# TEST REPORT

**Technical Report:** **(6821)102-0294** April 24, 2021



| | |
|---|---|
| Date Received: | April 11, 2021 |
| Factory Company Name： | Masco Industries Ltd. |
| Factory Address: | 221-223, Khartail, Shataish Road, Tongi, Gazipur, Bangladesh. |
| Client Reference No.: | Self |
| Sample Method: | I001) Raw Wastewater – 6 hours Time – weighted Composite<br>I002) Treated Wastewater – 6 hours Time – weighted Composite |
| Sample Pick Up Date: | April 11, 2021 |
| Discharge Type: | Direct Discharge |
| On-Site Effluent Treatment Plant (ETP): | Yes |
| Wastewater Discharge to: | Turag River |
| Off-site ETP name (if applicable): | Not Applicable |
| Off-site ETP address (if applicable): | Not Applicable |
| Test Period: | April 12, 2021 To April 24, 2021 |
| Sample Description: | I001) Brown / blue color liquid - Raw Wastewater<br>I002) Brown color liquid - Treated Wastewater |

**REMARK**

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

| | |
|---|---|
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| Technical enquiry-Chemical | Mr. M. Nur Alam, Mail: nur.alam@bureauveritas.com |

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

* The sampling is agreed with client.

**BUREAU VERITAS**
**CONSUMER PRODUCTS SERVICES ( BANGLADESH ) LTD.**

**M. NUR ALAM**
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## Executive Summary

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

Note / Key:

- ☐ – Meet Foundational Limit / Meet discharge License Criteria
- ■ – Exceeding Foundational Limit / Exceeding discharge License Criteria
- NR – Not Requested / Not required

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

Note / Key :

- ● – Detected
- o – Not Detected
- NR – Not Requested / Not required

## Objective

The environment samples were tested for below parameters.

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

## Sampling Procedure

Total number of sample collected is based on the actual factory facilities and manufacturing processes. Two environment samples were sampled per factory, 1) Raw Wastewater and 2) Treated Wastewater.

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

Remark :

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

## Test Result

### 1A) Conventional Parameters

Temperature

**Test Method** : Measurement by thermometer

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 33.9<br>(Foundational) | deg. C | DATA |

Note:

deg. C = degree Celsius (°C)
Foundational Limit: ▲15 / max. 35°C; Progressive Limit: ▲10 / max. 30°C; Aspirational Limit: ▲5 / max. 25°C

Total Suspended Solids (TSS)

**Test Method** : Reference to ALPA 2540D, GB 11901, ISO 11923

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 5<br>(Aspirational) | mg/L | DATA |

Note:

mg/L = milligram per liter
Foundational Limit: 50 mg/L; Progressive Limit: 15 mg/L; Aspirational Limit: 5 mg/L

Chemical Oxygen Demand (COD)

**Test Method** : Reference to ALPA 5220B & EPA 410.3, HJ 828

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 65<br>(Progressive) | mg/L | DATA |

Note:

mg/L = milligram per liter
Foundational Limit: 150 mg/L; Progressive Limit: 80 mg/L; Aspirational Limit: 40 mg/L

Total Nitrogen (Total-N)

**Test Method** : Reference to APHA 4500- N-C

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 3.4<br>(Aspirational) | mg/L | DATA |

Note:

mg/L = milligram per liter
Foundational Limit: 20 mg/L; Progressive Limit: 10 mg/L; Aspirational Limit: 5 mg/L

pH Value

**Test Method** : Reference to ISO 10523, EPA 150.2 and APHA 4500-$H^+$

| - | Unit | Result |
|---|---|---|
| **Test Item(s)** | - | I002 |
| **Parameter** | - | - |
| Temp. of sample | deg. C | 21.6 |
| pH value of sample | - | 7.9<br>(Comply with ZDHC WWG requirements) |
| **Conclusion** | - | DATA |

Note:

Temp. = Temperature deg. C = degree Celsius (°C)
Limit: 6 - 9

Color [$m^{-1}$] (436nm; 525nm; 620nm)

**Test Method** : ISO 7887: 2011(E), B

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 5.1; 3.9; 2.6<br>(Foundational) | $m^{-1}$ | DATA |

Note:
Foundational Limit: 7;5;3 $m^{-1}$; Progressive Limit: 5;3;2 $m^{-1}$; Aspirational Limit: 2;1;1 $m^{-1}$

Biochemical Oxygen Demand ($BOD_5$)

**Test Method** : Reference to APHA 5210B (5 days)

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 19<br>(Foundational) | mg/L | DATA |

Note:
mg/L = milligram per liter
Foundational Limit: 30 mg/L; Progressive Limit: 15 mg/L; Aspirational Limit: 5 mg/L

Ammonium Nitrogen

**Test Method** : Reference to APHA 4500-$NH_3$ – B & F 22nd Edition 2012

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 0.46<br>(Aspirational) | mg/L | DATA |

Note:

mg/L = milligram per liter
Foundational Limit: 10 mg/L; Progressive Limit: 1 mg/L; Aspirational Limit: 0.5 mg/L

Total Phosphorus (Total-P)

**Test Method** : Reference to APHA 22nd Edition -4500-P.E (2012)

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 0.19<br>(Progressive) | mg/L | DATA |

Note:

mg/L = milligram per liter
Foundational Limit: 3 mg/L; Progressive Limit: 0.5 mg/L; Aspirational Limit: 0.1 mg/L

Adsorbable Organic Halogen (AOX)

**Test Method** : Reference to IHM - TTI/A-98 (Based on ISO 9562)

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 0.65<br>(Progressive) | mg/L | DATA |

Note:

mg/L = milligram per liter
Foundational Limit: 5 mg/L; Progressive Limit: 1 mg/L; Aspirational Limit: 0.1 mg/L

Oil and Grease

**Test Method** : Reference to EPA 1664B, APHA-5520 B and F

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 0.8<br>(Progressive) | mg/L | DATA |

Note:

mg/L = milligram per liter
Foundational Limit: 10 mg/L; Progressive Limit: 2 mg/L; Aspirational Limit: 0.5 mg/L

Phenol

**Test Method** : APHA 5530 C

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 0.001<br>(Aspirational) | mg/L | DATA |

Note:

mg/L = milligram per liter

Foundational Limit: 0.5 mg/L; Progressive Limit: 0.01 mg/L; Aspirational Limit: 0.001 mg/L

Coliform

**Test Method** : Reference to ISO 9308-1: 2014

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | <1<br>(Aspirational) | Bacteria /<br>100 mL | DATA |

Note:

bacteria/100 mL = bacteria per 100 milliliters
Foundational Limit: 400 / 100 ml; Progressive Limit: 100 / 100 ml; Aspirational Limit: 25 / 100 ml;

Persistent Foam

**Test Method** : Visual

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | No Foam<br>(Comply with ZDHC WWG requirements) | - | DATA |

ANIONS - Cyanide

**Test Method** : Reference to APHA 22nd Edition-4500-CN. C&E (2012), EPA 9010C, 9013 & 9014

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | ND<br>(Aspirational) | mg/L | DATA |

Note:

mg/L = milligram per liter ND = Not Detected
Foundational Limit: 0.2 mg/L; Progressive Limit: 0.1 mg/L; Aspirational Limit: 0.05 mg/L

ANIONS - Sulfide

**Test Method** : Reference to APHA 4500-$S^{2-}$D

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | <0.1<br>(Foundational) | mg/L | DATA |

Note:

mg/L = milligram per liter
Foundational Limit: 0.5 mg/L; Progressive Limit: 0.05 mg/L; Aspirational Limit: 0.01 mg/L

ANIONS - Sulfite

**Test Method** : Reference to EPA 377.1, APHA 4500-$SO_3^{2-}$ (2012)

| Tested Item(s) | Result | Unit | Conclusion |
|---|---|---|---|
| I002 | 0.5<br>(Progressive) | mg/L | DATA |

Note:

mg/L = milligram per liter
Foundational Limit: 2 mg/L; Progressive Limit: 0.5 mg/L; Aspirational Limit: 0.2 mg/L

1B) Conventional Parameters – METALS

| **Heavy Metals** | **I001** ***(mg/L)*** | **I002** ***(mg/L)*** |
|---|---|---|
| Antimony( Sb )<br>*Foundational Limit: 0.1 mg/L;*<br>*Progressive Limit: 0.05 mg/L;*<br>*Aspirational Limit: 0.01 mg/L* | ND<br>(Aspirational) | ND<br>(Aspirational) |
| Chromium( Cr ), total<br>*Foundational Limit: 0.2 mg/L;*<br>*Progressive Limit: 0.1 mg/L;*<br>*Aspirational Limit: 0.05 mg/L* | 0.003<br>(Aspirational) | ND<br>(Aspirational) |
| Cobalt( Co )<br>*Foundational Limit:0.05 mg/L;*<br>*Progressive Limit: 0.02 mg/L;*<br>*Aspirational Limit: 0.01 mg/L* | ND<br>(Aspirational) | ND<br>(Aspirational) |
| Copper( Cu )<br>*Foundational Limit: 1 mg/L;*<br>*Progressive Limit: 0.5 mg/L;*<br>*Aspirational Limit: 0.25 mg/L* | 0.022<br>(Aspirational) | ND<br>(Aspirational) |
| Nickel (Ni)<br>*Foundational Limit:.0.2 mg/L;*<br>*Progressive Limit: 0.1 mg/L;*<br>*Aspirational Limit: 0.05 mg/L* | 0.002<br>(Aspirational) | 0.004<br>(Aspirational) |
| Silver (Ag)<br>*Foundational Limit: 0.1 mg/L;*<br>*Progressive Limit: 0.05 mg/L;*<br>*Aspirational Limit: 0.005 mg/L* | ND<br>(Aspirational) | ND<br>(Aspirational) |
| Zinc( Zn )<br>*Foundational Limit: 5 mg/L;*<br>*Progressive Limit: 1 mg/L;*<br>*Aspirational Limit: 0.5 mg/L* | 0.454<br>(Aspirational) | 0.012<br>(Aspirational) |
| Arsenic (As)<br>*Foundational Limit: 0.05 mg/L;*<br>*Progressive Limit: 0.01 mg/L;*<br>*Aspirational Limit: 0.005 mg/L* | ND<br>(Aspirational) | 0.003<br>(Aspirational) |
| Cadmium( Cd )<br>*Foundational Limit: 0.1 mg/L;*<br>*Progressive Limit: 0.05 mg/L;*<br>*Aspirational Limit: 0.01 mg/L* | ND<br>(Aspirational) | ND<br>(Aspirational) |
| Lead( Pb )<br>*Foundational Limit:0.1 mg/L;*<br>*Progressive Limit: 0.05 mg/L;*<br>*Aspirational Limit: 0.01 mg/L* | 0.002<br>(Aspirational) | ND<br>(Aspirational) |
| Mercury (Hg)<br>*Foundational Limit: 0.01 mg/L;*<br>*Progressive Limit: 0.005 mg/L;*<br>*Aspirational Limit :0.001 mg/L* | ND<br>(Aspirational) | ND<br>(Aspirational) |
| Chromium VI( CrVI )<br>*Foundational Limit: 0.05 mg/L;*<br>*Progressive Limit: 0.005 mg/L;*<br>*Aspirational Limit: 0.001 mg/L* | ND<br>(Aspirational) | ND<br>(Aspirational) |

Others Priority Chemical Groups

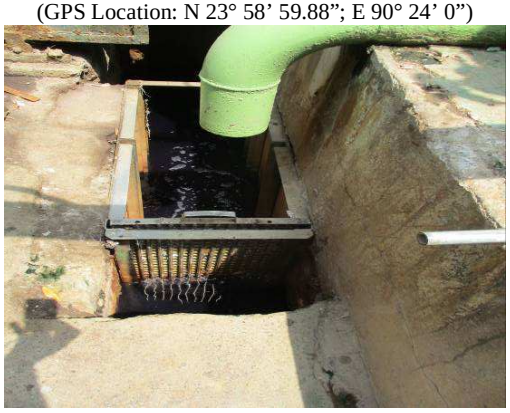
| | **I001** ***(µg/L)*** | **I002** ***(µg/L)*** |
|---|---|---|
| 2A) APs and APEOs | ND | ND |
| 2B) Chlorobenzenes and Chlorotoluenes | ND | ND |
| 2C) Chlorophenols | ND | ND |
| 2D) Azo Dyes | ND | ND |
| 2E) Carcinogenic Dyes | ND | ND |
| 2F) Disperse Dyes | ND | ND |
| 2G) Flame Retardants |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

Remark：

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

## APPENDIX A - Photo of the Sample/ Sampling Location

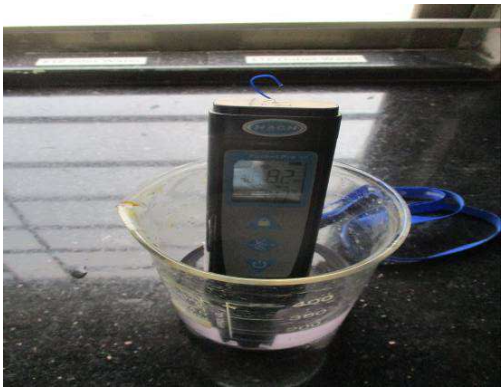
I001) Sampling Point
(GPS Location: N 23° 58’ 59.88”; E 90° 24’ 0”)



I001) Sampling Point Surrounding Environment
(GPS Location: N 23° 58’ 59.88”; E 90° 24’ 0”)

I001) All sampled bottles with label

I001) pH value



I001) Sample for Phthalate Testing

I001) Packaging

## APPENDIX A - Photo of the Sample/ Sampling Location

I002) Sampling Point
(GPS Location: N 23° 58’ 59.88”; E 90° 24’ 0”)

I002) Sampling Point Surrounding Environment
(GPS Location: N 23° 58’ 59.88”; E 90° 24’ 0”)

I002) All sampled bottles with label

I002) pH value


I002) Sample for Phthalate Testing

I002) Packaging

## APPENDIX B

| Group | Substance (Testing parameter) | CAS No. | Report Limit | | Name of the testing method |
|---|---|---|---|---|---|
| | | | Wastewater (ug/L)/(ppb) | Sludge (mg/kg)/(ppm) | |
| 2A. Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers | Nonylphenol NP, mixed isomers | Various (incl. 104-40-5, 11066-49-2, 25154-52-3, 84852-15-3) | 5 | 0.4 | NP/OP: ISO 18857-2 (modified dichloromethane extraction) or ASTM D7065 (GC/MS or LC/MS(-MS)<br><br>OPEO/NPEO: ISO18857-2 or ASTM D7065(LC/MS; GC/MS or LC/MSMS for n=1,2)<br><br>APEO 1-18 |
| | Octylphenol OP, mixed isomers | Various (incl. 140-66-9, 1806-26-4, 27193-28-8) | 5 | 0.4 | |
| | Octylphenol ethoxylates (OPEO) | Various (incl. 9002-93-1, 9036-19-5, 68987-90-6) | 5 | 0.4 | |
| | Nonylphenol ethoxylates (NPEO) | Various (inc. 9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0) | 5 | 0.4 | |
| 2B. Chlorobenzenes and Chlorotoluenes | Monochlorobenzene | 108-90-7 | 0.2 | 0.2 | USEPA 8260B,8270D. Dichloromethane extraction followed by GC/MS |
| | 1,2-Dichlorobenzene | 95-50-1 | 0.2 | 0.2 | |
| | 1,3-Dichlorobenzene | 541-73-1 | 0.2 | 0.2 | |
| | 1,4-Dichlorobenzene | 106-46-7 | 0.2 | 0.2 | |
| | 1,2,3-Trichlorobenzene | 87-61-6 | 0.2 | 0.2 | |
| | 1,2,4-Trichlorobenzene | 120-82-1 | 0.2 | 0.2 | |
| | 1,3,5-Trichlorobenzene | 108-70-3 | 0.2 | 0.2 | |
| | 1,2,3,4-Tetrachlorobenzene | 634-66-2 | 0.2 | 0.2 | |
| | 1,2,3,5-Tetraclorobenzene | 634-90-2 | 0.2 | 0.2 | |
| | 1,2,4,5-Tetrachlorobenzene | 95-94-3 | 0.2 | 0.2 | |
| | Pentachlorobenzene | 608-93-5 | 0.2 | 0.2 | |
| | Hexachlorobenzene | 118-74-1 | 0.2 | 0.2 | |
| | 2-Chlorotoluene | 95-49-8 | 0.2 | 0.2 | |
| | 3-Chlorotoluene | 108-41-8 | 0.2 | 0.2 | |
| | 4-Chlorotoluene | 106-43-4 | 0.2 | 0.2 | |
| | 2,3-Dichlorotoluene | 32768-54-0 | 0.2 | 0.2 | |
| | 2,4-Dichlorotoluene | 95-73-8 | 0.2 | 0.2 | |
| | 2,5-Dichlorotoluene | 19398-61-9 | 0.2 | 0.2 | |
| | 2,6-Dichlorotoluene | 118-69-4 | 0.2 | 0.2 | |
| | 3,4-Dichlorotoluene | 95-75-0 | 0.2 | 0.2 | |
| | 3,5-Dichlorotoluene | 25186-47-4 | 0.2 | 0.2 | |
| | 2,3,4-Trichlorotoluene | 7359-72-0 | 0.2 | 0.2 | |
| | 2,3,6-Trichlorotoluene | 2077-46-5 | 0.2 | 0.2 | |
| | 2,4,5-Trichlorotoluene | 6639-30-1 | 0.2 | 0.2 | |
| | 2,4,6-Trichlorotoluene | 23749-65-7 | 0.2 | 0.2 | |
| | 3,4,5-Trichlorotoluene | 21472-86-6 | 0.2 | 0.2 | |
| | 2,3,4,5-Tetrachlorotoluene | 76057-12-0 | 0.2 | 0.2 | |
| | 2,3,5,6-Tetrachlorotoluene | 29733-70-8 | 0.2 | 0.2 | |
| | 2,3,4,6-Tetrachlorotoluene | 875-40-1 | 0.2 | 0.2 | |
| | Pentachlorotoluene | 877-11-2 | 0.2 | 0.2 | |
| 2C. Chlorophenols | 2-Chlorophenol | 95-57-8 | 0.5 | 0.05 | USEPA 8270 D Solvent extraction, |
| | 3-Chlorophenol | 108-43-0 | 0.5 | 0.05 | |

| Group | Substance (Testing parameter) | CAS No. | Report Limit | | Name of the testing method |
|---|---|---|---|---|---|
| | | | Wastewater (ug/L)/(ppb) | Sludge (mg/kg)/(ppm) | |
| | 4-Chlorophenol | 106-48-9 | 0.5 | 0.05 | derivatisation with KOH, acetic anhydride followed by GC/MS |
| | 2,3-Dichlorophenol | 576-24-9 | 0.5 | 0.05 | |
| | 2,4-Dichlorophenol | 120-83-2 | 0.5 | 0.05 | |
| | 2,5-Dichlorophenol | 583-78-8 | 0.5 | 0.05 | |
| | 2,6-Dichlorophenol | 87-65-0 | 0.5 | 0.05 | |
| | 3,4-Dichlorophenol | 95-77-2 | 0.5 | 0.05 | |
| | 3,5-Dichlorophenol | 591-35-5 | 0.5 | 0.05 | |
| | 2,3,4-Trichlorophenol | 15950-66-0 | 0.5 | 0.05 | |
| | 2,3,5-Trichlorophenol | 933-78-8 | 0.5 | 0.05 | |
| | 2,3,6-Trichlorophenol | 933-75-5 | 0.5 | 0.05 | |
| | 2,4,5-Trichlorophenol | 95-95-4 | 0.5 | 0.05 | |
| | 2,4,6-Trichlorophenol | 88-06-2 | 0.5 | 0.05 | |
| | 3,4,5-Trichlorophenol | 609-19-8 | 0.5 | 0.05 | |
| | 2,3,4,5-Tetrachlorophenol | 4901-51-3 | 0.5 | 0.05 | |
| | 2,3,4,6-Tetrachlorophenol | 58-90-2 | 0.5 | 0.05 | |
| | 2,3,5,6-Tetrachlorophenol | 935-95-5 | 0.5 | 0.05 | |
| | Pentachlorophenol (PCP) | 87-86-5 | 0.5 | 0.05 | |
| 2D. Dyes - Azo (Forming Restricted Amines) | 4,4`-Methylene-bis-(2-chloro-aniline) | 101-14-4 | 0.1 | 0.2 | EN 14362. Reduction step with Sodiumdithionite, solvent extraction, GC/MS or LC/MS |
| | 4,4'-methylenedianiline | 101-77-9 | 0.1 | 0.2 | |
| | 4,4`-Oxydianiline | 101-80-4 | 0.1 | 0.2 | |
| | 4-Chloroaniline | 106-47-8 | 0.1 | 0.2 | |
| | 3,3`-Dimethoxybenzidine | 119-90-4 | 0.1 | 0.2 | |
| | 3,3`-Dimethylbenzidine | 119-93-7 | 0.1 | 0.2 | |
| | 6-methoxy-m-toluidine (p-Cresidine) | 120-71-8 | 0.1 | 0.2 | |
| | 2,4,5-Trimethylaniline | 137-17-7 | 0.1 | 0.2 | |
| | 4,4`-Thiodianiline | 139-65-1 | 0.1 | 0.2 | |
| | 4-Aminoazobenzene | 60-09-3 | 0.1 | 0.2 | |
| | 4-Methoxy-m-phenylenediamine | 615-05-4 | 0.1 | 0.2 | |
| | 4,4`-Methylene-di-o-toluidine | 838-88-0 | 0.1 | 0.2 | |
| | 2,6-Xylidine | 87-62-7 | 0.1 | 0.2 | |
| | o-Anisidine | 90-04-0 | 0.1 | 0.2 | |
| | 2-Naphthylamine | 91-59-8 | 0.1 | 0.2 | |
| | 3,3`-Dichlorobenzidine | 91-94-1 | 0.1 | 0.2 | |
| | 4-Aminodiphenyl | 92-67-1 | 0.1 | 0.2 | |
| | Benzidine | 92-87-5 | 0.1 | 0.2 | |
| | o-Toluidine | 95-53-4 | 0.1 | 0.2 | |
| | 2,4-Xylidine | 95-68-1 | 0.1 | 0.2 | |
| | 4-Chloro-o-toluidine | 95-69-2 | 0.1 | 0.2 | |
| | 4-Methyl-m-phenylenediamine | 95-80-7 | 0.1 | 0.2 | |
| | o-Aminoazotoluene | 97-56-3 | 0.1 | 0.2 | |
| | 5-nitro-o-toluidine | 99-55-8 | 0.1 | 0.2 | |
| 2E. Dyes-Carcionogenic or Equivalent Concern | C.I. Direct Black 38 | 1937-37-7 | 500 | 10 | Liquid Extraction LC/MS |
| | C.I. Direct Blue 6 | 2602-46-2 | 500 | 10 | |
| | C.I. Acid Red 26 | 3761-53-3 | 500 | 10 | |
| | C.I. Basic Red 9 | 569-61-9 | 500 | 10 | |
| | C.I. Direct Red 28 | 573-58-0 | 500 | 10 | |
| | C.I. Basic Violet 14 | 632-99-5 | 500 | 10 | |
| | C.I. Disperse Blue 1 | 2475-45-8 | 500 | 10 | |

| Group | Substance (Testing parameter) | CAS No. | Report Limit | | Name of the testing method |
|---|---|---|---|---|---|
| | | | Wastewater (ug/L)/(ppb) | Sludge (mg/kg)/(ppm) | |
| | C.I. Disperse Blue 3 | 2475-46-9 | 500 | 10 | |
| | C.I. Basic Blue 26 (with Michler's Ketone > 0.1%) | 2580-56-5 | 500 | 10 | |
| | C.I. Basic Green 4 (malachite green chloride) | 569-64-2 | 500 | 10 | |
| | C.I. Basic Green 4 (malachite green oxalate) | 2437-29-8 | 500 | 10 | |
| | C.I. Basic Green 4(malachite green) | 10309-95-2 | 500 | 10 | |
| | Disperse Orange 11 | 82-28-0 | 500 | 10 | |
| 2F. Dyes-disperse (sensitizing) | Disperse Yellow 1 | 119-15-3 | 50 | 2 | Liquid Extraction LC/MS |
| | Disperse Blue 102 | 12222-97-8 | 50 | 2 | |
| | Disperse Blue 106 | 12223-01-7 | 50 | 2 | |
| | Disperse Yellow 39 | 12236-29-2 | 50 | 2 | |
| | Disperse Orange 37/59/76 | 13301-61-6 | 50 | 2 | |
| | Disperse Brown 1 | 23355-64-8 | 50 | 2 | |
| | Disperse Orange 1 | 2581-69-3 | 50 | 2 | |
| | Disperse Yellow 3 | 2832-40-8 | 50 | 2 | |
| | Disperse Red 11 | 2872-48-2 | 50 | 2 | |
| | Disperse Red 1 | 2872-52-8 | 50 | 2 | |
| | Disperse Red 17 | 3179-89-3 | 50 | 2 | |
| | Disperse Blue 7 | 3179-90-6 | 50 | 2 | |
| | Disperse Blue 26 | 3860-63-7 | 50 | 2 | |
| | Disperse Yellow 49 | 54824-37-2 | 50 | 2 | |
| | Disperse Blue 35 | 12222-75-2 | 50 | 2 | |
| | Disperse Blue 124 | 61951-51-7 | 50 | 2 | |
| | Disperse Yellow 9 | 6373-73-5 | 50 | 2 | |
| | Disperse Orange 3 | 730-40-5 | 50 | 2 | |
| | Disperse Blue 35 | 56524-77-7 | 50 | 2 | |
| 2G. Flame Retardants | Tris(2-chloroethyl) phosphate (TCEP) | 115-96-8 | 5 | 1 | ISO 22032, USEPA527 and USEPA8321B. Dichloromethane extraction GC/MS or LC/MS(-MS) |
| | Decabromodiphenyl ether (DecaBDE) | 1163-19-5 | 5 | 1 | |
| | Tris(2,3-dibromopropyl) phosphate (TRIS/TDBPP) | 126-72-7 | 5 | 1 | |
| | Pentabromodiphenyl ether (PentaBDE) | 32534-81-9 | 5 | 1 | |
| | Octabromodiphenyl ether (OctaBDE) | 32536-52-0 | 5 | 1 | |
| | Bis(2,3-dibromopropyl) phosphate (BIS/BDBPP) | 5412-25-9 | 5 | 1 | |
| | Tris(aziridinyl)-phosphineoxide (TEPA) | 545-55-1 | 5 | 1 | |
| | Polybromobiphenyls (PBBs) | 59536-65-1 | 5 | 1 | |
| | Tetrabromobisphenol A (TBBPA) | 79-94-7 | 5 | 1 | |
| | Hexabromocyclododecane (HBCDD) | 3194-55-6 | 5 | 1 | |
| | 2,2-Bis(bromomethyl)-1,3-propanediol (BBMP) | 3296-90-0 | 5 | 1 | |
| | Tris(1,3-dichloro-isopropyl) phosphate (TDCP) | 13674-87-8 | 5 | 1 | |

| Group | Substance (Testing parameter) | CAS No. | Report Limit | | Name of the testing method |
|---|---|---|---|---|---|
| | | | Wastewater (ug/L)/(ppb) | Sludge (mg/kg)/(ppm) | |
| | Short chain chlorinated paraffins (SCCPs) (C10-C13) | 85535-84-8 | 5 | 1 | |
| 2H. Glycols | Bis(2-methoxyethyl)-ether | 111-96-6 | 50 | 10 | US EPA 8270 Liquid Extraction LC/MS |
| | 2-ethoxyethanol | 110-80-5 | 50 | 10 | |
| | 2-ethoxyethyl acetate | 111-15-9 | 50 | 10 | |
| | Ethylene glycol dimethyl ether | 110-71-4 | 50 | 10 | |
| | 2-methoxyethanol | 109-86-4 | 50 | 10 | |
| | 2-methoxyethylacetate | 110-49-6 | 50 | 10 | |
| | 2-methoxypropylacetate | 70657-70-4 | 50 | 10 | |
| | Triethylene glycol dimethyl ether | 112-49-2 | 50 | 10 | |
| 2I. Halogenated Solvents | 1,2-Dichloroethane | 107-06-2 | 1 | 2 | USEPA 8260B Headspace GC/MS or Purgeand-Trap-GC/MS |
| | Methylene Chloride | 75-09-2 | 1 | 2 | |
| | Trichloroethylene | 79-01-6 | 1 | 2 | |
| | Tetrachloroethylene | 127-18-4 | 1 | 2 | |
| 2J. Organotin Compounds | Mono-, di- and tri-methyltin derivatives | Multiple | 0.01 | 0.2 | ISO 17353 Derivatisation with NaB(C2H5) GC/MS |
| | Mono-, di- and tri-butyltin derivatives | Multiple | 0.01 | 0.2 | |
| | Mono-, di- and tri-phenyltin derivatives | Multiple | 0.01 | 0.2 | |
| | Mono-, di- and tri-octyltin derivatives | Multiple | 0.01 | 0.2 | |
| 2K. Perfluorinated and Polyfluorinated Chemicals (PFCs) | Perfluorooctanesulfonic acid (PFOS) | 1763-23-1 | 0.01 | 0.10 | DIN 38407-42 (modified) Ionic PFC: Concentration or direct injection, LC/MS(-MS); Non-ionic PFC (FTOH): derivatisation with acetic anhydride, followed by GC/MS |
| | Perfluoro-n-octanoic acid (PFOA) | 335-67-1 | 0.01 | 0.10 | |
| | Perfluorobutanesulfonic acid (PFBS) | 29420-49-3, 29420-43-3 | 0.01 | 0.10 | |
| | Perfluoro-n-hexanoic acid (PFHxA) | 307-24-4 | 0.01 | 0.10 | |
| | 8:2 FTOH | 678-39-7 | 1 | 1 | |
| | 6:2 FTOH | 647-42-7 | 1 | 1 | |
| 2L. Phthalates (including all other esthers of phthalic acid) | Di-2-ethylhexyl phthalate (DEHP) | 117-81-7 | 10 | 2 | US EPA 8270D, ISO 18856 Dichloromethane extraction GC/MS |
| | Dimethoxyethyl phthalate (DMEP) | 117-82-8 | 10 | 2 | |
| | Di-n-octyl phthalate (DNOP) | 117-84-0 | 10 | 2 | |
| | Di-iso-decyl phthalate (DIDP) | 26761-40-0 | 10 | 2 | |
| | Di-iso-nonyl phthalate (DINP) | 28553-12-0 | 10 | 2 | |
| | Di-n-hexyl phthalate (DnHP) | 84-75-3 | 10 | 2 | |
| | Dibutyl phthalate (DBP) | 84-74-2 | 10 | 2 | |
| | Butyl benzyl phthalate (BBP) | 85-68-7 | 10 | 2 | |
| | Dinonyl phthalate (DNP) | 84-76-4 | 10 | 2 | |
| | Diethyl phthalate (DEP) | 84-66-2 | 10 | 2 | |
| | Di-n-propyl phthalate (DPRP) | 131-16-8 | 10 | 2 | |

| Group | Substance (Testing parameter) | CAS No. | Report Limit | | Name of the testing method |
|---|---|---|---|---|---|
| | | | Wastewater (ug/L)/(ppb) | Sludge (mg/kg)/(ppm) | |
| | Di-iso-butyl phthalate (DIBP) | 84-69-5 | 10 | 2 | |
| | Di-cyclohexyl phthalate (DCHP) | 84-61-7 | 10 | 2 | |
| | Di-iso-octyl phthalate (DIOP) | 27554-26-3 | 10 | 2 | |
| | 1,2-benzenedicarboxylic acid, di-C7-11-branched and linearalkyl esters (DHNUP) | 68515-42-4 | 10 | 2 | |
| | 1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) | 71888-89-6 | 10 | 2 | |
| 2M. Poly Aromatic Hydrocarbons (PaHs) | Benzo[a]pyrene (BaP) | 50-32-8 | 1 | 0.2 | DIN 38407-39 Solvent extraction GC/MS |
| | Anthracene | 120-12-7 | 1 | 0.2 | |
| | Pyrene | 129-00-0 | 1 | 0.2 | |
| | Benzo[ghi]perylene | 191-24-2 | 1 | 0.2 | |
| | Benzo[e]pyrene | 192-97-2 | 1 | 0.2 | |
| | Indeno[1,2,3-cd]pyrene | 193-39-5 | 1 | 0.2 | |
| | Benzo[j]fluoranthene | 205-82-3 | 1 | 0.2 | |
| | Benzo[b]fluoranthene | 205-99-2 | 1 | 0.2 | |
| | Fluoranthene | 206-44-0 | 1 | 0.2 | |
| | Benzo[k]fluoranthene | 207-08-9 | 1 | 0.2 | |
| | Acenaphthylene | 208-96-8 | 1 | 0.2 | |
| | Chrysene | 218-01-9 | 1 | 0.2 | |
| | Dibenz[a,h]anthracene | 53-70-3 | 1 | 0.2 | |
| | Benzo[a]anthracene | 56-55-3 | 1 | 0.2 | |
| | Acenaphthene | 83-32-9 | 1 | 0.2 | |
| | Phenanthrene | 85-01-8 | 1 | 0.2 | |
| | Fluorene | 86-73-7 | 1 | 0.2 | |
| | Naphthalene | 91-20-3 | 1 | 0.2 | |
| 2N. Volatile Organic Compound (VOCs) | Benzene | 71-43-2 | 1 | 2 | ISO 11423-1 Headspace- or Purge-and-Trap-GC/MS |
| | Xylene | 1330-20-7 | 1 | 2 | |
| | o-cresol | 95-48-7 | 1 | 2 | |
| | p-cresol | 106-44-5 | 1 | 2 | |
| | m-cresol | 108-39-4 | 1 | 2 | |
| | | | | | |
| 1A. Conventional Parameters | Temperature | — | N/A | N/A | Apply the standard methods that best apply to the region (ISO, EU, US, China), please refer to ZDHC Wastewater Guidelines for more details on the testing method and the levels (Foundational, Progressive, and Aspirational).<br><br>Cyanide: With reference to APHA 4500 CN—B,C&E and |
| | TSS | — | N/A | N/A | |
| | COD | — | N/A | N/A | |
| | Total-N | — | N/A | N/A | |
| | pH | — | N/A | N/A | |
| | Color [$m^{-1}$] (436nm; 525nm; 620nm) | — | N/A | N/A | |
| | BOD5 | — | N/A | N/A | |
| | Ammonium-N | — | N/A | N/A | |
| | Total-P | — | N/A | N/A | |
| | AoX | — | N/A | N/A | |
| | Oil and Grease | — | N/A | N/A | |
| | Phenol | — | N/A | N/A | |
| | Coliform(bacteria/100ml) | — | N/A | N/A | |
| | Persistent Foam | — | Not | Not | |

| Group | Substance (Testing parameter) | CAS No. | Report Limit | | Name of the testing method |
|---|---|---|---|---|---|
| | | | Wastewater (ug/L)/(ppb) | Sludge (mg/kg) /(ppm) | |
| | | | visible | visible | followed by UV analysis |
| | **ANIONS** | | | | |
| | Cyanide( CN-) | Various (incl. 57-12-5) | 0.02 | 1 | |
| | Sulfide | – | N/A | N/A | |
| | Sulfite | – | N/A | N/A | |
| Group | Substance (Testing parameter) | CAS No. | Report Limit | | Name of the testing method |
| | | | Wastewater (mg/L) / (ppm) | Sludge (mg/kg) / (ppm) | |
| 1B. Conventional Parameters - **METALS** | Antimony( Sb ) | 7440-36-0 | 0.001 | N/A | Various Acid Digestion with ICP analysis<br><br>please refer to ZDHC Wastewater Guidelines for more details on the testing method and the levels (Foundational, Progressive, and Aspirational).<br><br>Cr(VI): Various Solvent extraction and derivatisation followed by UV analysis |
| | Chromium( Cr ), total | 7440-47-3 | 0.001 | N/A | |
| | Cobalt( Co ) | 7440-48-4 | 0.001 | N/A | |
| | Copper( Cu ) | 7440-50-8 | 0.001 | N/A | |
| | Nickel (Ni) | 7440-02-0 | 0.001 | N/A | |
| | Silver (Ag) | 7440-22-4 | 0.001 | N/A | |
| | Zinc( Zn ) | 7440-66-6 | 0.001 | N/A | |
| | Arsenic (As) | 7440-38-2 | 0.001 | 2 | |
| | Cadmium( Cd ) | 7440-43-9 | 0.0001 | 2 | |
| | Chromium VI( CrVI ) | 18540-29-9 | 0.001 | 2 | |
| | Lead( Pb ) | 7439-92-1 | 0.001 | 2 | |
| | Mercury (Hg) | 7439-97-6 | 0.00005 | 0.2 | |
| **3. Conventional Parameters** | Dry mass (total solids) | – | N/A | N/A | US EPA 160.3 / 209A |

Note / Key :

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

**Remark:** The report [(6821)102-0294] was sub-contracted to India (Testtex India Laboratories Pvt. Ltd) for Coliform & Total-N Tests.

## APPENDIX C – Onsite Field Data Record Sheet

| FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING) | CPSD-AN-00613-DATA 04 |
|---|---|
| | Issue Date: |
| | Version No.: 14 |
| | Business Line: Analytical |

**General Data**

| | |
|---|---|
| Laboratory Sample Number: | (6821) 102-0294 |
| Client Name: | |
| Field Contact Person: | Mirza Faisal Phone No: 01730-392697 |
| Project (Facility Name and Address): | Masco Industries Ltd. (224-223, Khartail, Shafaish Road, Gazipur Tongi, Gazipur |
| Sampling Location / Description: | E.T.P= Inlet |
| Sample Identification: | Zero discharge with sampling plan |
| Sample Type: | Composite Sample / Grab sample (Please delete as appropriate) |
| Name of Sampler: | MD. Asadhosain. |
| Discharge mode: | Direct discharge to environment (Specify destination: River, Sea, Stream...) OR Indirect discharge to sewage treatment plant |
| Date of collection: | 11.04.2021 |
| Factory Type: | Dyeing / Printing / Washing / Finishing / Others (please specify): |

*Note: It would be selected more than one

**Field Data for Wastewater**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Arrival Time: | 11:40 Am | | Departure Time: | | 5:20 Pm | | | |
| Field Parameters | pH: ~~37.2~~ 8.2 | | Temp: 37.2 °C | | Color Brown. | | Flow rate: | (volume/min) |
| Control No. of field equipment | | | | | | | | |
| Factory with effluent treatment plant: | ✓ Yes | | | | No | | | |
| Sample matrix: | | Incoming water (If required) | | | | | | |
| | ✓ | Wastewater before treatment | | | | | | |
| | | Wastewater after treatment – water at discharge point | | | | | | |
| Sampler container number | 12 | 12 | 12 | 12 | 12 | 12 | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Recording time ID | | | | | | | | |
| Recording time Time | 11:50Am | 12:50 Pm | 01:50 Pm | 02:50Pm | 03:50Pm | 04:50Pm | | |
| pH: | 8.2 | 8.3 | 8.4 | 8.6 | 7.8 | 8.4 | | |
| Temp (°C): | 37.2 | 38.9 | 40.4 | 42.9 | 43.8 | 40.6 | | |
| Color (visual estimation): | Brown. | Blue | Blue. | Blue | Brown | Brown | | |
| Flow rate (volume/time) | 40.9 | 49.4 | 46.8 | 42.9 | 39.4 | 39.9 | | |
| Volume collected, mL | 12x167 | 12x167 | 12x167 | 12x167 | 12x167 | 12x167 | | |
| Total volume collected | 12029 | Remark: Total volume collected must be greater than total of sample size required | | | | | | |

**Analysis Required and Preservation Method**

| Tests (ZDHC MRSL Parameters) | | Test required (√) | Total of sample size | Type of container | Preservation method |
|---|---|---|---|---|---|
| Combined test or Individual test (Remark 4) | 1. Phthalate | ✓ | 1000 mL total or 1000 mL each | Amber Glass,washed with nitric acid, | Without adding acid Store sample at 2-8°C |
| | 2. Chlorobenzenes, Chlorotoluene & PAH | ✓ | | | |
| | 3. SCCPs | ✓ | | | |
| | 4. APS | ✓ | | | |
| 5. APEOs | | ✓ | 100 mL | | |
| 6. Chlorophenols & Cresols | | ✓ | 100 mL | | |
| 7. Flame retardant | | ✓ | 500 mL | | |
| 8. Dyes | | ✓ | 10 mL | | |
| 9. Glycol | | ✓ | 50 mL | | |
| 10. *Pesticides | | X | 1000 mL | | |
| 11. *Nitrosamine | | X | 10 mL | | |
| 12. Banned Azodyes | | ✓ | 2000 mL | | |
| 13. *Free primary aromatic amines | | X | 500 mL | | |
| 14. Organotin Compounds | | ✓ | 500 mL | | |
| 15. VOC & Halogenated Solvents (Remark 6) | | ✓ | 10 mL | | Fill to full container without air gap; acidify to pH 2 with HCl and store sample at 2-8°C |
| 16. PFCs (Remark 8) | | ✓ | 2 mL | PE, washed with pesticide grade Acetone | Without adding acid Store sample at 2-8°C |

| | | |
|---|---|---|
| BUREAU VERITAS | **FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)** | CPSD-AN-00613-DATA 04<br>Issue Date:<br>Version No.: 14<br>Business Line: Analytical |

| Tests (Conventional Parameters) | | Test required (√) | Total of sample size | Type of container | Preservation method |
|---|---|---|---|---|---|
| Combined test or Individual test (Remark 4) | 17. Total suspened solids (TSS) | √ | 2000 mL total or 2000 mL each | Amber Glass, washed with nitric acid. | Without adding acid Store sample at 2-8°C |
| | 18. Total dissolved solids (TDS) | √ | | | |
| 19. 5-day Biochemical Oxygen Demand (BOD5) | | √ | 1000 mL | | |
| 20. Colour | | √ | 100 mL | | |
| 21. Heavy Metals except Cr(VI) & Total-P (Remark 6) | | √ | 9 mL | PE, washed with nitric acid | Acidify to pH 2 with $HNO_3$ and store at 2-8°C |
| 22. Cyanide | | √ | 500 mL | Amber Glass, washed with pesticide grade acetone | Adjust pH 12 with 50% NaOH, add 0.05 ml of 10% $Na_2S_2O_3$, and store sample at 2-8°C |
| 23. Cr(VI) | | √ | 95 mL | Amber Glass; washed with nitric acid | Filter by 0.45µm filter in field, fill to full container without air gap; adjust pH to 9.0-9.5 by adding ammonium buffer. Store sample at 2-8°C |
| 24. Chemical oxygen demand (COD) | | √ | 150 mL | | Acidify to pH 2 with $H_2SO_4$ Store sample at 2-8°C |
| 25. Phenols | | √ | 500 mL | | |
| 26. Oil and Grease & Total Hydrocarbon | | √ | 1000 mL | | |
| 27. *Formaldehyde | | √ | 25 mL | | Fill to full container without air gap; acidify to pH 2 with $H_2SO_4$ and store sample at 2-8°C |
| 28. Sulfide (Remark 5) | | √ | 50 mL | PE, washed with pesticide grade Acetone; | Fill to full container without air gap; add 2 drops of 2M zinc acetate, adjust pH to 9 with 6M NaOH Store sample at 2-8°C |
| 29. Total Coliform (Remark 6) | | √ | 125 mL | PE, clean, sterile, non-reactive | Add 0.05 ml of 10% $Na_2S_2O_3$ Store sample at 2-8°C |
| 30. Faecal Coliform (Remark 6) | | √ | 125 mL | | |
| 31. Persistent foam | | √ | N.A. | Foam higher than 45 cm (visual estimation): Yes / No | |
| 32. Sulfite | | √ | 100 mL | Amber Glass, washed with pesticide grade acetone | Add 1mL of 2.5% EDTA, 0.5g zinc acetate Store sample at 2-8°C |
| 33. Total-N | | √ | 100 mL | Amber Glass;washed with nitric acid; | Acidify to pH 2 with $H_2SO_4$ Store sample at 2-8°C |
| 34. Ammonium-N | | √ | 500 mL | | |
| 35. Adsorbable organically bound halogens (AOX) | | √ | 100 mL | | |
| 36. Acute aquatic toxicity: Luminus Bacteria; Fish Egg; Daphne; Alage; | | √ | 1000 mL | | Without adding acid Store sample at 2-8°C |
| 37. Sulphate | | √ | 100 mL | | |
| 38. Chloride | | √ | 100 mL | | |
| 39. Others: | | | | | |
| Observation/ Remark: | | | | | |

*Remarks:

1.Individual sampling can be performed upon request

2. The minimum sampling time for 2019 ZDHC guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request.

3. Scope of ZDHC guideline: Parameter 1-9, 12, 14-17, 19-26, 28, 29, 31-35
Scope of synthetic leather industry: Parameter 1-9, 12, 14-21, 23-26, 28, 30, 31, 33, 34, 37, 38
Scope of MMCF: Parameter 5, 15, 17, 19-21, 23 - 26, 28, 33-36
Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guidline, they are tested upon request.

4. Refer to CPSD-AN-G00019-STIP01, loactions with those CPSD test capability inside TCD matrix can perform the combined test.

5. Refer to CPSD-AN-000570-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.

6. Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

Recorded by: Date: 11.04.2021
Full name: MD. Asad hosain.

Comment from factory

Acknowledgement by factory

I hereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in desinated container(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-6°C

Signatory of Factory Representative: Date: 11/04/2021
Full Name: Mirja Faisal

CPSD-AN-00613-DATA 04-FIELD DATA RECORD ZDHC SAMPLING-V14 Page 2 of 4

| | | |
|---|---|---|
| BUREAU VERITAS | **FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING)** | CPSD-AN-00613-DATA 04<br>Issue Date:<br>Version No.: 14<br>Business Line: Analytical |

**General Data**

| | |
|---|---|
| Laboratory Sample Number: | (6821) 102 – 0294 |
| Client Name: | |
| Field Contact Person: | Mirza Faisal Phone No: 01730-392647 |
| Project (Facility Name and Address): | Masco Industries Ltd (724-223, kharfail, shitaish Road, Tongi, Gazipur. |
| Sampling Location / Description: | E.T.P = Outlet |
| Sample Identification: | Zero discharge with sampling plan |
| Sample Type: | Composite Sample / Grab sample (Please delete as appropriate) |
| Name of Sampler: | MD. Asadhosain |
| Discharge mode: | Direct discharge to environment (Specify destination: River, Sea, Stream....) OR Indirect discharge to sewage treatment plant |
| Date of collection: | 11.04.2021 Turag River. |
| Factory Type: | Dyeing / Printing / Washing / Finishing / Others (please specify): |

*Note: It would be selected more than one

No foam

**Field Data for Wastewater**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Arrival Time: | 11:40 Am | | Departure Time: | 5:20Pm | | | | |
| Field Parameters | pH: 7.8 | | Temp: 34.4 °C | Color: Brown | | Flow rate: (volume/min) | | |
| Control No. of field equipment | | | | | | | | |
| Factory with effluent treatment plant: | ✓ Yes | | | No | | | | |
| Sample matrix | | Incoming water (If required) | | | | | | |
| | | Wastewater before treatment | | | | | | |
| | ✓ | Wastewater after treatment – water at discharge point | | | | | | |
| Sampler container number | 18 | 18 | 18 | 18 | 18 | 18 | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Recording time ID | | | | | | | | |
| Recording time Time | 12:00 Pm | 01:00Pm | 02:00Pm | 03:00Pm | 4:00Pm | 5:00Pm. | | |
| pH | 7.8 | 7.9 | 8.1 | 8.0 | 7.8 | 7.6 | | |
| Temp (°C) | 34.4 | 34.2 | 34.8 | 34.1 | 33.2 | 33.0 | | |
| Color (visual estimation): | Brown. | Brown | Brown | Brown | Brown | Brown | | |
| Flow rate (volume/time) | 90.4 | 95.1 | 96.4 | 91.9 | 44.6 | 46.0 | | |
| Volume collected, mL | 18x167 | 18x167 | 18x167 | 18x167 | 18x167 | 18x167 | | |
| Total volume collected | 18036 | Remark: Total volume collected must be greater than total of sample size required | | | | | | |

**Analysis Required and Preservation Method**

| Tests (ZDHC MRSL Parameters) | | Test required (√) | Total of sample size | Type of container | Preservation method |
|---|---|---|---|---|---|
| Combined test or Individual test (Remark 4) | 1. Phthalate | ✓ | 1000 mL total or 1000 mL each | Amber Glass,washed with nitric acid, | Without adding acid Store sample at 2-8°C |
| | 2. Chlorobenzenes, Chlorotoluene & PAH | ✓ | | | |
| | 3. SCCPs | ✓ | | | |
| | 4. APS | ✓ | | | |
| 5. APEOs | | ✓ | 100 mL | | |
| 6. Chlorophenols & Cresols | | ✓ | 100 mL | | |
| 7. Flame retardant | | ✓ | 500 mL | | |
| 8. Dyes | | ✓ | 10 mL | | |
| 9. Glycol | | ✓ | 50 mL | | |
| 10. *Pesticides | | X | 1000 mL | | |
| 11. *Nitrosamine | | X | 10 mL | | |
| 12. Banned Azodyes | | ✓ | 2000 mL | | |
| 13. *Free primary aromatic amines | | X | 500 mL | | |
| 14. Organotin Compounds | | ✓ | 500 mL | | |
| 15. VOC & Halogenated Solvents (Remark 6) | | ✓ | 10 mL | | Fill to full container without air gap; acidify to pH 2 with HCl and store sample at 2-8°C |
| 16. PFCs (Remark 6) | | ✓ | 2 mL | PE, washed with pesticide grade Acetone | Without adding acid Store sample at 2-8°C |

| FIELD DATA RECORD ON ZERO DISCHARGE SAMPLE (COMPOSITE / INDIVIDUAL SAMPLING) | CPSD-AN-00613-DATA 04 |
|---|---|
| | Issue Date: |
| | Version No.: 14 |
| | Business Line: Analytical |

| Tests (Conventional Parameters) | | Test required (√) | Total of sample size | Type of container | Preservation method |
|---|---|---|---|---|---|
| Combined test or Individual test (Remark 4) | 17. Total suspened solids (TSS) | √ | 2000 mL total or 2000 mL each | Amber Glass, washed with nitric acid. | Without adding acid Store sample at 2-8°C |
| | 18. Total dissolved solids (TDS) | X | | | |
| 19. 5-day Biochemical Oxygen Demand (BOD5) | | √ | 1000 mL | | |
| 20. Colour | | √ | 100 mL | | |
| 21. Heavy Metals except Cr(VI) & Total-P (Remark 6) | | √ | 9 mL | PE, washed with nitric acid | Acidify to pH 2 with $HNO_3$ and store at 2-8°C |
| 22. Cyanide | | √ | 500 mL | Amber Glass, washed with pesticide grade acetone | Adjust pH 12 with 50% NaOH, add 0.05 ml of 10% $Na_2S_2O_3$, and store sample at 2-8°C |
| 23. Cr(VI) | | √ | 95 mL | Amber Glass; washed with nitric acid | Filter by 0.45μm filter in field, fill to full container without air gap; adjust pH to 9.0-9.5 by adding ammonium buffer. Store sample at 2-8°C |
| 24. Chemical oxygen demand (COD) | | √ | 150 mL | | Acidify to pH 2 with $H_2SO_4$ Store sample at 2-8°C |
| 25. Phenols | | √ | 500 mL | | |
| 26. Oil and Grease & Total Hydrocarbon | | √ | 1000 mL | | |
| 27. *Formaldehyde | | X | 25 mL | | Fill to full container without air gap; acidify to pH 2 with $H_2SO_4$ and store sample at 2-8°C |
| 28. Sulfide (Remark 5) | | √ | 50 mL | PE, washed with pesticide grade Acetone; | Fill to full container without air gap; add 2 drops of 2M zinc acetate, adjust pH to 9 with 6M NaOH Store sample at 2-8°C |
| 29. Total Coliform (Remark 6) | | √ | 125 mL | PE, clean, sterile, non-reactive | Add 0.05 ml of 10% $Na_2S_2O_3$ Store sample at 2-8°C |
| 30. Faecal Coliform (Remark 6) | | X | 125 mL | | |
| 31. Persistent foam | | √ | N.A. | Foam higher than 45 cm (visual estimation): Yes / No | |
| 32. Sulfite | | √ | 100 mL | Amber Glass, washed with pesticide grade acetone | Add 1mL of 2.5% EDTA, 0.5g zinc acetate Store sample at 2-8°C |
| 33. Total-N | | √ | 100 mL | Amber Glass;washed with nitric acid; | Acidify to pH 2 with $H_2SO_4$ Store sample at 2-8°C |
| 34. Ammonium-N | | √ | 500 mL | | |
| 35. Adsorbable organically bound halogens (AOX) | | √ | 100 mL | | |
| 36. Acute aquatic toxicity: Luminus Bacteria; Fish Egg; Daphne; Alage; | | | 1000 mL | | Without adding acid Store sample at 2-8°C |
| 37. Sulphate | | | 100 mL | | |
| 38. Chloride | | | 100 mL | | |
| 39. Others: | | | | | |
| Observation/ Remark: | | | | | |

*Remarks:

1. Individual sampling can be performed upon request
2. The minimum sampling time for 2019 ZDHC guideline is 6 hours with no more than one hour between discrete samples. Sampling time could be adjusted upon request
3. Scope of ZDHC guideline: Parameter 1-9, 12, 14-17, 19-26, 28, 29, 31-35
   Scope of synthetic leather industry: Parameter 1-9, 12, 14-21, 23-26, 28, 30, 31, 33, 34, 37, 38
   Scope of MMCF: Parameter 5, 15, 17, 19-21, 23 - 26, 28, 33-36
   Free primary aromatic amine, pesticides, nitrosamine and formaldehyde are not in the scope of ZDHC Guidline, they are tested upon request.
4. Refer to CPSD-AN-G00019-STIP01, loactions with those CPSD test capability inside TCD matrix can perform the combined test.
5. Refer to CPSD-AN-000570-MTHD for additional pretreatment of sulfide if only dissolved sulfide is required to be tested.
6. Refer to CPSD-AN-00613-MTHD for preparation of field blank for specific parameters.

Recorded by: _____ Date: 11.04.2021

Full name: MD. Asadhosain.

Comment from factory

Acknowledgement by factory

I hereby confirmed that Bureau Veritas has completed the stated sampling activity at captioned date, time and location. All sample(s) is/are collected in desinated container(s) and without any observation in leakage. Sample(s) collected by Bureau Veritas is/are stored in portable freezer / fridge that is maintained in 1-8°C

Signatory of Factory Representative: _____ Date: 11/04/2021

Full Name: Mirja Faisal

**END**