
Copper (Cu)	1	0.5	0.25		4300	200
Nickel (Ni)	0.2	0.1	0.05		420	70
Silver (Ag)	0.1	0.05	0.005		Sample and report only	100
Zinc (Zn)	5.0	1.0	0.5		7500	1000
Arsenic (As)	0.05	0.01	0.005		75	10
Cadmium (Cd)	0.1	0.05	0.01		85	3
Chromium (Cr VI)	0.05	0.005	0.001		50	50
Lead (Pb)	0.1	0.05	0.01		840	10
Mercury (Hg)	0.01	0.005	0.001		57	1
Barium (Ba)	Sample and report only				Sample and report only	700
Selenium (Se)	Sample and report only				100	10
Tin (Sn)	Sample and report only				NA	NA

* For polyester wet processing facilities Foundational, Progressive and Aspirational limits do not yet apply (unless required by law or voluntarily adopted).

** if the Total Metals for Sludge exceeded the Total Metals Threshold Values (mg/kg) given in this table, proceed with Leachate Heavy Metal.

4.Leachate Heavy Metals^

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Antimony (Sb)	Antimony	US EPA 1311, US EPA 3051A, US EPA 200.8	mg/L	0.5	0.9
Copper (Cu)	Copper	US EPA 1311, US EPA 3051A, US EPA 200.8	mg/L	1	< RL
Zinc (Zn)	Zinc	US EPA 1311, US EPA 3051A, US EPA 200.8	mg/L	10	264
Conclusion					Report Only

Abbreviation: < = less than
RL = reporting limit
mg/L = milligram per liter

Remark:

The limits according to ZDHC limit (Table 4B of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	**ZDHC Sludge Limit (mg/L)**						
Sludge Type	A	B	C	D	E	F	G
Arsenic (As)	Report Only if Required to Test		5	2.75	0.5	0.5	0.5
Cadmium (Cd)			1	0.58	0.15	0.15	0.15
Chromium (Cr, total)			15	10	5	5	5
Lead (Pb)			5	2.75	0.5	0.5	0.5
Antimony (Sb)			15	7.8	0.6	0.6	0.6
Barium (Ba)			100	67.5	35	35	35
Cobalt (Co)			80	80	80	80	80
Copper (Cu)			25	17.5	10	10	10
Nickel (Ni)			20	11.75	3.5	3.5	3.5
Selenium (Se)			1	0.75	0.5	0.5	0.5
Silver (Ag)			5	5	5	5	5
Zinc (Zn)			250	150	50	50	50
Chromium (Cr VI)			5	3.75	2.5	2.5	2.5
Mercury (Hg)			0.2	0.125	0.05	0.05	0.05

5.%Solids^

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
%Solids	%Solids	HJ 613 at 105°C	%	NA	11.5
Conclusion					Report Only

Abbreviation: % = percentage
NA = Not Applicable

Remark:

The limits according to ZDHC limit (Table 4C of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	**ZDHC Sludge Limit**						
Sludge Type	A	B	C	D	E	F	G
%Solids	Sample and Report Only						

6.Paint Filter Test^

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Paint Filter Test	Free Liquid	EPA 9095B	NA	NA	Not visible
Conclusion					Report Only

Abbreviation: NA = Not Applicable

Remark:

The limits according to ZDHC limit (Table 4C of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	**ZDHC Sludge Limit**						
Sludge Type	A	B	C	D	E	F	G
Paint Filter Test	Sample and Report Only			Pass Paint Filter Test			Sample and Report Only

7.Fecal Coliform^

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Fecal Coliform	Fecal Coliform	EPA 1681	MPN/g	10	$1.2*10^2$
Conclusion					Report Only

Abbreviation: MPN/g = Most Probable Number per gram

Remark:

The limits according to ZDHC limit (Table 4C of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	**ZDHC Sludge Limit (MPN/g)**						
Sludge Type	A	B	C	D	E	F	G
Fecal Coliform	Sample and Report Only					1000	1000

8.Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): Including All Isomers^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Nonylphenol (NP), mixed isomers	104-40-5 25154-52-3 11066-49-2 84852-15-3	ISO 18857-2	µg/L	5	5	< RL
Octylphenol (OP), mixed isomers	140-66-9 1806-26-4 27193-28-8	ISO 18857-2	µg/L	5	5	< RL
Nonylphenol ethoxylates (NPEO)	9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	ISO 18254-1, ASTM D7065	µg/L	5	5	< RL
Octylphenol ethoxylates (OPEO)	9002-93-1 9036-19-5 68987-90-6	ISO 18254-1, ASTM D7065	µg/L	5	5	< RL
Conclusion						Comply

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Nonylphenol (NP), mixed isomers	104-40-5 25154-52-3 11066-49-2 84852-15-3	ISO 18857-2	mg/kg	0.2	< RL
Octylphenol (OP), mixed isomers	140-66-9 1806-26-4 27193-28-8	ISO 18857-2	mg/kg	0.2	< RL
Nonylphenol ethoxylates (NPEO)	9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	ISO 18254-1, ASTM D7065	mg/kg	0.2	< RL
Octylphenol ethoxylates (OPEO)	9002-93-1 9036-19-5 68987-90-6	ISO 18254-1, ASTM D7065	mg/kg	0.2	< RL
Conclusion					Report Only

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter
mg/kg = milligram per kilogram

Remark:

The limits according to ZDHC limit (Table 4C of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	**ZDHC Sludge Limit (mg/kg)**						
Sludge Type	**A**	**B**	**C**	**D**	**E**	**F**	**G**
AP & APEOs	Sample and Report Only			0.4	0.4	0.4	0.4

9.Anti-Microbials & Biocides^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
o-Phenylphenol (+Salts)	90-43-7	MS_0023187_en 2020 -09 modified	µg/L	100	100	< RL
Triclosan	3380-34-5	US EPA 8270E	µg/L	100	100	< RL
Permethrin	Multiple	US EPA 8270E	µg/L	500	500	< RL
Conclusion						Comply

Abbreviation: < = less than
RL =reporting limit
µg/L = microgram per liter

10.Chlorinated Paraffins^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Medium-chain Chlorinated paraffins (MCCPs) (C14-C17)	85535-85-9	US EPA 3510, ISO 18219-2	µg/L	5	500	< RL
Short-chain Chlorinated paraffins (SCCPs) (C10-C13)	85535-84-8	US EPA 3510, ISO 18219-1	µg/L	5	25	< RL
Conclusion						Comply

Abbreviation: < = less than
RL =reporting limit
µg/L = microgram per liter

11.Chlorobenzenes and Chlorotoluenes^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
1,2-Dichlorobenzene	95-50-1	GB/T 20384-2006 modified	µg/L	0.2	0.2	< RL
Other isomers of mono, di-, tri-, tetra-, penta- and hexa- Chlorobenzene and mono, di- tri-, tetra- and penta-Chlorotoluene	Multiple	GB/T 20384-2006 modified	µg/L	0.2	0.2	< RL
Conclusion						Comply

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
mono, di- tri-, tetra- and penta-Chlorotoluene	Multiple	HJ 605	mg/kg	0.1	< RL
Conclusion					Report Only

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter
mg/kg = milligram per kilogram

Remark:

The limits according to ZDHC limit (Table 4C of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	**ZDHC Sludge Limit (mg/kg)**						
Sludge Type	A	B	C	D	E	F	G
mono, di- tri-, tetra- and penta-Chlorotoluene	Sample and Report only			0.2	0.2	0.2	0.2

12.Chlorophenols^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
2-Chlorophenol	95-57-8	US EPA 8270E	µg/L	0.5	0.5	< RL
3-chlorophenol	108-43-0	US EPA 8270E	µg/L	0.5	0.5	< RL
4-chlorophenol	106-48-9	US EPA 8270E	µg/L	0.5	0.5	< RL
2,3-Dichlorophenol	576-24-9	US EPA 8270E	µg/L	0.5	0.5	< RL
2,4-Dichlorophenol	120-83-2	US EPA 8270E	µg/L	0.5	0.5	< RL
2,5-Dichlorophenol	583-78-8	US EPA 8270E	µg/L	0.5	0.5	< RL
2,6-Dichlorophenol	87-65-0	US EPA 8270E	µg/L	0.5	0.5	< RL
3,4-Dichlorophenol	95-77-2	US EPA 8270E	µg/L	0.5	0.5	< RL
3,5- Dichlorophenol	591-35-5	US EPA 8270E	µg/L	0.5	0.5	< RL
2,3,4-Trichlorophenol	15950-66-0	US EPA 8270E	µg/L	0.5	0.5	< RL
2,3,5-Trichlorophenol	933-78-8	US EPA 8270E	µg/L	0.5	0.5	< RL
2,3,6-Trichlorophenol	933-75-5	US EPA 8270E	µg/L	0.5	0.5	< RL
2,4,5-Trichlorophenol	95-95-4	US EPA 8270E	µg/L	0.5	0.5	< RL
2,4,6-Trichlorophenol	88-06-2	US EPA 8270E	µg/L	0.5	0.5	< RL
3,4,5-Trichlorophenol	609-19-8	US EPA 8270E	µg/L	0.5	0.5	< RL
2,3,4,5-Tetrachlorophenol	4901-51-3	US EPA 8270E	µg/L	0.5	0.5	< RL
2,3,4,6-Tetrachlorophenol	58-90-2	US EPA 8270E	µg/L	0.5	0.5	< RL
2,3,5,6-Tetrachlorophenol	935-95-5	US EPA 8270E	µg/L	0.5	0.5	< RL
Pentachlorophenol	87-86-5	US EPA 8270E	µg/L	0.5	0.5	< RL
Conclusion						Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

13.Dyes - Carcinogenic or Equivalent Concern^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
C.I. Direct Black 38	1937-37-7	ISO 16373	µg/L	500	500	< RL
C.I. Direct Blue 6	2602-46-2	ISO 16373	µg/L	500	500	< RL
C.I. Acid Red 26	3761-53-3	ISO 16373	µg/L	500	500	< RL
C.I. Basic Red 9	569-61-9	ISO 16373	µg/L	500	500	< RL
C.I. Direct Red 28	573-58-0	ISO 16373	µg/L	500	500	< RL
C.I. Basic Violet 14	632-99-5	ISO 16373	µg/L	500	500	< RL
C.I. Disperse Blue 1	2475-45-8	ISO 16373	µg/L	500	500	< RL
C.I. Disperse Blue 3	2475-46-9	ISO 16373	µg/L	500	500	< RL
C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5	ISO 16373	µg/L	500	500	< RL
C.I Basic Green 4 (malachite green chloride)	569-64-2	ISO 16373	µg/L	500	500	< RL
C.I Basic Green 4 (malachite green oxalate)	2437-29-8	ISO 16373	µg/L	500	500	< RL
C.I Basic Green 4 (malachite green)	10309-95-2	ISO 16373	µg/L	500	500	< RL
Disperse Orange 11	82-28-0	ISO 16373	µg/L	500	500	< RL
Basic violet 3 with >0.1% of Michler's Ketone	548-62-9	ISO 16373	µg/L	500	500	< RL
C.I. Acid Viiolet 49	1694-09-3	ISO 16373	µg/L	500	500	< RL
Conclusion						Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

14.Dyes - Disperse (Sensitizing)^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Disperse Yellow 1	119-15-3	ISO 16373	µg/L	50	50	< RL
Disperse Blue 102	12222-97-8	ISO 16373	µg/L	50	50	< RL
Disperse Blue 106	12223-01-7	ISO 16373	µg/L	50	50	< RL
Disperse Yellow 39	12236-29-2	ISO 16373	µg/L	50	50	< RL
Disperse Orange 37/59/76	13301-61-6	ISO 16373	µg/L	50	50	< RL
Disperse Brown 1	23355-64-8	ISO 16373	µg/L	50	50	< RL
Disperse Orange 1	2581-69-3	ISO 16373	µg/L	50	50	< RL
Disperse Yellow 3	2832-40-8	ISO 16373	µg/L	50	50	< RL
Disperse Red 11	2872-48-2	ISO 16373	µg/L	50	50	< RL
Disperse Red 1	2872-52-8	ISO 16373	µg/L	50	50	< RL
Disperse Red 17	3179-89-3	ISO 16373	µg/L	50	50	< RL
Disperse Blue 7	3179-90-6	ISO 16373	µg/L	50	50	< RL
Disperse Blue 26	3860-63-7	ISO 16373	µg/L	50	50	< RL
Disperse Yellow 49	54824-37-2	ISO 16373	µg/L	50	50	< RL
Disperse Blue 35	12222-75-2	ISO 16373	µg/L	50	50	< RL
Disperse Blue 124	61951-51-7	ISO 16373	µg/L	50	50	< RL
Disperse Yellow 9	6373-73-5	ISO 16373	µg/L	50	50	< RL
Disperse Orange 3	730-40-5	ISO 16373	µg/L	50	50	< RL
Disperse Blue 35	56524-77-7	ISO 16373	µg/L	50	50	< RL
Conclusion						Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

15.Dyes - Navy Blue Colorant^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Component 1: C39H23Cl-CrN7O12S 2Na	118685-33-9	ISO 16373	µg/L	500	500	< RL
Component 2: C46H-30CrN10O20S2 3Na	Not Allocated	ISO 16373	µg/L	500	500	< RL
Conclusion						Comply

Abbreviation: < = less than
RL = reporting limit
µg/L = microgram per liter

16.Flame Retardants^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	Limit	Result
Tris-(2-chloro-ethyl)-phosphate (TCEP)	115-96-8	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Decabromodiphenyl ether (DecaBDE)	1163-19-5	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Tri-(2,3-di-bromo-propyl)-phosphate (TRIS)	126-72-7	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Pentabromodiphenyl ether (PentaBDE)	32534-81-9	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Octabromodiphenyl ether (OctaBDE)	32536-52-0	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Bis-(2,3-di-bromo-propyl)-phosphate (BIS)	5412-25-9	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Tris(1-aziridinyl)phosphine oxide) (TEPA)	545-55-1	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Polybromobiphenyls (PBB)	59536-65-1	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Tetra-bromo-bisphenol-A (TBBPA)	79-94-7	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Hexabromocyclododecane (HBCDD)	3194-55-6	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
2,2-bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Tris-(1,3-di-chloro-iso-propyl)-phosphate (TDCP)	13674-87-8	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Tris-(2-chloro-1-methylethyl) phosphate (TCPP)	13674-84-5	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Decabromobiphenyl (DecaBB)	13654-09-6	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Dibromobiphenyls (DiBB)	Multiple	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Octabromobiphenyls (OctaBB)	Multiple	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Tetrabromobisphenol A bis (dibromopropyl ether)	21850-44-2	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Heptabromodiphenyl ether (HeptaBDE)	68928-80-3	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Hexabromodiphenyl ether (hexaBDE)	36483-60-0	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Monobromobiphenyls (MonoBB)	Multiple	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Monobromodiphenylethers Multiple (MonoBDEs)	Multiple	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Nonabromobiphenyls (NonaBB)	Multiple	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Nonabromodiphenyl ether (NonaBDE)	63936-56-1	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Tetrabromodiphenyl ether (TetraBDE)	40088-47-9	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL
Tribromodiphenylethers (TriBDEs)	Multiple	US EPA 8270, ISO 22032, US EPA 527,US EPA 8321B	µg/L	5	25	< RL

Boric acid *	10043-35-3; 11113-50-1	EPA 6020a	µg/L	20	100	**142**
Diboron trioxide *	1303-86-2	EPA 6020a	µg/L	20	100	**142**
Disodium octaborate *	12008-41-2	EPA 6020a	µg/L	20	100	**142**
Disodium tetraborate anhydrous *	1303-96-4; 1330-43-4	EPA 6020a	µg/L	20	100	**142**
Tetraboron disodium heptaoxide, hydrate *	12267-73-1	EPA 6020a	µg/L	20	100	**142**
Conclusion					--	Not Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

Remark:

* Borate salts are determined as total boron via ICP. Limit refers to boron, not the salt.

17.Glycols / Glycol Ethers^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Bis(2-methylethyl)ether	111-96-6	EN 71-9:2005+A1:2007; EN 71-10 and -11:2005 modified	µg/L	50	50	< RL
2-Ethoxyethanol	110-80-5	EN 71-9:2005+A1:2007; EN 71-10 and -11:2005 modified	µg/L	50	50	< RL
2-Ethoxyethyl acetate	111-15-9	EN 71-9:2005+A1:2007; EN 71-10 and -11:2005 modified	µg/L	50	50	< RL
Ethylene glycol dimethyl ether	110-71-4	EN 71-9:2005+A1:2007; EN 71-10 and -11:2005 modified	µg/L	50	50	< RL
2-Methoxyethanol	109-86-4	EN 71-9:2005+A1:2007; EN 71-10 and -11:2005 modified	µg/L	50	50	< RL
2-Methoxyethyl acetate	110-49-6	EN 71-9:2005+A1:2007; EN 71-10 and -11:2005 modified	µg/L	50	50	< RL
2-Methoxypropyl acetate	70657-70-4	EN 71-9:2005+A1:2007; EN 71-10 and -11:2005 modified	µg/L	50	50	< RL
Triethylene glycol dimethyl ether	112-49-2	EN 71-9:2005+A1:2007; EN 71-10 and -11:2005 modified	µg/L	50	50	< RL
Conclusion						Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

18.Halogenated Solvents^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
1,2-dichloroethane	107-06-2	US EPA 8260D	µg/L	1	1	< RL
Methylene chloride	75-09-2	US EPA 8260D	µg/L	1	1	< RL
Trichloroethylene	79-01-6	US EPA 8260D	µg/L	1	1	< RL
Tetrachloroethylene	127-18-4	US EPA 8260D	µg/L	1	1	< RL
Conclusion						Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

19.Organotin Compounds^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Mono-,di-and tri-methyltin derivatives	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Mono-,di-and tri-butyltin derivatives	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Mono-,di-and tri-phenyltin derivatives	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Mono-,di-and tri-octyltin derivatives	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Dipropyltin compounds (DPT)	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Tetrabutyltin compounds (TeBT)	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Tripropyltin Compounds (TPT)	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Tetraoctyltin compounds (TeOT)	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Tricyclohexyltin (TCyHT)	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Tetraethyltin Compounds (TeET)	Multiple	ISO 17353	µg/L	0.01	0.01	< RL
Conclusion						Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

20.Other / Miscellaneous Chemicals^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
AEEA [2-(2-aminoethylamino) ethanol]	111-41-1	GB 31604.10-2016 modified	µg/L	500	500	< RL
Bisphenol A	80-05-7	GB 31604.10-2016 modified	µg/L	10	10	< RL
Thiourea	62-56-6	GB 31604.10-2016 modified	µg/L	50	50	< RL
Quinoline	91-22-5	GB 31604.10-2016 modified	µg/L	50	50	< RL
Borate, zinc salt *	12767-90-7	EPA 6020a	µg/L	50	100	**B 142;Zn 163**
Conclusion						Not Comply

Abbreviation: < = less than
RL = reporting limit
µg/L = microgram per liter

Remark:

* Borate, zinc salt is determined as total boron and total zinc via ICP. Limit refers to boron and zinc individaully, not the salt.

21.Perfluorinated and Polyfluorinated Chemicals (PFCs)

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	Customer Requirement	Result
Perfluorooctane sulfonate (PFOS) and related substances, Perfluorooctanoic acid (PFOA)	Multiple	EPA 8270, PFCs: LC-MS-MS FTOH: GC-MS	µg/L	0.01	0.01	< RL
Perfluorooctanoic acid (PFOA) related substances	Multiple	EPA 8270, PFCs: LC-MS-MS FTOH: GC-MS	µg/L	1	1	< RL
Conclusion					--	Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

22.Phthalates - Including all other esters of phthalic acid^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Di(ethylhexyl) phthalate (DEHP)	117-81-7	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Bis(2-methoxyethyl) phthalate(DMEP)	117-82-8	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-n-octyl phthalate (DNOP)	117-84-0	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-iso-decyl phthalate (DIDP)	26761-40-0	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-Isononyl Phthalate (DINP)	28553-12-0	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-n-hexyl phthalate (DnHP)	84-75-3	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-n-butyl phthalate (DBP)	84-74-2	US EPA 8270E, ISO 18856	µg/L	10	10	**59**
Butyl benzyl phthalate (BBP)	85-68-7	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Dinonyl phthalate (DNP)	84-76-4	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Diethyl phthalate (DEP)	84-66-2	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-n-propyl phthalate (DPRP)	131-16-8	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-isobutyl phthalate (DIBP)	84-69-5	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-cyclohexyl phthalate (DCHP)	84-61-7	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-iso-octyl phthalate (DIOP)	27554-26-3	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4; 68515-50-4	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6; 84777-06-0	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Di-n-pentylphalates	131-18-0	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Diisopentylphthalates	605-50-5	US EPA 8270E, ISO 18856	µg/L	10	10	< RL
Conclusion						Not Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

23.Polycyclic Aromatic Hydrocarbons (PAHs)^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Benzo(a)pyrene	50-32-8	US EPA 8270E	µg/L	1	1	< RL
Anthracene	120-12-7	US EPA 8270E	µg/L	1	1	< RL
Pyrene	129-00-0	US EPA 8270E	µg/L	1	1	< RL
Benzo[ghi]perylene	191-24-2	US EPA 8270E	µg/L	1	1	< RL
Benzo(e)pyrene	192-97-2	US EPA 8270E	µg/L	1	1	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	US EPA 8270E	µg/L	1	1	< RL
Benzo(j)fluoranthene	205-82-3	US EPA 8270E	µg/L	1	1	< RL
Benzo[b]fluoranthene	205-99-2	US EPA 8270E	µg/L	1	1	< RL
Fluoranthene	206-44-0	US EPA 8270E	µg/L	1	1	< RL
Benzo[k]fluoranthene	207-08-9	US EPA 8270E	µg/L	1	1	< RL
Acenaphthylene	208-96-8	US EPA 8270E	µg/L	1	1	< RL
Chrysene	218-01-9	US EPA 8270E	µg/L	1	1	< RL
Dibenz(a,h)anthracene	53-70-3	US EPA 8270E	µg/L	1	1	< RL
Benzo[a]anthracene	56-55-3	US EPA 8270E	µg/L	1	1	< RL
Acenaphthene	83-32-9	US EPA 8270E	µg/L	1	1	< RL
Phenanthrene	85-01-8	US EPA 8270E	µg/L	1	1	< RL
Fluorene	86-73-7	US EPA 8270E	µg/L	1	1	< RL
Naphthalene	91-20-3	US EPA 8270E	µg/L	1	1	< RL
Conclusion						Comply

				Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Benzo(a)pyrene	50-32-8	HJ 805-2016	mg/kg	0.2	< RL
Anthracene	120-12-7	HJ 805-2016	mg/kg	0.2	< RL
Pyrene	129-00-0	HJ 805-2016	mg/kg	0.2	< RL
Benzo[ghi]perylene	191-24-2	HJ 805-2016	mg/kg	0.2	< RL
Benzo(e)pyrene	192-97-2	HJ 805-2016	mg/kg	0.2	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	HJ 805-2016	mg/kg	0.2	< RL
Benzo(j)fluoranthene	205-82-3	HJ 805-2016	mg/kg	0.2	< RL
Benzo[b]fluoranthene	205-99-2	HJ 805-2016	mg/kg	0.2	< RL
Fluoranthene	206-44-0	HJ 805-2016	mg/kg	0.2	< RL
Benzo[k]fluoranthene	207-08-9	HJ 805-2016	mg/kg	0.2	< RL
Acenaphthylene	208-96-8	HJ 805-2016	mg/kg	0.2	< RL
Chrysene	218-01-9	HJ 805-2016	mg/kg	0.2	< RL
Dibenz(a,h)anthracene	53-70-3	HJ 805-2016	mg/kg	0.2	< RL
Benzo[a]anthracene	56-55-3	HJ 805-2016	mg/kg	0.2	< RL
Acenaphthene	83-32-9	HJ 805-2016	mg/kg	0.2	< RL
Phenanthrene	85-01-8	HJ 805-2016	mg/kg	0.2	< RL
Fluorene	86-73-7	HJ 805-2016	mg/kg	0.2	< RL
Naphthalene	91-20-3	HJ 805-2016	mg/kg	0.2	< RL
Conclusion					Report Only

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter
mg/kg = milligram per kilogram

Remark:

The limits according to ZDHC limit (Table 4C of ZDHC Wastewater Guidelines Version 2.1 issued in November 2022):

Parameter	**ZDHC Sludge Limit (mg/kg)**						
Sludge Type	A	B	C	D	E	F	G
PAHs	Sample and Report only			0.2	0.2	0.2	0.2

24.Restricted Aromatic Amines(Cleavable from Azo)^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
4,4'-methylene-bis-(2-chloroaniline)	101-14-4	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4,4'-diaminodiphenylmethane	101-77-9	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4,4'-oxydianiline	101-80-4	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4-chloroaniline	106-47-8	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
3,3'-Dimethoxybenzidine	119-90-4	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
3,3'-Dimethylbenzidine	119-93-7	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
6-Methoxy-m-toluidine	120-71-8	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
2,4,5-trimethylaniline	137-17-7	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4,4'-Thiodianiline	139-65-1	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4-aminoazobenzene	60-09-03	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL

4-methoxy-m-phenylenediamine	615-05-4	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4,4'-Methylenedi-o-toluidine	838-88-0	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
2,6-xylidine	87-62-7	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
o-anisidine	90-04-0	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
2-naphthylamine	91-59-8	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
3,3'-Dichlorobenzidine	91-94-1	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4-Aminobiphenyl	92-67-1	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
benzidine	92-87-5	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
o-toluidine	95-53-4	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
2,4-xylidine	95-68-1	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4-chloro-o-toluidine	95-69-2	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL

4-methyl-m-phenylenediamine	95-80-7	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
o-Aminoazotoluene	97-56-3	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
5-nitro-o-toluidine	99-55-8	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4-chloro-o-toluidinium chloride	3165-93-3	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
2-Naphthylammoniumacetate	553-00-4	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
4-methoxy-m-phenylene diammonium sulphate	39156-41-7	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
2,4,5-trimethylaniline hydrochloride	21436-97-5	Reduction, EPA 8270 and ISO 14362-1 and ISO 14362-3 (if needed) GC/MS and LC/ MS/MS	µg/L	0.1	0.1	< RL
Conclusion						Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

25.UV Absorbers^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	36437-37-3	US EPA 8270, ISO 22032, US EPA 527, US EPA 8321B	µg/L	100	100	< RL
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	US EPA 8270, ISO 22032, US EPA 527, US EPA 8321B	µg/L	100	100	< RL
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	US EPA 8270, ISO 22032, US EPA 527, US EPA 8321B	µg/L	100	100	< RL
2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327)	3864-99-1	US EPA 8270, ISO 22032, US EPA 527, US EPA 8321B	µg/L	100	100	< RL
Conclusion						Comply

Abbreviation: < = less than
RL = reporting limit
µg/L = microgram per liter

26.Volatile Organic Compounds (VOC)^

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Benzene	71-43-2	ISO 11423-1	µg/L	1	1	< RL
Xylene	1330-20-7	ISO 11423-1	µg/L	1	1	< RL
o-cresol	95-48-7	ISO 11423-1	µg/L	1	1	< RL
p-cresol	106-44-5	ISO 11423-1	µg/L	1	1	< RL
m-cresol	108-39-4	ISO 11423-1	µg/L	1	1	< RL
Toluene*	108-88-3	ISO 11423-1	µg/L	1	1	< RL
Conclusion						Comply

Abbreviation: < =less than
RL =reporting limit
µg/L = microgram per liter

Remark:

* Sample and report only for mock leather

27.Dimethyl Formamide (DMFa)

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Dimethyl formamide (DMFa) *	68-12-2	US EPA 8215, 8270E	µg/L	1000	1000	< RL
Conclusion						Comply

Abbreviation: < = less than
RL = reporting limit
µg/L = microgram per liter

Remark:

* Sample and Report only for mock leather

^ Indicates that the item is tested in TÜV Rheinland (Shanghai) Co., Ltd.

Wastewater Sampling Report for ZDHC WWG
ZDHC WWG 废水采样报告

ZDHC Wastewater Guidelines Version 2.1 (Nov. 2022)
ZDHC Wastewater and Sludge SAP Version 2.1 (Nov. 2022)

Client 客户：	/
Buyer's Name 买家名称：	/
Test item(s) 测试项目：	ZDHC Wastewater
Factory Name 工厂名称：	山东恒泰纺织有限公司
Factory Address 工厂地址：	山东省临沂市一水经济开发区腾飞路西段
Discharge Type of Wastewater： 废水排放类型	Indirect discharge 间接排放
On-site ETP 在线废水处理装置	Yes 是
Sampling Date 采样日期：	2024 年 09 月 10 日
Sampling Location 采样点：	Incoming water (进水) Discharged Wastewater (排放废水) Raw Wastewater (原废水) Sludge (污泥) (Ref to the location map attached 参考采样点地图)
Sampling Person 采样人员：	Harris Chu
ZDHC Sampler Accreditation Certification Number 采样员证书编号:	ZDHC-A-24-E-C001068-R3DD9-A8306
TUV Sales 莱茵销售支持：	Peter Zhang
Sampling Field Contact： 采样现场联系方式	Name (联系人):闫经理 Phone (电话):15168940320

Sampling Preparation Checklist 采样准备检查表

Checked By 审核人： Peter Zhang Date 日期： 2024 年 09 月 10 日

Equipment list 设备列表	Check 核查	Equipment list 设备列表	Check 核查
Sampling equipment 采样设备		Buffer 缓冲液	
Sampling rod 采样杆		pH meter pH 计	
Depth sampler with temperature meter 带温度计取样器		Temperature meter 温度计	
Disposable gloves 一次性手套		DO meter 溶氧仪	
2L amber glass bottle 2L 棕色玻璃瓶		Total Chloride meter 总氯测试仪	
1L amber glass bottle 1L 棕色玻璃瓶		**Quality control samples 质控样**	
100mL amber glass bottle 100mL 棕色玻璃瓶		Field blanks 现场空白	
500mL amber glass bottle 500mL 棕色玻璃瓶		Transport/equipment blanks 运输/设备空白	
250mL amber glass bottle 250mL 棕色玻璃瓶		**Sample storage and transport 样品储存和运输**	
100ml PE bottle 100mL 聚乙烯瓶		Blue Ice 蓝冰	
500mL PE bottle 500mL 聚乙烯瓶		Packing material 包装材料	
40mL amber VOA vial 40mL 棕色 VOA 小瓶		Container 样品存放容器	
Aseptic bag 无菌袋		**Safety equipment 安全装备**	
PE bag 聚乙烯袋		First-aid kit 急救箱	
Labels for samples 样品标签		Drinking water 饮用水	
Chemical and measurement equipment 化学试剂及测量设备		Mobile phone/communication equipment 手机/通信设备	
Nitric acid 硝酸		PPE-wide brimmed has wet weather gear waders/rubber boots disposable overalls 个人防护设备-高筒防水胶靴/一次性工装连体橡胶靴	
Sulfuric acid 硫酸		Antiseptic hand wash 杀菌洗手液	
HCl 盐酸		Lifejackets/EPIRB 救生衣/应急无线电示位标	
$Na_2S_2O_3$ 硫代硫酸钠		**Others 其他**	
2M zinc acetate 2M 乙酸锌		Tools-spanner/shifter.etc 工具-扳手/移动装置等	
1M NaOH 1M 氢氧化钠溶液		Digital camera and batteries/charger 数码相机和电池/充电器	

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Basic Information in Sampling Fields 采样基本信息

Production lines 生产线（编号）	Operation state 运行状态	Note 说明
/	正常	

Wastewater treatment plant 污水处理设施（编号）	Operation state 运行状态	Quantity of wastewater effluent 污水排放量 （m^3）	Note 说明
/	正常	4000	

Flowrate and Type of Disharge 排放量及排放类型	Flowrate 排放量: ☐ Direct Discharge 直接排放 ☐ Indirect Discharge with WWTP 间接排放+有污水处理装置 ☐ Indirect Discharge without WWT 间接排放+无污水处理装置 ☐ Zero Liquid Discharge 零排放	Confirmed by Sampling team ☐ Yes ☐ No
Discharge standard of the factory 企业排放标准	见右图	
Facility Type 工厂类型	☐ Is the polyester wet processing facilities? 是涤纶湿法加工厂吗？	☐ Yes ☐ No
	☐ Is the PU processing facilities? 是 PU 加工厂吗？	☐ Yes ☐ No
Suldge disposal pathway 污泥处理方式	☐ A - Offsite Incineration at >1000°C 大于 1000°C 场外焚烧 ☐ B - Landfill with Significant Control Measures 重大控制措施的垃圾填埋场 ☐ C - Building Products Processed at >1000 °C 大于 1000℃下加工的建筑产品 ☐ D - Landfill with Limited Control Measures 采取有限控制措施的垃圾填埋场 ☐ E - Offsite Incineration and Building Products Processed at <1000°C 小于 1000°C 场外焚烧和加工的建筑产品 ☐ F - Landfills with No Control Measures 没有控制措施的垃圾填埋场 ☐ G - Land Application 土地应用	Please insert photo

Sampling day weather 采样天气状况:	☐ sunny 晴 ☐ rainy 雨 ☐ cloudy 多云 ☐ others 其他
Sampling mode 采样方式:	☐ discrete 瞬时 ☐ composite 混合 ☐ others 其他
Sampling day temperature 采样气温:	30℃
Distance from TUV to sampling place 采样点距离莱茵距离:	580km

Test Item In Lab (实验室测试项目):

Remark: # Buffer = EPA Method 218.6. Dissolve 33 g of ammonium sulphate in 75 ml of ASTM D1103 Type 1 or ISO 3696 water, add 6.5 ml of ammonium hydroxide. Dilute to 100 ml with ASTM D1103 Type 1 or ISO 3696 water.

Sampling Location (采样点)：Incoming water (进水)

Sampling Team (采样组)		
Sampling time (采样时间)		9:30
Sample description in field (样品描述)	Colour (颜色)	透明
	Odor (气味)	无
	Turbidity (浑浊)	无
	Oil slick (浮油)	无

Test Item In Lab (实验室测试项目)：

Test item 采样项目	**Lab No. 标签号**	**Bottle type and size 样品瓶规格**	**Treatment 现场处理情况**	**Multiple sampling (Y/N)**	**Note 备注**
AP/APEO, Anti- Microbials & Biocides, Chlorinated Parafins, Chlorophenols, COC, DMFa, Dyes, Flame retardant, Glycols, Organotin, Phthalates, PAHs, AZO, UV Absorbers, Other chemicals 烷基酚/烷基酚聚氧乙烯醚，抗菌剂，氯化石蜡，氯化苯酚，氯苯和氯甲苯，N,N-二甲酰胺，染料，阻燃剂，乙二醇，有机锡，邻苯，多环芳烃，偶氮染料，紫外吸收剂，其他化学物质	I001	2L amber glass bottle 2L 棕色玻璃瓶	-	N	
PFCs 全氟化物	I002	1L PE bottle 1L 聚乙烯瓶	Filling without air in bottle 满瓶不留空气	N	
Halogenated Solvent/ VOCs 卤化溶剂、挥发性有机物	I003	3*40mL amber VOA vial no head-space 3个40mL棕色VOA小瓶	Acidify to pH < 2 with hydrochloric acid, filling without air in bottle. 加盐酸调节水样pH小于2, 满瓶不留空气	N	
Field blank of Halogenated Solvent/ VOCs 卤化溶剂、挥发性有机物现场空白	I103B	3*40mL amber VOA vial no head-space 40mL棕色VOA小瓶	Filling with Grade 1 water， acidify to pH < 2 with hydrochloric acid, filling without air in bottle. 用一级水装满，加盐酸调节水样pH小于2, 满瓶不留空气	-	Only open the cap when sampling on site, no sampling required 现场采样时打开瓶盖即可，不需要采样
Heavy metals 重金属	I004	1L PE bottle 1L聚乙烯瓶	Acidify to pH< 2 with nitric acid 加硝酸调节水样 pH 小于 2	N	
Field blank of Mercury 汞现场空白	I104B	100mL PE bottle 100mL 聚乙烯瓶	Filling with Grade 1 water and Acidify to pH < 2 with nitric acid 装入一级水，加硝酸调节水样pH小于2	-	Only open the cap when sampling on site, no sampling required 现场采样时打开瓶盖即可，不需要采样

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Test item **采样项目**	**Lab No.** **标签号**	**Bottle type and size** **样品瓶规格**	**Treatment** **现场处理情况**	**Multiple sampling (Y/N)**	**Note** **备注**
Cr VI 六价铬	I005	3*40mL amber brown glass VOA vial 3个40mL棕色玻璃VOA小瓶	0.45 um filter in field, add buffer***** to pH 9.0-9.5 现场过 0.45um 微膜，加缓冲液调节水样 pH 至 9.0-9.5	N	
Temperature indicator bottle 温度指示瓶	-	500mL amber glass bottle 500mL棕色玻璃瓶	-	-	

Remark: # Buffer = EPA Method 218.6. Dissolve 33 g of ammonium sulphate in 75 ml of ASTM D1103 Type 1 or ISO 3696 water, add 6.5 ml of ammonium hydroxide. Dilute to 100 ml with ASTM D1103 Type 1 or ISO 3696 water.

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Sampling Location (采样点)：Discharged Wastewater (排放废水)

Sampling Team (采样组)									
Sampling time (采样时间)		1	2	3	4	5	6	7	Ave
		9:50	10:50	11:50	12:50	13:50	14:50	15:50	--
Temperature of receiving water [Δ] (接收水体的温度)		31	31	31	31	31	31	31	31
Temperature of the water in discharge pipe Wastewater receiver body temperature (排放管中水体的温度)		34	34	34	34	34	34	34	34
pH value pH 值		7	7	7	7	7	7	7	7
Dissolved Oxygen (溶氧) mg/L		--	--	--	--	--	--	--	--
Total Chloride (总氯) mg/L		--	--	--	--	--	--	--	--
Persistent Foam- Foam thicker than 45cm (Yes/No) 泡沫厚度大于 45 厘米(是/否)		否	否	否	否	否	否	否	否
									否
Wastewater Flowrate meter 污水流速仪 (L/min)		-	-	-	-	-	-	-	-
Alternate measured Flow 替代测量流量	Depth 深度 (cm)	-	-	-	-	-	-	-	-
	Velocity 流速(cm/sec)	-	-	-	-	-	-	-	-
Sample description in field (样品描述)	Colour (颜色)	淡灰色							
	Odor (气味)	轻微							
	Turbidity (浑浊)	无							
	Oil slick (浮油)	无							

[Δ] Use incoming water temperature as receiver body temperature if no receiver body can be found

Test Item In Lab (实验室测试项目)：

Test item 采样项目	**Lab No. 标签号**	**Bottle type and size 样品瓶规格**	**Treatment 现场处理情况**	**Multiple sampling (Y/N)**	**Note 备注**
Heavy metals 重金属	D104	1L PE bottle 1L聚乙烯瓶	Acidify to pH< 2 with nitric acid 加硝酸调节水样 pH 小于 2	Y	
Field blank of Mercury 汞现场空白	D104B	100mL PE bottle 100mL 聚乙烯瓶	Filling with Grade 1 Water， Acidify to pH < 2 with nitric acid 填入一级水，加硝酸调节水样pH小于2	-	Only open the cap when sampling on site, no sampling required 现场采样时打开瓶盖即可，不需要采样
Cr VI 六价铬	D105	3*40mL amber brown glass VOA vial 3个40mL棕色玻璃VOA小瓶	0.45 um filter in field, add buffer* to pH 9.0-9.5 现场过 0.45um 微膜，加缓冲液调节水样 pH 至 9.0-9.5	Y	

Sampling Location (采样点)：Raw Wastewater (原废水)

Sampling Team (采样组)								
Sampling time (采样时间)		1	2	3	4	5	6	7
		10:02	11:10	12:05	13:07	14:06	15:03	16:05
Sample description in field (样品描述)	Colour (颜色)	灰色						
	Odor (气味)	轻微						
	Turbidity (浑浊)	无						
	Oil slick (浮油)	无						

Test Item In Lab (实验室测试项目)：

Test item 采样项目	**Lab No. 标签号**	**Bottle type and size 样品瓶规格**	**Treatment 现场处理情况**	**Multiple sampling (Y/N)**	**Note 备注**
AP/APEO, Anti-Microbials & Biocides, Chlorinated Parafins, Clorophenols, COC, DMFa, Dyes, Flame retardant, Glycols, Organotin, Phthalates, PAHs, AZO, UV Absorbers, Other chemicals 烷基酚/烷基酚聚氧乙烯醚，抗菌剂，氯化石蜡，氯化苯酚，氯苯和氯甲苯，N,N-二甲酰胺，染料，阻燃剂，乙二醇，有机锡，邻苯，多环芳烃，偶氮染料，紫外吸收剂，其他化学物质	R201	2L*7 amber glass bottle 2L*7 棕色玻璃瓶	-	Y	
PFCs 全氟化物	R202	1L PE bottle 1L 聚乙烯瓶	Filling without air in bottle 满瓶不留空气	Y	
Halogenated Solvent/ VOCs 卤化溶剂、挥发性有机物	R203	3*40mL amber VOA vial no head-space 3个40mL棕色VOA小瓶	Acidify to pH < 2 with hydrochloric acid, filling without air in bottle. 加盐酸调节水样pH小于2，满瓶不留空气	Y	
Field blank of Halogenated Solvent/ VOCs 卤化溶剂、挥发性有机物现场空白	R203B	3*40mL amber VOA vial no head-space 40mL棕色VOA小瓶	Acidify to pH < 2 with hydrochloric acid, filling without air in bottle. 加盐酸调节水样pH小于2，满瓶不留空气	-	Only open the cap when sampling on site, no sampling required 现场采样时打开瓶盖即可，不需要采样

Sampling Location (采样点)：Sludge (污泥)

Sampling Team (采样组)		
Sampling time (采样时间)		12:30
Sample description in field (样品描述)	Surroundings (周边环境)	正常
	Sludge colour (土壤颜色)	深灰
	Sludge type (土壤性状)	☐ solid (固体状)　☐ liquid (液体状)
	Sludge odor (土壤气味)	轻微
	Apparent source of pollution (明显污染源)	无

Test Item In Lab (实验室测试项目)：

Test item 采样项目	**Lab No. 标签号**	**Bottle type and size 样品瓶规格**	**Treatment 现场处理情况**	**Multiple sampling (Y/N)**	**Note 备注**
%Solid，Paint Filter Test 固含量，油漆过滤测试	S301	500ml PE bottle 500ml 聚乙烯瓶	-	N	
Cyanide 氰化物	S302	1L PE bottle 1L 聚乙烯瓶	Adding NaOH to pH >12, adding 0.1mL 10% $Na_2S_2O_3$ solution 用氢氧化钠调节水样 pH 大于 12，再加 0.1mL10%硫代硫酸钠溶液	N	
Feacal Coliform 粪大肠菌群	S303	Aseptic Bags 无菌袋	Adding 0.1mL 10% $Na_2S_2O_3$ solution, keep in the dark 加0.1mL 10%硫代硫酸钠溶液，避光保存	N	
Heavy metals 重金属	S304	1L PE bag 1L PE袋	Acidify to pH< 2 with nitric acid 加硝酸调节水样 pH 小于 2	N	
AP/APEO, COC, PAHs 烷基酚/烷基酚聚氧乙烯醚/烷基酚、氯甲苯、多环芳烃	S305	1L* 3 PE bag 1L* 3 PE 袋	0.008% $Na_2S_2O_3$ V/W 加 0.008% （体积重量比）硫代硫酸钠溶液袋子	N	

Sampling Point Indication (Map)

采样点信息

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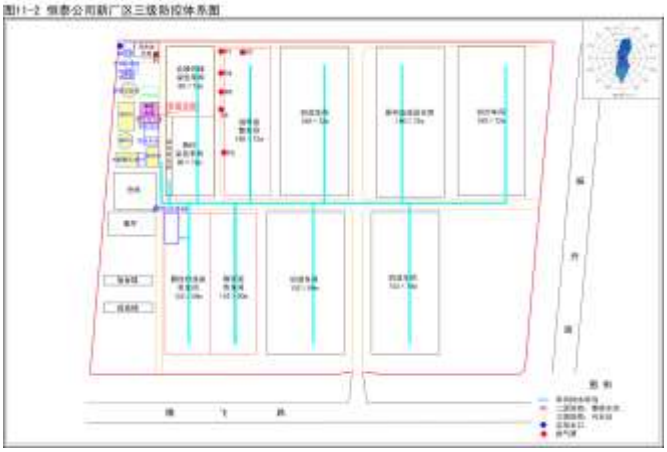
Factory Gate 工厂大门	Factory Layout 工厂排污平面图
	
Other Factory Photo 其它工厂图片	Other Factory Photo 其它工厂图片
	

Sampling Photo
采样点照片

Sampling Location (Incoming water) 采样点(进水)	Sampling Location (Incoming water) 采样点(进水)
	
Sampling Location (Discharged Wastewater) 采样点(排放废水)	Sampling Location (Discharged Wastewater) 采样点(排放废水)
	

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Sampling Location (Raw Wastewater) 采样点(原废水)	Sampling Location (Raw Wastewater) 采样点(原废水)
	
Sampling Location (Sludge) 采样点(污泥)	Sampling Location (Sludge) 采样点(污泥)
	

Sampler and ZDHC Accredited no. 采样员及 ZDHC 认证编号：	Harris Chu ZDHC-A-24-E-C001068-R3DD9-A8306	Date 日期：	2024-09-10
Checked By 审核人：	Peter Zhang	Date 日期：	2024-09-10
Signature and stamp by Factory 工厂人员签名及盖章：		Date 日期：	2024-09-10

Sample storage conditions 样品保存条件	☐ Refrigeration(0-4℃) ☐ Frozen 冷冻 ☐ RT 常温 ☐ Others 其他				
Sample send temperature/ status/ count 样品送出温度、状态、数量	1 Pac,正常	Sent by 送样人	Harris	Date 日期	2024-09-10
Sample delivery temperature/ status/ count 样品接收温度、状态、数量	1 Pac,正常	Received by 接收人	Eric Hu	Date 日期	2024-09-12

- END –
结束

General Terms and Conditions of Business of TÜV Rheinland in Greater China

1. Scope

1.1 These General Terms and Conditions of Business of TÜV Rheinland in Greater China ("GTCB") is made between the client and one or more member entities of TÜV Rheinland in Greater China as applicable as the case may be ("TÜV Rheinland"). The Greater China hereof refers to the regions within the territories of China.The client hereof includes :

(i) a natural person capable to form legally binding contracts under the applicable laws who concludes the contract not for the purpose of a daily use;

(ii) the incorporated or unincorporated entity duly organized, validly existing and capable to form legally binding contracts under the applicable law.

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

1.3 Any standard terms and conditions of the client of any nature shall not apply and shall hereby be expressly excluded. No standard contractual terms and conditions of the client shall form part of the contract even if TÜV Rheinland does not explicitly object to them.

1.4 In the context of an ongoing business relationship with the client, this GTCB shall also apply to future contracts with the client without TÜV Rheinland having to refer to them separately in each individual case.

2. Quotations

Unless otherwise agreed, all quotations submitted by TÜV Rheinland can be changed by TÜV Rheinland without notice prior to its acceptance and confirmation by the other party.

3. Coming into effect and duration of contracts

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

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

3.3 If the contract provides for an extension of the contract term, the contract term will be extended by the term provided for in the contract unless terminated in writing by either party with a three-month notice prior to the end of the contractual term.

4. Scope of services

4.1 The scope and type of the services to be provided by TÜV Rheinland shall be specified in the contractually agreed service scope of TÜV Rheinland by both parties. If no such separate service scope of TÜV Rheinland exists, then the written confirmation of order by TÜV Rheinland shall be decisive for the service to be provided. Unless otherwise agreed, services beyond the scope of the service description (e.g. checking the correctness and functionality of parts, products, processes, installations, organizations not listed in the service description, as well as the intended use and application of such) are not owed. In particular, no responsibility is assumed for the design, selection of materials, construction or intended use of an examined part, product, process or plant, unless this is expressly stated in the order.

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

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

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

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

4.6 If mandatory legal regulations and standards or official requirements for the agreed service scope change after conclusion of the contract, with a written notice to the client, TÜV Rheinland shall be entitled to additional remuneration for resulting additional expenses.

4.7 The services to be provided by TÜV Rheinland under the contract are agreed exclusively with the client. A contract of third parties with the services of TÜV Rheinland, as well as making available of and justifying confidence in the work results (test reports, test results, expert reports, etc.) is not part of the agreed services. This also applies if the client passes on work results - in full or in extracts - to third parties in accordance with clause 11.4.

4.8 The client understands and agrees that in order to perform the contract with TÜV Rheinland, the client may need to sign one or more contracts/ agreements with a/more third party(ies) and establish legal relationships with that/those third party(ies) according to such contracts/agreements. TÜV Rheinland will merely bears the corresponding legal liability according to this contract and the direct services actually to be provided by our company in the service process. If the relevant services are not directly provided by TÜV Rheinland (including but not limited to any testing and certification services to be provided by third testing and certification bodies), TÜV Rheinland will provide the client as agent for such relevant services. In order to achieve the purpose of the contract, the client hereby agrees that TÜV Rheinland can also sub-entrust to a third party to provide agency services, but TÜV Rheinland shall not bear any responsibility and/or risk for any services to be provided by any third parties (including but not limited to the testing and/or certification services to be entrusted and/or applied for by our company on behalf of the client to other third testing and/or certification bodies, agency services provided by any other third agent(s), etc.). Besides, the client shall be liable in accordance with the relevant laws and regulations and/or the terms under the contract. If the client is required to conduct any annual review/surveillance of the relevant testing and/or certification service results and pay additional fees in accordance with the relevant laws and regulations or the testing and certification rules, such fees are not within the scope of the contract price, the client shall timely perform the obligation of such annual review/surveillance and pay the corresponding fees. If the client fails to perform such obligations of the annual review/surveillance or fees payment, it may lead to adverse consequences such as failure/ suspending/cancellation/invalidity of testing and/or certification results, which shall not be borne/liable by TÜV Rheinland.

4.9 For the service content agreed in the contract, if the client requires TÜV Rheinland to deliver relevant test samples, data, etc. to any overseas laboratory or other places or sites to be designated by the client, TÜV Rheinland shall not take any responsibilities or risks for any problems during such delivery and the transportation process (including but not limited to any loss or damages of the samples and/or the materials, etc.). Besides, the relevant freight fees shall be borne by the client.

5. Performance periods/dates

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

5.2 If binding periods of performance have been agreed, these periods shall not commence until the client has submitted all required documents to TÜV Rheinland.

5.3 Articles 5.1 and 5.2 also apply, even without express approval by the client, to all extensions of agreed periods/dates of performance not caused by TÜV Rheinland.

5.4 TÜV Rheinland is not responsible for a delay in performance, in particular if the client has not fulfilled his duties to cooperate in accordance with clause 6.1 or has not done so in time and, in particular, has not provided TÜV Rheinland with all documents and information required for the performance of the service as specified in the contract.

5.5 If the performance of TÜV Rheinland is delayed due to unforeseeable circumstances such as force majeure, strikes, business disruptions, governmental regulations, transport obstacles, etc., TÜV Rheinland is entitled to postpone performance for a reasonable period of time which corresponds at least to the duration of the hindrance plus any time period which may be required to resume performance.

5.6 If the client is obliged to comply with legal, officially prescribed and/or by the accreditor prescribed deadlines, it is the client's responsibility to agree on performance dates with TÜV Rheinland, which enable the client to comply with the legal and/or officially prescribed deadlines. TÜV Rheinland assumes no responsibility in this respect unless TÜV Rheinland expressly agreed in writing specifically stating that ensuring the deadlines is the contractual obligation of TÜV Rheinland.

6. The client's obligation to cooperate

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

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

a) it has required statutory qualifications;

b) the product, service or management system to be certified complies with applicable laws and regulations; and

c) it doesn't have any illegal and dishonest behaviours or is not included in the list of Enterprises with Serious Illegal and Dishonest Acts of People's Republic of China.

If the client breaches the aforesaid representations and warranties, TÜV Rheinland is entitled to i) immediately terminate the contract/order without prior notice; and ii) withdraw the issued testing report/certificates if any.

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

7. Prices

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

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

7.3 If the execution of an order extends over more than one month and the value of the contract or the agreed fixed price exceeds €2,500.00 or equivalent value in local currency, TÜV Rheinland may demand payments on account or in instalments.

8. Payment terms

8.1 All invoice amounts shall be due for payment within 30 days of the invoice date without deduction on receipt of the invoice. No discounts and rebates shall be granted.

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

8.3 In cases of default of payment, TÜV Rheinland shall be entitled to claim default interest at the applicable short term loan interest rate publicly announced by a reputable commercial bank in the country where TÜV Rheinland is located. At the same time, TÜV Rheinland reserves the right to claim further damages.

8.4 Should the client default in payment of the invoice despite being granted a reasonable grace period, TÜV Rheinland shall be entitled to cancel the contract, withdraw the certificate, claim damages for non-performance and refuse to continue performance of the contract.

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

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

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

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

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

8.10 TÜV Rheinland shall have the right at all times to setoff any amount due or payable by the client, including but not limited to setoff against any fees paid by the client under any contracts, agreement and/or orders/quotations reached with TÜV Rheinland.

9. Acceptance of work

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

9.2 If acceptance is required or contractually agreed in an individual case, this shall be deemed to have taken place two (2) weeks after completion and handover of the work, unless the client refuses acceptance within this period stating at least one fundmental breach of contract by TÜV Rheinland.

9.3 The client is not entitled to refuse acceptance due to insignificant breach of contract by TÜV Rheinland.

9.4 If acceptance is excluded according to the nature of the work performance of TÜV Rheinland, the completion of the work shall take its place.

9.5 During the Follow-Audit stage, if the client was unable to make use of the time windows provided for within the scope of a certification procedure for auditing/performance by TÜV Rheinland and the certificate is therefore to be withdrawn (e.g. performance of surveillance audits), or if the client cancels or postpones a confirmed audit date within two (2) weeks before the agreed date, TÜV Rheinland is entitled to immediately charge a lump-sum compensation of 10% of the order amount as compensation for expenses. The client reserves the right to prove that the TÜV Rheinland has incurred no damage whatsoever or only a considerably lower damage than the above lump sum.

9.6Insofar as the client has undertaken in the contract to accept services, TÜV Rheinland shall also be entitled to charge lump-sum damages in the amount of 10% of the order amount as compensation for expenses if the service is not called within one year after the order has been placed. The client reserves the right to prove that the TÜV Rheinland has incurred no damage whatsoever or only a considerably lower damage than the above mentioned lump sum.

10. Confidentiality

10.1 For the purpose of these terms and conditions, "confidential information" means all know-how, trade secrets, documents, images, drawings, expertise, information, data, test results, reports, samples, project documents, pricing and financial information, customer and supplier information, and marketing techniques and materials, tangible or intangible, that are supplied, transferred or otherwise disclosed by one Party (the "disclosing party") to the other Party (the "receiving party"), in writing or orally, in printed or electronic format. Confidential information is expressly not the data and know-how collected, compiled or otherwise obtained by TÜV Rheinland (non-personal and not proprietary to the client) within the scope of the provision of services by TÜV Rheinland. TÜV Rheinland is entitled to store, use, further develop and pass on the data obtained in connection with the provision of services for the purposes of developing new services, improving services and analysing the provision of services.10.2 The disclosing party shall mark all confidential information disclosed in written form as confidential before passing it onto the receiving party. The same applies to confidential information transmitted by e-mail. If confidential information is disclosed orally, the receiving party shall be appropriately informed in advance and the disclosing party shall confirm in writing the confidentiality nature of the information within five working days of oral disclosure. Where the disclosing party fails to do so within the stipulated period, the receiving party shall not take any confidentiality obligations hereunder towards such information. The client shall avoid using any third party platform and/or system (e.g. Wechat, etc. Unauthorized by TÜV Rheinland) to send any confidential information to TÜV Rheinland. Instead, the client shall send any confidential information to company email of TÜV Rheinland employees through its company email. If the client suffers from any losses or damages due to any theft or leakages to be caused by the adoption of any unauthorized confidential information sharing methods mentioned above, TÜV Rheinland shall be waived for any compensation liabilities.

10.3 All confidential information which the disclosing party transmits or otherwise discloses to the receiving party and which is created during performance of work by TÜV Rheinland:

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

b) may not be copied, distributed, published or otherwise disclosed by the receiving party, unless this is necessary for fulfilling the purpose of the contract or TÜV Rheinland is required to pass on confidential information, inspection reports or documentation to the government authorities, judicial court, accreditation bodies or third parties (including but not limited to the relevant direct and/or indirect exposed purchasers, vehicle manufacturers/whole equipment manufacturers, test standards or test requirements providers of the client's test products and/or certified products, etc.) that are involved in the performance of the contract;

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

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

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

a) it was generally known at the time of disclosure or has become general knowledge without violation of this confidentiality clause by the receiving party; or

b) it was disclosed to the receiving party by a third party entitled to disclose this information; or

c) the receiving party already possessed this information prior to disclosure by the disclosing party; or

d) the receiving party developed it itself, irrespective of disclosure by the disclosing party, shall not be deemed to constitute confidential information as defined in this confidentiality clause.

10.6 All confidential information shall remain the property of the disclosing party. The receiving party hereby agrees to immediately (i) return all confidential information, including all copies, to the disclosing party, and/or (ii) on request by the disclosing party, to destroy all confidential information, including all copies, and confirm the destruction of this confidential information to the disclosing party in writing, at any time if so requested by the disclosing party but at the latest and without special request after termination or expiry of the contract. This does not extend to include reports and certificates prepared for the client solely for the purpose of fulfilling the obligations under the contract, which shall remain with the client. However, TÜV Rheinland is entitled to make file copies of such reports, certificates and confidential information that forms the basis for preparing these reports and certificates in order to evidence the correctness of its results and for general documentation purposes required by laws, regulations and the requirements of working procedures of TÜV Rheinland.

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

11. Copyrights and rights of use, publications

11.1 TÜV Rheinland shall retain all exclusive copyrights in the reports, expert reports/opinions, test reports/results, results, calculations, presentations etc. prepared by TÜV Rheinland, unless otherwise agreed by the parties in a separate agreement. As the owner of the copyrights, TÜV Rheinland is free to grant others the right to use the work results for individual or all types of use ("right of use")

11.2 The client receives a simple, unlimited, non-transferable, non-sublicensable right of use to the contents of the work results produced within the scope of the contract, unless otherwise agreed by the parties in a separate agreement.The client may only use such reports, expert reports/opinions, test reports/results, results calculations, presentations etc. prepared within the scope of the contract for the contractually agreed purpose.

11.3 The transfer of right of use of the generated work results regulated in clause 11.2. of the GTCB is subject to full payment of the remuneration agreed in favour of TÜV Rheinland.

11.4 The client may use work results only complete and unshortened. The client may only pass on the work results in full unless TÜV Rheinland has given its prior written consent to the partial passing on of work results.

11.5 Any publication or duplication of the work results for advertising purposes or any further use of the work results beyond the scope regulaed in clause 11.2, and any quotaion of the introduction of TÜV Rheinland need the prior written approval of TÜV Rheinland in each individual case. Besides, the client ensures that the aforesaid use shall comply with relevant applicable laws, regulations and relevant rules (including but not limited to specific applicable testing and certification rules, etc.).

11.6 TÜV Rheinland may revoke a once given approval according to clause 11.5 at any time without stating reasons. In this case, the client is obliged to stop the transfer of the work results immediately at his own expense and, as far as possible, to withdraw publications.

11.7 The consent of TÜV Rheinland to publication or duplication of the work results does not entitle the client to use the corporate logo, corporate design or test/certification mark of TÜV Rheinland.

12. Liability of TÜV Rheinland

12.1 Irrespective of the legal basis, to the fullest extent permitted by applicable law, in the event of a breach of contractual obligations or tort, the liability of TÜV Rheinland for all damages, losses and reimbursement of expenses caused by TÜV Rheinland, its legal representatives and/or employees shall be limited to: (i) in the case of a contract with a fixed overall fee, three times the overall fee for the entire contract; (ii) in the case of a contract for annually recurring services, the agreed annual fee; (iii) in the case of a contract expressly charged on a time and material basis, a maximum of 20,000 Euro or equivalent amount in local currency; and (iv) in the case of a framework agreement that provides for the possibility of placing individual orders, three times of the fee for the individual order under which the damages or losses have occurred. Notwithstanding the above, in the event that the total and accumulated liability calculated according to the foregoing provisions exceeds 2.5 Million Euro or equivalent amount in local currency, the total and accumulated liability of TÜV Rheinland shall be only limited to and shall not exceed the said 2.5 Million Euro or equivalent amount in local currency.

12.2 The limitation of liability according to article 12.1 above shall not apply to damages and/or losses caused by malice, intent or gross negligence on the part of TÜV Rheinland or its vicarious agents. Such limitation shall not apply to damages for a person's death, physical injury or illness.

12.3 In cases involving a fundamental breach of contract, TÜV Rheinland will be liable even where minor negligence is involved. For this purpose, a "fundamental breach" is breach of a material contractual obligation, the performance of which permits the due performance of the contract. Any claim for damages for a fundamental breach of contract shall be limited to the amount of damages reasonably foreseen as a possible consequence of such breach of contract at the time of the breach (reasonably foreseeable damages), unless any of the circumstances described in article 12.2 applies.

12.4 TÜV Rheinland shall not be liable for the acts of the personnel made available by the client to support TÜV Rheinland in the performance of its services under the contract, unless such personnel made available is regarded as vicarious agent of TÜV Rheinland. If TÜV Rheinland is not liable for the acts of the personnel made available by the client under the foregoing provision, the client shall indemnify TÜV Rheinland against any claims made by third parties arising from or in connection with such person's acts.

12.5 Unless otherwise contractually agreed in writing, TÜV Rheinland shall only be liable under the contract to the client.

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

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

13. Export control

13.1 When passing on the services provided by TÜV Rheinland or parts thereof to third parties in Greater China or other regions, the client must comply with the respectively applicable regulations of national and international export control law.

13.2 The performance of a contract with the client is subject to the proviso that there are no obstacles to performance due to national or international foreign trade legislations or embargos and/or sanctions. In the event of a violation, TÜV Rheinland shall be entitled to terminate the contract with immediate effect and the client shall compensate for the losses incured thereof by TÜV Rheinland.

14. Data protection notice

The client understands and agrees that TÜV Rheinland processes personal data (including but not limited to the personal information) of the client and its related parties (including but not limited to the supplier of the client) for the purpose of fulfilling this contract. The client confirms that it has obtained the prior consent of the data subject, which entitles TÜV Rheinland to access, use, or process the personal data that the client collected or processed by itself and transferred to TÜV Rheinland. For certain services, we may also process sensitive personal data. TÜV Rheinland will use and process the data in accordance with the relevant legal basis. If any personal data has to be disclosed or transferred to any third party or any overseas party outside of the district in which the personal data was collected, the client also confirms that it has obtained the prior consent of the data subject. TÜV Rheinland will carry out cross-border data transmission and protect the data in compliance with the privacy and personal data security related laws and regulations in China and the local country. TÜV Rheinland will take measures to avoid any leakage, abuse, manipulation, damage or unauthorized access of personal data. The personal data will be deleted immediately as soon as a corresponding reason for deletion arises. Data subjects may exercise the following rights: right of information, right of decision, right of rectification, right of deletion, right of processing limitation, right of objection, right of data transferability. In addition, persons concerned by the data processing have the right to revoke their consent at any time with effect for the future, as well as the right to file a complaint with the competent data protection supervisory authority. For further details on the processing of personal data by TÜV Rheinland as the person responsible or contract processor, please refer to the respective data protection information. You can contact the Group Data Protection Officer of TÜV Rheinland by e-mail at dataprotection@tuv.com or by post at the following address: TÜV Rheinland AG, c/o Group Data Protection Officer, Am Grauen Stein, 51105 Cologne, Germany.

15. Retention of test material and documentation

15.1 The test samples submitted by the client to TÜV Rheinland for testing will be scrapped following testing or will be returned to the client at the client's expense. The only exceptions are test samples, which are placed in storage on the basis of statutory regulations or of another agreement with the client.

15.2 Charges apply if the test samples are stored at the premises of TÜV Rheinland. The cost of placing a test sample into storage will be disclosed to the client in the quotation.

15.3 If reference samples or documentations are given to the client to be placed in storage at their premises, the reference samples or documentations must be made available to TÜV Rheinland upon request promptly and free of charge. If the client, in response to such a request, is incapable of making available the reference samples and/or documentation, any liability claims for material and pecuniary damage resulting from the respective testing and certification that is brought forward by the client against TÜV Rheinland shall be voided.

15.4 The retention period for the documentation shall be 10 (ten) years after the expiry of the test mark certificates or shall meet the applicable legal requirements for EU/EC certificates of conformity and GS mark certificates.

15.5 The costs of the handover and dispatch of the test samples for storage on the client's premises are borne by the client. TÜV Rheinland will be liable for the loss of test samples or reference samples from the laboratories or warehouses of TÜV Rheinland only in case of gross negligence.

16.Termination of the contract

16.1 Notwithstanding clause 3.3 of the GTCB, TÜV Rheinland and the client are entitled to terminate the contract in its entirety or, in the case of services combined in one contract, each of the combined parts of the contract, in writing and independently of the continuation of the remaining services with six (6) months' notice to the end of the contractually agreed term. The notice period shall be shortened to six (6) weeks in case TÜV Rheinland is prevented from performing the services due to a loss or a suspension of its accreditation or notification.

16.2 For good causes, TÜV Rheinland may consider giving a written notice to the client to terminate the contract without bearing any liabilities and the client shall pay the relevant service fees for the services provided by TÜV Rheinland due to the termination date of the contract. The aforesaid good causes includes but not limited to the following:

a) the client does not immediately notify TÜV Rheinland of changes in the conditions within the company which are relevant for certification or accreditation;

b) the client misuses the certificate or certification mark or uses it in violation of the contract;

c) in the event of several consecutive delays in payment (at least three times);

d) a substantial deterioration of the financial circumstances of the client occurs and as a result the payment claims of TÜV Rheinland under the contract are considerably endangered and TÜV Rheinland cannot reasonably be expected to continue the contractual relationship.

e) in the event of any serious misrepresentation, be it by intentional fraud or grossly negligent behavior of the managers, employees or agents of the client;

f) if TÜV Rheinland, for reasons beyond its control, is temporarily or finally not able or entitled to continue or finalize the performance of the service, e.g. in case of force majeure, government interference, sanctions, loss of accreditation or notification, or other.

g) if the country/region involved in the whole contract or the specific service project in the contract does not belong to the insurance coverage applicable to TÜV Rheinland, and TÜV Rheinland believes that there is a risk or some risks beyond its control to continue to perform the contract.

16.3 In the event of termination with written notice by TÜV Rheinland for good cause, TÜV Rheinland shall be entitled to a lump-sum claim for damages against the client if the conditions of a claim for damages exist. In this case, the client shall owe 15% of the remuneration to be paid until the end of the fixed contract term as lump-sum compensation. The client reserves the right to prove that there is no damage or a considerably lower damage, TÜV Rheinland reserves the right to prove a considerably higher damage in individual cases.

16.4 TÜV Rheinland is also entitled to terminate the contract with written notice if the client has not been able to make use of the time windows for auditing /service provision provided by TÜV Rheinland within the scope of a certification procedure and the certificate therefore has to be withdrawn (for example during the performance of monitoring audits). Clause 16.3 applies accordingly.

17. Force Majeure

17.1 "Force Majeure" means the occurrence of an event or circumstance that prevents or impedes a Party from performing one or more of its contractual obligations under the contract, if and to the extent that that Party proves: (a) that such impediment is beyond its reasonable control; and (b) that it could not reasonably have been foreseen at the time of the conclusion of the contract; and (c) that the effects of the impediment could not reasonably have been avoided or overcome by the affected Party.

17.2. In the absence of proof to the contrary, the following events affecting a Party shall be presumed to fulfil conditions (a) and (b) under paragraph 1 of this Clause: (i) war (whether declared or not), hostilities, invasion, act of foreign enemies, extensive military mobilization; (ii) civil war, riot, rebellion and revolution, military or usurped power, insurrection, act of terrorism, sabotage or piracy; (iii) currency and trade restriction, embargo, sanction; (iv) act of authority whether lawful or unlawful, compliance with any law or governmental order, expropriation, seizure of works, requisition, nationalization; (v) plague, epidemic, natural disaster or extreme natural event; (vi) explosion, fire, destruction of equipment, prolonged breakdown of transport, telecommunication, information system or energy; (vii) general labor disturbance such as boycott, strike and lock-out, go-slow, occupation of factories and premises.

17.3. The Party successfully invoking this Clause is relieved from its duty to perform its obligations under the contract and from any liability in damages or from any other contractual remedy for breach of contract, from the time at which the impediment causes inability to perform, provided that the notice thereof is given without delay. If notice thereof is not given without delay, the relief is effective from the time at which notice thereof reaches the other Party. Where the effect of the impediment or event invoked is temporary, the above consequences shall apply only as long as the impediment invoked impedes performance by the affected Party. Where the duration of the impediment invoked has the effect of substantially depriving the contracting Parties of what they were reasonably entitled to expect under the contract, either Party has the right to terminate the contract by notification within a reasonable period to the other Party. Unless otherwise agreed, the Parties expressly agree that the contract may be terminated by either Party if the duration of the impediment exceeds 120 days.

18. Hardship

18.1 The Parties are bound to perform their contractual duties even if events have rendered performance more onerous than could reasonably have been anticipated at the time of the conclusion of the contract.

18.2. Notwithstanding paragraph 1 of this Clause, where a Party proves that:

(a) the continued performance of its contractual duties has become excessively onerous due to an event beyond its reasonable control which it could not reasonably have been expected to have taken into account at the time of the conclusion of the contract; and that

(b) it could not reasonably have avoided or overcome the event or its consequences, the Parties are bound, within a reasonable time of the invocation of this Clause, to negotiate alternative contractual terms which reasonably allow to overcome the consequences of the event.

18.3. Where Clause 18.2 applies, but where the Parties have been unable to agree alternative contractual terms as provided in that paragraph, the Party invoking this Clause is entitled to terminate the contract, but cannot request adaptation by the judge or arbitrator without the agreement of the other Party.

19. Partial invalidity, written form, place of jurisdiction and dispute resolution

19.1 All amendments and supplements must be in writing in order to be effective. This also applies to amendments and supplements to this clause 17.1.

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

19.3 Unless otherwise stipulated in the contract, the governing law of the contract and these terms and conditions shall be chosen following the rules as below:

a) if TÜV Rheinland in question is legally registered and existing in the People's Republic of China, the contracting parties hereby agree that the contract and these terms and conditions shall be governed by the laws of the People's Republic of China.

b) if TÜV Rheinland in question is legally registered and existing in Taiwan, the contracting parties hereby agree that the contract and these terms and conditions shall be governed by the laws of Taiwan.

c) if TÜV Rheinland in question is legally registered and existing in Hong Kong, the contracting parties hereby agree that the contract and these terms and conditions shall be governed by the laws of Hong Kong.

19.4 Any dispute in connection with the contract and these terms and conditions or the execution thereof shall be settled friendly through negotiations.

Unless otherwise stipulated in the contract, if no settlement or no agreement in respect of the extension of the negotiation period can be reached within two months of the arising of the dispute, the dispute shall be submitted:

a) in the case of TÜV Rheinland in question being legally registered and existing in the People's Republic of China, to China International Economic and Trade Arbitration Commission (CIETAC) to be settled by arbitration under the Arbitration Rules of CIETAC in force when the arbitration is submitted. The arbitration shall take place in Beijing, Shanghai, Shenzhen or Chongqing as appropriately chosen by the claiming party.

b) in the case of TÜV Rheinland in question being legally registered and existing in Taiwan, to Chinese Arbitration Association, Taipei to be arbitrated in accordance with its then current Rules of Arbitration. The arbitration shall take place in Taipei.

c) in the case of TÜV Rheinland being legally registered and existing in Hong Kong, to Hong Kong International Arbitration Centre (HKIAC) to be settled by arbitration under the HKIAC Administered Arbitration Rules in force when the Notice of Arbitration is submitted in accordance with these rules. The arbitration shall take place in Hong Kong.

The decision of the relevant arbitration tribunal shall be final and binding on both parties. The arbitration fee shall be borne by the losing party.