



Softline

ULR - TC553922000012051P

Test Report No.: 0222410025-REV1

Client: Aarti International Ltd

Village - Bhama Kalan & Harhian, PO Uppal Kohara Macchiwara Link Road, Ludhiana 141113

Contact Person: Harpreet Singh

Buyer Name: As per ZDHC Wastewater Guideline

Factory Details

Factory Name : Aarti International Ltd

Factory Address : Village - Bhama Kalan & Harhian, PO Uppal Kohara Macchiwara Link Road,
Ludhiana 141113

Discharge Type of Wastewater : Zero Liquid discharge (ZLD)

For Indirect discharge

Name of public wastewater treatment plants : -

Address of public wastewater treatment plants : -

Sampling Details

ZDHC Sampler Certificate No. : 8F146507369

Sampling Date : 2022-03-24

Sample Receiving Date : 2022-03-25

Testing Period : 2022-03-25 to 2022-04-11

Sampling Method:

Sample Type	Total Volume	1	2	3	4	5	6
Discharged Wastewater	-	-	-	-	-	-	-
Raw Wastewater	10L	12:30	13:30	14:30	15:30	16:30	17:30
Incoming Water	-	-	-	-	-	-	-
Sludge	3kg	15:45	-	-	-	-	-
Overall Rating	Incoming Water	Discharged Wastewater		Raw Wastewater		Sludge	
Conventional Parameters / Anion / Metals	Not Tested	Not Tested		Full fill Foundational Limit		Not Comply	
MRSL Parameters	Not Tested	Not Tested		Comply		Not Comply	
Legal Compliance	Not Requested	Not Requested		Not Requested		Not Requested	
Specifications	ZDHC Wastewater Guidelines Version 1.1 (July 2019)						

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For and on behalf of
TÜV Rheinland (India) Pvt Ltd.

14th April 2022
Manokamna Mishra
Technical Executive
Vikas Pipal
Analytical Lab Manager

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

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Result Summary:

Conventional Parameters	Incoming Water	Discharged Wastewater	Raw Wastewater	Sludge
Temperature	-	-	-	-
Total Suspended Solids (TSS)	-	-	-	-
Chemical Oxygen Demand (COD)	-	-	-	-
Total Nitrogen	-	-	-	-
pH Value	-	-	-	-
Colour	-	-	-	-
Biochemical Oxygen Demand (BOD5) - 5 Days	-	-	-	-
Ammonium Nitrogen	-	-	-	-
Total Phosphorous	-	-	-	-
Adsorbable Organic Halogens (AOX)	-	-	-	-
Oil and Grease	-	-	-	-
Phenol	-	-	-	-
Coliform	-	-	-	-
Persistent Foam	-	-	-	-
Anion - Sulfide	-	-	-	-
Anion - Sulfite	-	-	-	-
Heavy Metals	-	-	O	X
Anion – Cyanide #	-	-	-	O
Dry Mass (total solids)	-	-	-	O
Manufacturing Restricted Substances List (MRSL)	Incoming Water	Discharged Wastewater	Raw Wastewater	Sludge
Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): Including All Isomers	-	-	O	O
Chlorobenzenes and Chlorotoluenes	-	-	O	O
Chlorophenols	-	-	O	X
Dyes - Azo (Forming Restricted Amines)	-	-	O	O
Dyes - Carcinogenic or Equivalent Concern	-	-	O	O
Dyes - Disperse (Sensitizing)	-	-	O	O
Flame Retardants	-	-	O	O
Glycols	-	-	O	O
Halogenated Solvents	-	-	O	O
Organotin Compounds	-	-	O	O

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Perfluorinated and Polyfluorinated Chemicals (PFCs)	-	-	O	O
Phthalates - Including all other esters of phthalic acid	-	-	O	O
Polycyclic Aromatic Hydrocarbons (PAHs)	-	-	O	O
Volatile Organic Compounds (VOC)	-	-	O	O

Note: Full fill = Full fill Foundational Limit
 Exceed = Exceed Foundational Limit
 O = Comply with ZDHC Limit
 X = Not Comply with ZDHC Limit
 - = Not Tested
 # = Marked test is subcontracted to TUV Rheinland approved lab

Material List:

Field ID	Sample Type	Sample Description
R001	Raw	Raw Wastewater*
S001	Sludge	Sludge* (ZLD system)

Remark: This is to supersede report no .0222410025 dated 11/04/2022

The test report.0222410025 dated 11/04/2022 has been revised for Chlorophenols test results.

Discipline

NABL – Chemical Testing

Group

Pollution & Environment

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.

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1. Heavy Metals

			Sample No.		R001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Antimony (Sb)	Antimony	EPA 6020A, Acid Digestion ICP-MS	mg/L	0.01	< RL
Chromium (Cr, total)	Chromium Total		mg/L	0.05	< RL
Cobalt (Co)	Cobalt		mg/L	0.01	< RL
Copper (Cu)	Copper		mg/L	0.25	< RL
Nickel (Ni)	Nickel		mg/L	0.05	< RL
Silver (Ag)	Silver		mg/L	0.005	< RL
Zinc (Zn)	Zinc		mg/L	0.5	< RL
Arsenic (As)	Arsenic		mg/L	0.005	< RL
Cadmium (Cd)	Cadmium		mg/L	0.01	< RL
Lead (Pb)	Lead		mg/L	0.01	< RL
Mercury (Hg)	Mercury		mg/L	0.001	< RL
Chromium (Cr VI)	Chromium VI	ISO 18412:2005, buffer ext. UV analysis	mg/L	0.001	< RL
Conclusion				--	Full fill Foundational Limit
			Sample No.		S001
Parameter	Parameter Code	Test Method	Unit	RL	Result
Antimony (Sb)	Antimony	MS-0038920 (Acid Digestion analysis by ICP-MS, EPA 6020A)	-	-	NA
Chromium (Cr, total)	Chromium Total		-	-	NA
Cobalt (Co)	Cobalt		-	-	NA
Copper (Cu)	Copper		-	-	NA
Nickel (Ni)	Nickel		-	-	NA
Silver (Ag)	Silver		-	-	NA
Zinc (Zn)	Zinc		-	-	NA
Arsenic (As)	Arsenic		mg/kg	1	32.4
Cadmium (Cd)	Cadmium		mg/kg	1	< RL
Lead (Pb)	Lead		mg/kg	1	4.7
Mercury (Hg)	Mercury		mg/kg	0.1	< RL
Chromium (Cr VI)	Chromium VI	MS-0038910 (Colourimetric analysis UV/VIS ,EPA 7196)	mg/kg	1	< RL

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Conclusion	--	Not Comply
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Abbreviation:

< =less than

RL =reporting limit

mg/L = milligram per litre

mg/kg = milligram per kilogram

NA = Not applicable

Remark:

The limits according to ZDHC limit (Table 1B and Table 3 of ZDHC Wastewater Guidelines Version 1.1 issued in July 2019):

Parameter	ZDHC Limit (mg/L)			ZDHC Limit (mg/kg)
	Foundational	Progressive	Aspirational	Sludge
Antimony (Sb)	0.1	0.05	0.01	NA
Chromium (Cr, total)	0.2	0.1	0.05	NA
Cobalt (Co)	0.05	0.02	0.01	NA
Copper (Cu)	1	0.5	0.25	NA
Nickel (Ni)	0.2	0.1	0.05	NA
Silver (Ag)	0.1	0.05	0.005	NA
Zinc (Zn)	5.0	1.0	0.5	NA
Arsenic (As)	0.05	0.01	0.005	2
Cadmium (Cd)	0.1	0.05	0.01	2
Lead (Pb)	0.1	0.05	0.01	2
Mercury (Hg)	0.01	0.005	0.001	0.2
Chromium (Cr VI)	0.05	0.005	0.001	2

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

Parameter	Parameter Code	Test Method	Unit	RL	Sample No.	R001
					ZDHC Limit	Result
Nonylphenol (NP), mixed isomers	104-40-5 25154-52-3 11066-49-2 84852-15-3	ISO 18857-2 (Mod. DCM Extraction)	µg/L	5	5	< RL
Octylphenol (OP), mixed isomers	140-66-9 1806-26-4 27193-28-8	ISO 18857-2 (Mod. DCM Extraction)	µg/L	5	5	< RL

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Nonylphenol ethoxylates (NPEO)	9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	ISO 18254-1, ISO 18857-2	µg/L	5	5	< RL
Octylphenol ethoxylates (OPEO)	9002-93-1 9036-19-5 68987-90-6	ISO 18254-1, ISO 18857-2	µg/L	5	5	< RL
Conclusion					--	Comply
Sample No.						S001
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 (Mod. DCM Extraction)	mg/kg	0.2	0.4	< RL
Octylphenol (OP), mixed isomers	140-66-9 1806-26-4 27193-28-8	ISO 18857-2 (Mod. DCM Extraction)	mg/kg	0.2	0.4	< RL
Nonylphenol ethoxylates (NPEO)	9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0	ISO 18254-1, ISO 18857-2	mg/kg	0.2	0.4	< RL
Octylphenol ethoxylates (OPEO)	9002-93-1 9036-19-5 68987-90-6	ISO 18254-1, ISO 18857-2	mg/kg	0.2	0.4	< RL
Conclusion					--	Comply

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

3.Chlorobenzenes and Chlorotoluenes

Sample No.						R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Monochlorobenzene	108-90-7	US EPA 8270D Dichloromethane extraction followed by GC-MS	µg/L	0.2	0.2	< RL
1,2-Dichlorobenzene	95-50-1		µg/L	0.2	0.2	< RL
1,3-Dichlorobenzene	541-73-1		µg/L	0.2	0.2	< RL
1,4-Dichlorobenzene	106-46-7		µg/L	0.2	0.2	< RL
1,2,3-Trichlorobenzene	87-61-6		µg/L	0.2	0.2	< RL
1,2,4-Trichlorobenzene	120-82-1		µg/L	0.2	0.2	< RL

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1,3,5-Trichlorobenzene	108-70-3	TC-5539	µg/L	0.2	0.2	< RL
1,2,3,4-Tetrachlorobenzene	634-66-2		µg/L	0.2	0.2	< RL
1,2,3,5-Tetrachlorobenzene	634-90-2		µg/L	0.2	0.2	< RL
1,2,4,5-Tetrachlorobenzene	95-94-3		µg/L	0.2	0.2	< RL
Pentachlorobenzene	608-93-5		µg/L	0.2	0.2	< RL
Hexachlorobenzene	118-74-1		µg/L	0.2	0.2	< RL
2-Chlorotoluene	95-49-8		µg/L	0.2	0.2	< RL
3-Chlorotoluene	108-41-8		µg/L	0.2	0.2	< RL
4-Chlorotoluene	106-43-4		µg/L	0.2	0.2	< RL
2,3-Dichlorotoluene	32768-54-0		µg/L	0.2	0.2	< RL
2,4-Dichlorotoluene	95-73-8		µg/L	0.2	0.2	< RL
2,5-Dichlorotoluene	19398-61-9		µg/L	0.2	0.2	< RL
2,6-Dichlorotoluene	118-69-4		µg/L	0.2	0.2	< RL
3,4-Dichlorotoluene	95-75-0		µg/L	0.2	0.2	< RL
3,5-Dichlorotoluene	25186-47-4		µg/L	0.2	0.2	< RL
2,3,4-Trichlorotoluene	7359-72-0		µg/L	0.2	0.2	< RL
2,3,6-Trichlorotoluene	2077-46-5		µg/L	0.2	0.2	< RL
2,4,5-Trichlorotoluene	6639-30-1		µg/L	0.2	0.2	< RL
2,4,6-Trichlorotoluene	23749-65-7		µg/L	0.2	0.2	< RL
3,4,5-Trichlorotoluene	21472-86-6		µg/L	0.2	0.2	< RL
2,3,4,5-Tetrachlorotoluene	76057-12-0		µg/L	0.2	0.2	< RL
2,3,5,6-Tetrachlorotoluene	29733-70-8		µg/L	0.2	0.2	< RL
2,3,4,6-Tetrachlorotoluene	875-40-1		µg/L	0.2	0.2	< RL
Pentachlorotoluene	877-11-2	µg/L	0.2	0.2	< RL	
Conclusion					--	Comply
					Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Monochlorobenzene	108-90-7	US EPA 8270D Dichloromethane extraction followed by GC-MS	mg/kg	0.1	0.2	< RL
1,2-Dichlorobenzene	95-50-1		mg/kg	0.1	0.2	< RL
1,3-Dichlorobenzene	541-73-1		mg/kg	0.1	0.2	< RL
1,4-Dichlorobenzene	106-46-7		mg/kg	0.1	0.2	< RL
1,2,3-Trichlorobenzene	87-61-6		mg/kg	0.1	0.2	< RL
1,2,4-Trichlorobenzene	120-82-1		mg/kg	0.1	0.2	< RL
1,3,5-Trichlorobenzene	108-70-3		mg/kg	0.1	0.2	< RL
1,2,3,4-Tetrachlorobenzene	634-66-2		mg/kg	0.1	0.2	< RL
1,2,3,5-Tetrachlorobenzene	634-90-2		mg/kg	0.1	0.2	< RL
1,2,4,5-Tetrachlorobenzene	95-94-3		mg/kg	0.1	0.2	< RL

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Pentachlorobenzene	608-93-5	mg/kg	0.1	0.2	< RL
Hexachlorobenzene	118-74-1	mg/kg	0.1	0.2	< RL
2-Chlorotoluene	95-49-8	mg/kg	0.1	0.2	< RL
3-Chlorotoluene	108-41-8	mg/kg	0.1	0.2	< RL
4-Chlorotoluene	106-43-4	mg/kg	0.1	0.2	< RL
2,3-Dichlorotoluene	32768-54-0	mg/kg	0.1	0.2	< RL
2,4-Dichlorotoluene	95-73-8	mg/kg	0.1	0.2	< RL
2,5-Dichlorotoluene	19398-61-9	mg/kg	0.1	0.2	< RL
2,6-Dichlorotoluene	118-69-4	mg/kg	0.1	0.2	< RL
3,4-Dichlorotoluene	95-75-0	mg/kg	0.1	0.2	< RL
3,5-Dichlorotoluene	25186-47-4	mg/kg	0.1	0.2	< RL
2,3,4-Trichlorotoluene	7359-72-0	mg/kg	0.1	0.2	< RL
2,3,6-Trichlorotoluene	2077-46-5	mg/kg	0.1	0.2	< RL
2,4,5-Trichlorotoluene	6639-30-1	mg/kg	0.1	0.2	< RL
2,4,6-Trichlorotoluene	23749-65-7	mg/kg	0.1	0.2	< RL
3,4,5-Trichlorotoluene	21472-86-6	mg/kg	0.1	0.2	< RL
2,3,4,5-Tetrachlorotoluene	76057-12-0	mg/kg	0.1	0.2	< RL
2,3,5,6-Tetrachlorotoluene	29733-70-8	mg/kg	0.1	0.2	< RL
2,3,4,6-Tetrachlorotoluene	875-40-1	mg/kg	0.1	0.2	< RL
Pentachlorotoluene	877-11-2	mg/kg	0.1	0.2	< RL
Conclusion				--	Comply

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

4.Chlorophenols

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
2-Chlorophenol	95-57-8	US EPA 8270D, Solvent extraction derivatization with KOH, acetic anhydride followed by GC-MS	µg/L	0.5	0.5	< RL
3-chlorophenol	108-43-0		µg/L	0.5	0.5	< RL
4-chlorophenol	106-48-9		µg/L	0.5	0.5	< RL
2,3-Dichlorophenol	576-24-9		µg/L	0.5	0.5	< RL
2,4-Dichlorophenol	120-83-2		µg/L	0.5	0.5	< RL
2,5-Dichlorophenol	583-78-8		µg/L	0.5	0.5	< RL
2,6-Dichlorophenol	87-65-0		µg/L	0.5	0.5	< RL
3,4-Dichlorophenol	95-77-2		µg/L	0.5	0.5	< RL

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3,5- Dichlorophenol	591-35-5		µg/L	0.5	0.5	< RL
2,3,4-Trichlorophenol	15950-66-0		µg/L	0.5	0.5	< RL
2,3,5-Trichlorophenol	933-78-8		µg/L	0.5	0.5	< RL
2,3,6-Trichlorophenol	933-75-5		µg/L	0.5	0.5	< RL
2,4,5-Trichlorophenol	95-95-4		µg/L	0.5	0.5	< RL
2,4,6-Trichlorophenol	88-06-2		µg/L	0.5	0.5	< RL
3,4,5-Trichlorophenol	609-19-8		µg/L	0.5	0.5	< RL
2,3,4,5-Tetrachlorophenol	4901-51-3		µg/L	0.5	0.5	< RL
2,3,4,6-Tetrachlorophenol	58-90-2		µg/L	0.5	0.5	< RL
2,3,5,6-Tetrachlorophenol	935-95-5		µg/L	0.5	0.5	< RL
Pentachlorophenol	87-86-5		µg/L	0.5	0.5	< RL
Conclusion					--	Comply
					Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
2-Chlorophenol	95-57-8	Solvent extraction Acetylation with acetic anhydride followed by GC-MS, ISO 14154	mg/kg	0.03	0.05	< RL
3-chlorophenol	108-43-0		mg/kg	0.03	0.05	< RL
4-chlorophenol	106-48-9		mg/kg	0.03	0.05	< RL
2,3-Dichlorophenol	576-24-9		mg/kg	0.03	0.05	< RL
2,4-Dichlorophenol	120-83-2		mg/kg	0.03	0.05	< RL
2,5-Dichlorophenol	583-78-8		mg/kg	0.03	0.05	< RL
2,6-Dichlorophenol	87-65-0		mg/kg	0.03	0.05	< RL
3,4-Dichlorophenol	95-77-2		mg/kg	0.03	0.05	< RL
3,5- Dichlorophenol	591-35-5		mg/kg	0.03	0.05	< RL
2,3,4-Trichlorophenol	15950-66-0		mg/kg	0.03	0.05	< RL
2,3,5-Trichlorophenol	933-78-8		mg/kg	0.03	0.05	< RL
2,3,6-Trichlorophenol	933-75-5		Solvent extraction Acetylation with acetic anhydride followed by GC-MS, ISO 14154	mg/kg	0.03	0.05
2,4,5-Trichlorophenol	95-95-4	mg/kg		0.03	0.05	< RL
2,4,6-Trichlorophenol	88-06-2	mg/kg		0.03	0.05	< RL
3,4,5-Trichlorophenol	609-19-8	mg/kg		0.03	0.05	< RL
2,3,4,5-Tetrachlorophenol	4901-51-3	mg/kg		0.03	0.05	< RL
2,3,4,6-Tetrachlorophenol	58-90-2	mg/kg		0.03	0.05	0.79
2,3,5,6-Tetrachlorophenol	935-95-5	mg/kg		0.03	0.05	< RL
Pentachlorophenol	87-86-5	mg/kg		0.03	0.05	11.88
Conclusion					--	Not Comply

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

5.Dyes - Azo (Forming Restricted Amines)

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
4,4'-methylene-bis-(2chloroaniline)	101-14-4	EN 14362-1, EN 14362-3 Reduction step with sodium dithionite solvent extraction, GC- MS or LC-MS- MS	µg/L	0.1	0.1	< RL
4,4'-diaminodiphenylmethane	101-77-9		µg/L	0.1	0.1	< RL
4,4'-oxydianiline	101-80-4		µg/L	0.1	0.1	< RL
4-chloroaniline	106-47-8		µg/L	0.1	0.1	< RL
3,3'-Dimethoxybenzidine	119-90-4		µg/L	0.1	0.1	< RL
3,3'-Dimethylbenzidine	119-93-7		µg/L	0.1	0.1	< RL
6-Methoxy-m-toluidine	120-71-8		µg/L	0.1	0.1	< RL
2,4,5-trimethylaniline	137-17-7		µg/L	0.1	0.1	< RL
4,4'-Thiodianiline	139-65-1		µg/L	0.1	0.1	< RL
4-aminoazobenzene	60-09-03		µg/L	0.1	0.1	< RL
4-methoxy-m-phenylenediamine	615-05-4		µg/L	0.1	0.1	< RL
4,4'-Methylenedi-o-toluidine	838-88-0		µg/L	0.1	0.1	< RL
2,6-xylidine	87-62-7		µg/L	0.1	0.1	< RL
o-anisidine	90-04-0		µg/L	0.1	0.1	< RL
2-naphthylamine	91-59-8		µg/L	0.1	0.1	< RL
3,3'-Dichlorobenzidine	91-94-1	µg/L	0.1	0.1	< RL	
4-Aminobiphenyl	92-67-1		µg/L	0.1	0.1	< RL

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benzidine	92-87-5	EN 14362-1, EN 14362-3 Reduction step with sodium dithionite solvent extraction, GC- MS or LC-MS- MS	µg/L	0.1	0.1	< RL
o-toluidine	95-53-4		µg/L	0.1	0.1	< RL
2,4-xylidine	95-68-1		µg/L	0.1	0.1	< RL
4-chloro-o-toluidine	95-69-2		µg/L	0.1	0.1	< RL
4-methyl-m-phenylenediamine	95-80-7		µg/L	0.1	0.1	< RL
o-Aminoazotoluene	97-56-3		µg/L	0.1	0.1	< RL
5-nitro-o-toluidine	99-55-8		µg/L	0.1	0.1	< RL
Conclusion					--	Comply

				Sample No.		S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
4,4'-methylene-bis-(2chloroaniline)	101-14-4	EN 14362-1, EN 14362-3 Reduction step with sodium dithionite solvent extraction, GC- MS or LC-MS- MS	mg/kg	0.2	0.2	< RL
4,4'-diaminodiphenylmethane	101-77-9		mg/kg	0.2	0.2	< RL
4,4'-oxydianiline	101-80-4		mg/kg	0.2	0.2	< RL
4-chloroaniline	106-47-8		mg/kg	0.2	0.2	< RL
3,3'-Dimethoxybenzidine	119-90-4		mg/kg	0.2	0.2	< RL
3,3'-Dimethylbenzidine	119-93-7		mg/kg	0.2	0.2	< RL
6-Methoxy-m-toluidine	120-71-8		mg/kg	0.2	0.2	< RL
2,4,5-trimethylaniline	137-17-7		mg/kg	0.2	0.2	< RL
4,4'-Thiodianiline	139-65-1		mg/kg	0.2	0.2	< RL
4-aminoazobenzene	60-09-03		mg/kg	0.2	0.2	< RL
4-methoxy-m-phenylenediamine	615-05-4		mg/kg	0.2	0.2	< RL
4,4'-Methylenedi-o-toluidine	838-88-0		mg/kg	0.2	0.2	< RL
2,6-xylidine	87-62-7		mg/kg	0.2	0.2	< RL
o-anisidine	90-04-0		mg/kg	0.2	0.2	< RL
2-naphthylamine	91-59-8		mg/kg	0.2	0.2	< RL
3,3'-Dichlorobenzidine	91-94-1		mg/kg	0.2	0.2	< RL

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4-Aminobiphenyl	92-67-1	EN 14362-1, EN 14362-3 Reduction step with sodium dithionite solvent extraction, GC- MS or LC-MS- MS	mg/kg	0.2	0.2	< RL
benzidine	92-87-5		mg/kg	0.2	0.2	< RL
o-toluidine	95-53-4		mg/kg	0.2	0.2	< RL
2,4-xylidine	95-68-1		mg/kg	0.2	0.2	< RL
4-chloro-o-toluidine	95-69-2		mg/kg	0.2	0.2	< RL
4-methyl-m-phenylenediamine	95-80-7		mg/kg	0.2	0.2	< RL
o-Aminoazotoluene	97-56-3		mg/kg	0.2	0.2	< RL
5-nitro-o-toluidine	99-55-8		mg/kg	0.2	0.2	< RL
Conclusion					--	Comply

Abbreviation: < =less than RL =reporting limit

µg/L = microgram per litre

mg/kg = milligram per kilogram

6.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	Liquid extraction, LC-MS-MS	µg/L	500	500	< RL
C.I. Direct Blue 6	2602-46-2		µg/L	500	500	< RL
C.I. Acid Red 26	3761-53-3		µg/L	500	500	< RL
C.I. Basic Red 9	569-61-9		µg/L	500	500	< RL
C.I. Direct Red 28	573-58-0		µg/L	500	500	< RL
C.I. Basic Violet 14	632-99-5		µg/L	500	500	< RL
C.I. Disperse Blue 1	2475-45-8		µg/L	500	500	< RL
C.I. Disperse Blue 3	2475-46-9		µg/L	500	500	< RL
C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5		µg/L	500	500	< RL
C.I Basic Green 4 (malachite green chloride)	569-64-2		µg/L	500	500	< RL
C.I Basic Green 4 (malachite green oxalate)	2437-29-8		µg/L	500	500	< RL
C.I Basic Green 4 (malachite green)	10309-95-2		µg/L	500	500	< RL
Disperse Orange 11	82-28-0		µg/L	500	500	< RL
Conclusion					--	Comply
					Sample No.	S001

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Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
C.I. Direct Black 38	1937-37-7	Liquid extraction, LC-MS-MS, ISO 16373	mg/kg	1	10	< RL
C.I. Direct Blue 6	2602-46-2		mg/kg	1	10	< RL
C.I. Acid Red 26	3761-53-3		mg/kg	1	10	< RL
C.I. Basic Red 9	569-61-9		mg/kg	1	10	< RL
C.I. Direct Red 28	573-58-0		mg/kg	1	10	< RL
C.I. Basic Violet 14	632-99-5		mg/kg	1	10	< RL
C.I. Disperse Blue 1	2475-45-8		mg/kg	1	10	< RL
C.I. Disperse Blue 3	2475-46-9		mg/kg	1	10	< RL
C.I. Basic Blue 26 (with Michler's Ketone > 0.1%)	2580-56-5		mg/kg	1	10	< RL
C.I Basic Green 4 (malachite green chloride)	569-64-2		mg/kg	1	10	< RL
C.I Basic Green 4 (malachite green oxalate)	2437-29-8		mg/kg	1	10	< RL
C.I Basic Green 4 (malachite green)	10309-95-2		mg/kg	1	10	< RL
Disperse Orange 11	82-28-0		mg/kg	1	10	< RL
Conclusion					--	Comply

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

7.Dyes - Disperse (Sensitizing)

Sample No.						R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Disperse Yellow 1	119-15-3	Liquid extraction, LC-MS-MS	µg/L	50	50	< RL
Disperse Blue 102	12222-97-8		µg/L	50	50	< RL
Disperse Blue 106	12223-01-7		µg/L	50	50	< RL
Disperse Yellow 39	12236-29-2		µg/L	50	50	< RL
Disperse Orange 37/59/76	13301-61-6		µg/L	50	50	< RL
Disperse Brown 1	23355-64-8		µg/L	50	50	< RL
Disperse Orange 1	2581-69-3		µg/L	50	50	< RL
Disperse Yellow 3	2832-40-8		µg/L	50	50	< RL
Disperse Red 11	2872-48-2		µg/L	50	50	< RL
Disperse Red 1	2872-52-8		µg/L	50	50	< RL
Disperse Red 17	3179-89-3		µg/L	50	50	< RL
Disperse Blue 7	3179-90-6		µg/L	50	50	< RL
Disperse Blue 26	3860-63-7		µg/L	50	50	< RL

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Disperse Yellow 49	54824-37-2		µg/L	50	50	< RL
Disperse Blue 35	12222-75-2		µg/L	50	50	< RL
Disperse Blue 124	61951-51-7		µg/L	50	50	< RL
Disperse Yellow 9	6373-73-5		µg/L	50	50	< RL
Disperse Orange 3	730-40-5		µg/L	50	50	< RL
Disperse Blue 35	56524-77-7		µg/L	50	50	< RL
Conclusion					--	Comply
					Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Disperse Yellow 1	119-15-3	Liquid extraction, LC-MS-MS, ISO 16373	mg/kg	1	2	< RL
Disperse Blue 102	12222-97-8		mg/kg	1	2	< RL
Disperse Blue 106	12223-01-7		mg/kg	1	2	< RL
Disperse Yellow 39	12236-29-2		mg/kg	1	2	< RL
Disperse Orange 37/59/76	13301-61-6		mg/kg	1	2	< RL
Disperse Brown 1	23355-64-8		mg/kg	1	2	< RL
Disperse Orange 1	2581-69-3		mg/kg	1	2	< RL
Disperse Yellow 3	2832-40-8		mg/kg	1	2	< RL
Disperse Red 11	2872-48-2		mg/kg	1	2	< RL
Disperse Red 1	2872-52-8		mg/kg	1	2	< RL
Disperse Red 17	3179-89-3	Liquid extraction, LC-MS-MS, ISO 16373	mg/kg	1	2	< RL
Disperse Blue 7	3179-90-6		mg/kg	1	2	< RL
Disperse Blue 26	3860-63-7		mg/kg	1	2	< RL
Disperse Yellow 49	54824-37-2		mg/kg	1	2	< RL
Disperse Blue 35	12222-75-2		mg/kg	1	2	< RL
Disperse Blue 124	61951-51-7		mg/kg	1	2	< RL
Disperse Yellow 9	6373-73-5		mg/kg	1	2	< RL
Disperse Orange 3	730-40-5		mg/kg	1	2	< RL
Disperse Blue 35	56524-77-7	mg/kg	1	2	< RL	
Conclusion					--	Comply

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

8.Flame Retardants

Sample No.						R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Tris-(2-chloro-ethyl)phosphate (TCEP)	115-96-8	USEPA 8270, ISO 22032, US EPA 527 and US EPA	µg/L	5	5	< RL

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Decabromodiphenyl ether (DecaBDE)	1163-19-5	8321B, Solvent Extraction, GC-MS and LC-MS/MS	µg/L	5	5	< RL
Tri-(2,3-di-bromo-propyl)phosphate (TRIS)	126-72-7		µg/L	5	5	< RL
Pentabromodiphenyl ether (PentaBDE)	32534-81-9		µg/L	5	5	< RL
Octabromodiphenyl ether (OctaBDE)	32536-52-0		µg/L	5	5	< RL
Bis-(2,3-di-bromopropyl)-phosphate (BIS)	5412-25-9		µg/L	5	5	< RL
Tris(1-aziridinyl) phosphine oxide) (TEPA)	545-55-1		µg/L	5	5	< RL
Polybromobiphenyls (PBB)	59536-65-1		µg/L	5	5	< RL
Tetra-bromo-bisphenol-A (TBBPA)	79-94-7		µg/L	5	5	< RL
Hexabromocyclododecane(HBCDD)	3194-55-6		µg/L	5	5	< RL
2,2-bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0		µg/L	5	5	< RL
Tris-(1,3-di-chloro-isopropyl)-phosphate (TDCP)	13674-87-8		µg/L	5	5	< RL
Short chain chlorinated paraffins,C10-C13 (SCCP)	85535-84-8		µg/L	5	5	< RL
Conclusion					--	Comply
					Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Tris-(2-chloro-ethyl)phosphate (TCEP)	115-96-8	Solvent Extraction, GC-MS and LC-MS/MS, ISO 22032	mg/kg	0.25	1	< RL
Decabromodiphenyl ether (DecaBDE)	1163-19-5		mg/kg	0.25	1	< RL
Tri-(2,3-di-bromo-propyl)phosphate (TRIS)	126-72-7		mg/kg	0.25	1	< RL
Pentabromodiphenyl ether (PentaBDE)	32534-81-9		mg/kg	0.25	1	< RL
Octabromodiphenyl ether (OctaBDE)	32536-52-0		mg/kg	0.25	1	< RL
Bis-(2,3-di-bromopropyl)-phosphate (BIS)	5412-25-9		mg/kg	0.25	1	< RL
Tris(1-aziridinyl) phosphine oxide) (TEPA)	545-55-1		mg/kg	0.25	1	< RL
Polybromobiphenyls (PBB)	59536-65-1		mg/kg	0.25	1	< RL

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Tetra-bromo-bisphenol-A (TBBPA)	79-94-7		mg/kg	0.25	1	< RL
Hexabromocyclododecane(HBCDD)	3194-55-6		mg/kg	0.25	1	< RL
2,2-bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0		mg/kg	0.25	1	< RL
Tris-(1,3-di-chloro-isopropyl)-phosphate (TDCP)	13674-87-8		mg/kg	0.25	1	< RL
Short chain chlorinated paraffins,C10-C13 (SCCP)	85535-84-8		mg/kg	0.25	1	< RL
Conclusion					--	Comply

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

9. Glycols

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Bis(2-methylethyl)ether	111-96-6	US EPA 8270 liquid extraction by GC-MS	µg/L	50	50	< RL
2-Ethoxyethanol	110-80-5		µg/L	50	50	< RL
2-Ethoxyethyl acetate	111-15-9		µg/L	50	50	< RL
Ethylene glycol dimethyl ether	110-71-4		µg/L	50	50	< RL
2-Methoxyethanol	109-86-4		µg/L	50	50	< RL
2-Methoxyethyl acetate	110-49-6		µg/L	50	50	< RL
2-Methoxypropyl acetate	70657-70-4	US EPA 8270 liquid extraction by GC-MS	µg/L	50	50	< RL
Triethylene glycol dimethyl ether	112-49-2		µg/L	50	50	< RL
Conclusion					--	Comply
					Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Bis(2-methylethyl)ether	111-96-6	liquid extraction by GC-MS, ISO 22892	mg/kg	1	10	< RL
2-Ethoxyethanol	110-80-5		mg/kg	1	10	< RL
2-Ethoxyethyl acetate	111-15-9		mg/kg	1	10	< RL
Ethylene glycol dimethyl ether	110-71-4		mg/kg	1	10	< RL
2-Methoxyethanol	109-86-4		mg/kg	1	10	< RL
2-Methoxyethyl acetate	110-49-6		mg/kg	1	10	< RL
2-Methoxypropyl acetate	70657-70-4		mg/kg	1	10	< RL

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Triethylene glycol dimethyl ether	112-49-2		mg/kg	1	10	< RL
Conclusion					--	Comply

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

10. Halogenated Solvents

Sample No.						R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
1,2-dichloroethane	107-06-2	US EPA 8260B, Purge and Trap Technique, GC-MS	µg/L	1	1	< RL
Methylene chloride	75-09-2		µg/L	1	1	< RL
Trichloroethylene	79-01-6		µg/L	1	1	< RL
Tetrachloroethylene	127-18-4		µg/L	1	1	< RL
Conclusion					--	Comply
Sample No.						S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
1,2-dichloroethane	107-06-2	Head Space GC-MS, EPA 5021	mg/kg	0.3	2	< RL
Methylene chloride	75-09-2		mg/kg	0.3	2	< RL
Trichloroethylene	79-01-6		mg/kg	0.3	2	< RL
Tetrachloroethylene	127-18-4		mg/kg	0.3	2	< RL
Conclusion					--	Comply

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

11. Organotin Compounds

Sample No.						R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Mono-,di-and tri-methyltin derivatives	Multiple	ISO 17353, Derivatisation with NaB(C2H5), GC/MS	µg/L	0.01	0.01	< RL
Mono-,di-and tri-butyltin derivatives	Multiple		µg/L	0.01	0.01	< RL
Mono-,di-and tri-phenyltin derivatives	Multiple		µg/L	0.01	0.01	< RL
Mono-,di-and tri-octyltin derivatives	Multiple		µg/L	0.01	0.01	< RL
Conclusion					--	Comply
Sample No.						S001

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Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Mono-,di-and tri-methyltin derivatives	Multiple	Derivatisation with NaB(C2H5) GC/MS, ISO 23161	mg/kg	0.01	0.2	< RL
Mono-,di-and tri-butyltin derivatives	Multiple		mg/kg	0.01	0.2	< RL
Mono-,di-and tri-phenyltin derivatives	Multiple		mg/kg	0.01	0.2	< RL
Mono-,di-and tri-octyltin derivatives	Multiple		mg/kg	0.01	0.2	< RL
Conclusion					--	Comply

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

12.Perfluorinated and Polyfluorinated Chemicals (PFCs)

					Sample No.	R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
PFOS	1763-23-1	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	µg/L	0.01	0.01	< RL
PFOA	335-67-1		µg/L	0.01	0.01	< RL
PFBS	375-73-5 29420-49-3 29420-43-3		µg/L	0.01	0.01	< RL
PFHxA	307-24-4		µg/L	0.01	0.01	< RL
8:2 FTOH	678-39-7		µg/L	1	1	< RL
6:2 FTOH	647-42-7		µg/L	1	1	< RL
Conclusion					--	Comply
					Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
PFOS	1763-23-1	Ionic PFC : concentration or direct injection, LC-MS-MS; Non-ionic : PFC (FTOH) derivatisation with acetic anhydride followed by GC-MS, DIN 38407-42	mg/kg	0.05	0.1	< RL
PFOA	335-67-1		mg/kg	0.05	0.1	< RL
PFBS	375-73-5 29420-49-3 29420-43-3		mg/kg	0.05	0.1	< RL
PFHxA	307-24-4	Ionic PFC : concentration or direct injection, LC-MS-MS; Non-ionic : PFC (FTOH) derivatisation with acetic anhydride followed by GC-MS, DIN 38407-42	mg/kg	0.05	0.1	< RL
8:2 FTOH	678-39-7		mg/kg	1	1	< RL
6:2 FTOH	647-42-7		mg/kg	1	1	< RL
Conclusion					--	Comply

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

13.Pthalates - Including all other esters of phthalic acid

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				Sample No.		R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Di(ethylhexyl) phthalate (DEHP)	117-81-7	US EPA 8270D, Solvent Extraction GC-MS Analysis	µg/L	10	10	< RL
Bis(2-methoxyethyl) phthalate(DMEP)	117-82-8		µg/L	10	10	< RL
Di-n-octyl phthalate (DNOP)	117-84-0		µg/L	10	10	< RL
Di-iso-decyl phthalate (DIDP)	26761-40-0		µg/L	10	10	< RL
Di-Isononyl Phthalate (DINP)	28553-12-0		µg/L	10	10	< RL
Di-n-hexyl phthalate (DnHP)	84-75-3		µg/L	10	10	< RL
Di-n-butyl phthalate (DBP)	84-74-2		µg/L	10	10	< RL
Butyl benzyl phthalate (BBP)	85-68-7		µg/L	10	10	< RL
Dinonyl phthalate (DNP)	84-76-4		µg/L	10	10	< RL
Diethyl phthalate (DEP)	84-66-2		µg/L	10	10	< RL
Di-n-propyl phthalate (DPRP)	131-16-8		µg/L	10	10	< RL
Di-isobutyl phthalate (DIBP)	84-69-5		µg/L	10	10	< RL
Di-cyclohexyl phthalate (DCHP)	84-61-7		µg/L	10	10	< RL
Di-iso-octyl phthalate (DIOP)	27554-26-3		µg/L	10	10	< RL
1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4		µg/L	10	10	< RL
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	µg/L	10	10	< RL	
Conclusion					--	Comply
					Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Di(ethylhexyl) phthalate (DEHP)	117-81-7	Solvent Extraction GC-MS Analysis, ISO 18856	mg/kg	1	2	< RL
Bis(2-methoxyethyl) phthalate(DMEP)	117-82-8		mg/kg	1	2	< RL
Di-n-octyl phthalate (DNOP)	117-84-0		mg/kg	1	2	< RL

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Di-iso-decyl phthalate (DIDP)	26761-40-0		mg/kg	1	2	< RL
Di-Isononyl Phthalate (DINP)	28553-12-0		mg/kg	1	2	< RL
Di-n-hexyl phthalate (DnHP)	84-75-3		mg/kg	1	2	< RL
Di-n-butyl phthalate (DBP)	84-74-2		mg/kg	1	2	< RL
Butyl benzyl phthalate (BBP)	85-68-7		mg/kg	1	2	< RL
Dinonyl phthalate (DNP)	84-76-4		mg/kg	1	2	< RL
Diethyl phthalate (DEP)	84-66-2		mg/kg	1	2	< RL
Di-n-propyl phthalate (DPRP)	131-16-8		mg/kg	1	2	< RL
Di-isobutyl phthalate (DIBP)	84-69-5		mg/kg	1	2	< RL
Di-cyclohexyl phthalate (DCHP)	84-61-7		mg/kg	1	2	< RL
Di-iso-octyl phthalate (DIOP)	27554-26-3		mg/kg	1	2	< RL
1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP)	68515-42-4		mg/kg	1	2	< RL
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6		mg/kg	1	2	< RL
Conclusion					--	Comply

Abbreviation: < =less than RL =reporting limit

µg/L = microgram per litre

mg/kg = milligram per kilogram

14. 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 8270, Sol. Ext. GC-MS	µg/L	0.2	1	< RL
Anthracene	120-12-7		µg/L	0.2	1	< RL
Pyrene	129-00-0	US EPA 8270, Sol. Ext. GC-MS	µg/L	0.2	1	< RL
Benzo[ghi]perylene	191-24-2		µg/L	0.2	1	< RL
Benzo(e)pyrene	192-97-2		µg/L	0.2	1	< RL
Indeno[1,2,3-cd]pyrene	193-39-5		µg/L	0.2	1	< RL
Benzo(j)fluoranthene	205-82-3		µg/L	0.2	1	< RL
Benzo[b]fluoranthene	205-99-2		µg/L	0.2	1	< RL

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Fluoranthene	206-44-0		µg/L	0.2	1	< RL
Benzo[k]fluoranthene	207-08-9		µg/L	0.2	1	< RL
Acenaphthylene	208-96-8		µg/L	0.2	1	< RL
Chrysene	218-01-9		µg/L	0.2	1	< RL
Dibenz(a,h)anthracene	53-70-3		µg/L	0.2	1	< RL
Benzo[a]anthracene	56-55-3		µg/L	0.2	1	< RL
Acenaphthene	83-32-9		µg/L	0.2	1	< RL
Phenanthrene	85-01-8		µg/L	0.2	1	< RL
Fluorene	86-73-7		µg/L	0.2	1	< RL
Naphthalene	91-20-3		µg/L	0.2	1	< RL
Conclusion					--	Comply
					Sample No.	S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Benzo(a)pyrene	50-32-8	Solvent Extraction GC-MS, US EPA 8270	mg/kg	0.2	0.2	< RL
Anthracene	120-12-7		mg/kg	0.2	0.2	< RL
Pyrene	129-00-0		mg/kg	0.2	0.2	< RL
Benzo[ghi]perylene	191-24-2		mg/kg	0.2	0.2	< RL
Benzo(e)pyrene	192-97-2		mg/kg	0.2	0.2	< RL
Indeno[1,2,3-cd]pyrene	193-39-5		mg/kg	0.2	0.2	< RL
Benzo(j)fluoranthene	205-82-3		mg/kg	0.2	0.2	< RL
Benzo[b]fluoranthene	205-99-2		mg/kg	0.2	0.2	< RL
Fluoranthene	206-44-0		mg/kg	0.2	0.2	< RL
Benzo[k]fluoranthene	207-08-9		mg/kg	0.2	0.2	< RL
Acenaphthylene	208-96-8		mg/kg	0.2	0.2	< RL
Chrysene	218-01-9		mg/kg	0.2	0.2	< RL
Dibenz(a,h)anthracene	53-70-3		mg/kg	0.2	0.2	< RL
Benzo[a]anthracene	56-55-3		mg/kg	0.2	0.2	< RL
Acenaphthene	83-32-9		mg/kg	0.2	0.2	< RL
Phenanthrene	85-01-8		mg/kg	0.2	0.2	< RL
Fluorene	86-73-7		mg/kg	0.2	0.2	< RL
Naphthalene	91-20-3		mg/kg	0.2	0.2	< RL
Conclusion					--	Comply

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

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15.Volatile Organic Compounds (VOC)

Sample No.						R001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Benzene	71-43-2	US EPA 8260, Purge and Trap technique, GC-MS	µg/L	1	1	< RL
Xylene	1330-20-7		µg/L	1	1	< RL
o-cresol	95-48-7		µg/L	1	1	< RL
p-cresol	106-44-5		µg/L	1	1	< RL
m-cresol	108-39-4		µg/L	1	1	< RL
Conclusion					--	Comply
Sample No.						S001
Parameter	Parameter Code	Test Method	Unit	RL	ZDHC Limit	Result
Benzene	71-43-2	Head Space GC-MS, EPA 5021, US EPA 8260	mg/kg	0.5	2	< RL
Xylene	1330-20-7		mg/kg	0.5	2	< RL
o-cresol	95-48-7		mg/kg	0.5	2	< RL
p-cresol	106-44-5		mg/kg	0.5	2	< RL
m-cresol	108-39-4		mg/kg	0.5	2	< RL
Conclusion					--	Comply

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

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16. Anion - Cyanide

				Sample No.	
Parameter	Parameter Code	Test Method	Unit	RL	Result
Anion - Cyanide	57-12-5	EPA-1311	mg/kg	0.5	<RL
Conclusion				--	Comply

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

Remark:

The limits according to ZDHC limit (Table 1A and Table 3 of ZDHC Wastewater Guidelines Version 1.1 issued in July 2019):

Parameter	ZDHC Limit for Wastewater (mg/L)			ZDHC Limit (mg/kg)
	Foundational	Progressive	Aspirational	Sludge
Cyanide	0.2	0.1	0.05	1

17. Dry Mass (Total Solids)

				Sample No.	
Parameter	Parameter Code	Test Method	Unit	RL	Result
Dry Mass (Total Solids)	--	Gravimetric Analysis, based on US EPA 160.3	mg/kg	NA	234
Conclusion				--	Comply

Abbreviation: < =less than
 RL =reporting limit
 mg/L = milligram per litre
 mg/kg = milligram per kilogram
 NA = Not applicable

Remark:

The limit according to ZDHC limit (Table 3 of ZDHC Wastewater Guidelines Version 1.1 issued in July 2019):

Parameter	ZDHC Limit (mg/kg)
	Sludge
Dry Mass (Total Solids)	-

Sampling Point Indication

Sampling Photo

Raw Wastewater



Sludge



Factory Map

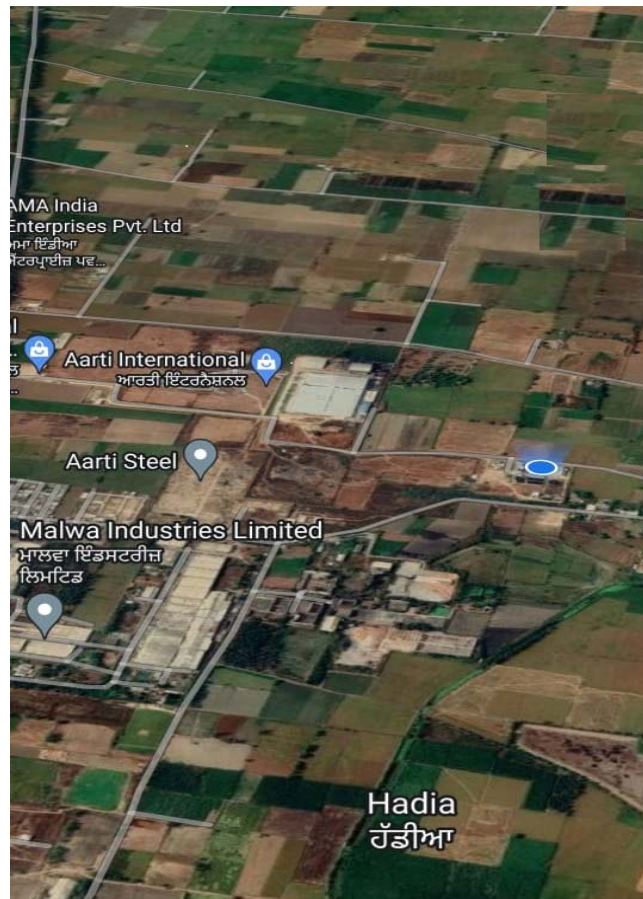


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Sampling Point (Map)



- END -

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General Terms and Conditions - TÜV Rheinland (India) Pvt. Ltd. Laboratory Services

Terms and Conditions:

Costs and expenses included & excluded in the quoted prices. The prices in this quotation are based on the submitted information only and final price may vary after reviewing the actual sample.

General Service Procedures

This quotation is only for testing as per the standards mentioned herein. If any additional standards or requirements are applicable, a revision to this proposal will be provided for acceptance.

For any reason, if the turnaround time as indicated above is not met by customer either due to product failures, testing failures, modification delays etc., TÜV Rheinland (India) Pvt Ltd will charge additional and will invoice for the same.

This quotation does not include testing of safety critical components in case they are not already certified. The above-mentioned quotation includes the test laboratory charges for one cycle of testing.

This quotation does not include re-testing this product in case of failures. The annual charges are subject to periodic revisions. Wherever needed, the client shall provide necessary auxiliary equipment and accessories. Testing will be carried out at TÜV Rheinland (India) Pvt Ltd laboratory or any other TÜV Rheinland (India) Pvt Ltd recognized laboratories.

Testing may involve some destructive tests. Hence TÜV Rheinland (India) Pvt Ltd will not be liable for any damage caused to the product during testing. During testing, it may be necessary to open, dis-assemble, remove components and also conduct chemical analysis from the sample and this must be acceptable to the customer.

This quotation considers one manufacturing location within India. All transportation and logistics related to test samples are to be taken care by the manufacturer.

When Laboratories are booked for Developmental Activities, Maximum of 01 sample is allowed in 04 hours duration and a Maximum of 03 identical samples are allowed in 08 hours duration slot.

All chamber related services (EMC & Environmental), if cancelled with less than clear 2 working days of notice then 50% of cancellation charges are applicable. Any cancellation with less than one clear working day notice attracts 100% charges.

Decision Rule: The laboratory employs simple acceptance rule in making pass or fail decisions on test results with no guard band.

After completion of testing/certification the samples must be collected from the lab within 1 month after defined retention period, failing which TÜV Rheinland (India) Pvt Ltd will not own any responsibility of safeguarding the samples and will be destroyed according to the lab's discretion.

The customers visiting TÜV Rheinland premises must ensure compliance with TÜV Rheinland HSE policies & procedures especially related to Personal Protective Equipment (PPE). Please contact TÜV Rheinland Representative / Business HSE Coordinator to understand the specific HSE Requirements.

General Terms and Conditions:

1. **Scope**
1.1 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.
1.2 If there is any conflict between these terms and conditions and the client's General Terms and Conditions of Business, including the client's Terms and Conditions of purchasing, if any, these terms and conditions shall apply.
No contractual terms and conditions of the client shall form part of the contract unless specifically referred to or incorporated in the documents forming the contract with the client.

2. **Quotations**
Unless otherwise agreed, all quotations submitted by TÜV Rheinland (India) Pvt Ltd shall be subject to change without notice.

3. **Coming into effect and duration of contracts**
3.1 The contract shall come into effect for the agreed term upon the quotation letter of TÜV Rheinland (India) Pvt Ltd or a separate contractual document being signed by both contracting parties, or upon the works requested by the client being carried out by TÜV Rheinland (India) Pvt Ltd. If the client instructs TÜV Rheinland (India) Pvt Ltd without receiving a prior quotation from TÜV Rheinland (India) Pvt Ltd (quotation), TÜV Rheinland (India) Pvt Ltd is # in its sole discretion # entitled to accept the order by giving written notice of such acceptance (including notice sent via electronic means) or by performing the requested services.
3.2 The contract term starts upon the coming into effect of the contract in accordance with clause 3.1 and shall continue for the term agreed in the contract.

4. **Scope of services**
4.1 The scope of the services shall be decided solely by a unanimous declaration issued by both parties. If no such declaration exists, then the written confirmation of order by TÜV Rheinland (India) Pvt Ltd shall be decisive.
4.2 The agreed services shall be performed in compliance with the regulations in force at the time the contract is entered into.
4.3 Furthermore, TÜV Rheinland (India) Pvt Ltd is entitled to determine (in its sole discretion) the method and nature of the assessment unless otherwise agreed in writing or if mandatory provisions require a specific procedure to be followed.
4.4 On execution of the work there shall be no simultaneous assumption of any guarantee of the correctness (proper quality) and working order of either tested or examined parts nor of the installation as a whole and its upstream and/or downstream processes, organizations, use and application in accordance with regulations, nor of the systems on which the installation is based; in particular, no responsibility shall be assumed for the construction, selection of materials and assembly of installations examined, nor for their use and application in accordance with regulations unless these questions are expressly covered by the contract.
4.5 In the case of inspection work, TÜV Rheinland (India) Pvt Ltd 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.

5. Performance period/dates

5.1 The contractually agreed periods and dates of performance are based on estimates of the work involved which are prepared in line with the details provided by the client. They shall only be binding if confirmed as binding by TÜV Rheinland (India) Pvt Ltd in writing.
5.2 If binding periods of performance have been agreed, these periods shall not commence until the client has submitted all required documents to TÜV Rheinland (India) Pvt Ltd. This also applies, even without express approval by the client, to all extensions of agreed dates for performance not caused by TÜV Rheinland (India) Pvt Ltd.

6. The clients 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 (India) Pvt Ltd.
6.2 Design documents, supplies, auxiliary staff, etc. necessary for performance of the services shall be made available free of charge by the client. Moreover, collaborative action of the client must be undertaken in accordance with legal provisions, standards, safety regulations and accident prevention instructions.
6.3 The client shall bear any additional cost incurred on account of work having to be delayed or being delayed as a result of late, incorrect or incomplete information or lack of proper cooperation. Where a fixed or maximum price is agreed, TÜV Rheinland (India) Pvt Ltd shall be entitled to charge extra for such additional expense.

7. Invoicing of work

7.1 If the scope of performance is not laid down in writing when the order is placed, invoicing shall be based on costs incurred. If no payment is agreed in writing, invoicing shall be in accordance with the TÜV Rheinland (India) Pvt Ltd. Price list valid at the time of performance.
7.2 If the execution of an order extends over more than one month and the value of the contract or the agreed fixed price exceeds (2,500.00) converted into Indian Rupees at the prevailing exchange rates TÜV Rheinland (India) Pvt Ltd may demand payments on account or in instalments.

8. Payment terms

8.1 All invoice amounts shall be due for payment on receipt of the invoice, subject only to statutory deductions as per applicable tax laws. No discounts shall be granted.
8.2 For down payment please refer Payment terms in the last page.
8.3 Payments shall be made to the bank account of TÜV Rheinland (India) Pvt Ltd through demand draft payable at Bangalore favouring "TÜV Rheinland (India) Pvt Ltd." You may use our bank connections mentioned below:
Bank Connection:

DEUTSCHE BANK
No. 26-27, Rabeja Towers, M.G. Road, Bangalore
Account No. 2948324-00-6, SWIFT Code: DEUTIN33HAN
IFSC Code: DEUTIN33HAN
HSBC BANK
The Hongkong and Shanghai Banking Corporation Ltd
No. 7, Mahatma Gandhi Road, Bangalore - 560 001
Account No: 072-469329-001, IFSC: HSBC0560002
Swift: HSBCIN28

Note: In the event of RTGS/NEFT payment made to our Account please send the intimation to accounting@ind.tuv.com, else the amount may not be credited to your account.

8.4 In cases of default of payment, TÜV Rheinland (India) Pvt Ltd shall be entitled to claim default interest at a rate of 18% p.a. At the same time, TÜV Rheinland (India) Pvt Ltd reserves the right to claim further damages.

8.5 Should the client default in payment of the invoice despite being granted a reasonable grace period, TÜV Rheinland (India) Pvt Ltd shall be entitled to cancel the contract, without the certificate claim damages for non-performance and reserve to continue performance of the contract. TÜV Rheinland (India) Pvt Ltd also reserves the right to publish the names of defaulting clients in public domain as may be for the benefit of other requirements as prescribed by accreditation agencies/bodies.

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

8.7 Objections to the invoices of TÜV Rheinland (India) Pvt Ltd shall be submitted in writing within two weeks of receipt of the invoice.
8.8 TÜV Rheinland (India) Pvt Ltd shall be entitled to demand appropriate advance payments.

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

8.10 Only legally established and undisputed claims may be offset against claims by TÜV Rheinland (India) Pvt Ltd.

9. Acceptance

9.1 Any part of the work ordered which is complete in itself may be presented by TÜV Rheinland (India) Pvt Ltd for acceptance as an instalment. The client shall be obliged to accept it immediately.
9.2 If the client fails to fulfil its acceptance obligation immediately, acceptance shall be deemed to have taken place 4 calendar weeks after performance of the work (TÜV Rheinland (India) Pvt Ltd has specifically made the client aware of the aforementioned deadline upon performance of the service).

10. Confidentiality

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

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

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

a) May only be used by the receiving party for the purposes of performing the purpose of the contract, unless expressly otherwise agreed in writing with the disclosing party
b) May not be copied, distributed, published or otherwise disclosed by the receiving party unless this is necessary for fulfilling the purpose of the contract
TÜV Rheinland (India) Pvt Ltd, is required to pass on confidential information, inspection reports or documentation to the authorities or third parties that are involved in the performance of the contract.

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

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

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

a) It was generally known at the time of disclosure or has become general knowledge without violation of this agreement.

b) It was disclosed to the receiving party by a third party entitled to disclose this information.

c) It is mandated by law or by an order of the Courts to disclose such information.

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

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

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

11. Copyrights

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

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

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

12. Liability of TÜV Rheinland (India) Pvt Ltd

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

(i) in the case of contract with a fixed overall fee, an amount equal to the overall fee for the entire contract.
(ii) in the case of contracts for annually recurring services, an amount equal to the agreed annual fee.
(iii) in the case of contracts expressly charged on a time and material basis to a maximum of Rs.10,00,000/- (Rupees Ten Lacs only).

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

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

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

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

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

13. Partial invalidity, written form, place of jurisdiction

13.1 No ancillary agreements to this contract have been concluded.

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

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

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

13.5 All claims, disputes, differences, etc., arising out of and/or connected with the contract between TÜV and the client shall be resolved through arbitration to be conducted under the provisions of the

Arbitration and Conciliation Act, 1996. The seat of arbitration shall be Bangalore, India.

The Arbitral Tribunal shall comprise of a Sole Arbitrator to be nominated by the mutual consent of TÜV and the client. The arbitration proceedings shall be conducted in the English language only.

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

Payment Terms: A down payment of 100% of the quoted amount shall be paid before the commencement of the project/order.

For TÜV Rheinland (India) Pvt. Ltd.

Managing Director


TÜVRheinland®
 Precisely Right.