|  |  |
| --- | --- |
| **Dimensional stability to washing** | **Requirements** |

DIN EN ISO 6330:2021/ 5077:2008

Machine wash at (30°c) in household washing machine with Persil detergent, Normal cycle, 2.0 kg wash load, Flat dry.

# **Sample A:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Points Of Measurement | Before Wash (Cm) | After Wash (Cm) | Dimensional Change (%) | +-5 |
| Product Length | 18.2 | 17.8 | -0.55 |
| Product Width | 18.8 | 15.5 | 0.22 |

# **Sample B:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Points Of Measurement | Before Wash (Cm) | After Wash (Cm) | Dimensional Change (%) | +-5 |
| Product Length | 18.2 | 17.8 | -0.55 |
| Product Width | 18.8 | 15.5 | 0.22 |

# **Sample C:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Points Of Measurement | Before Wash (Cm) | After Wash (Cm) | Dimensional Change (%) | +-5 |
| Product Length | 18.2 | 17.8 | -0.55 |
| Product Width | 18.8 | 15.5 | 0.22 |

# **Sample D:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Points Of Measurement | Before Wash (Cm) | After Wash (Cm) | Dimensional Change (%) | +-5 |
| Product Length | 18.2 | 17.8 | -0.55 |
| Product Width | 18.8 | 15.5 | 0.22 |

(+) Denotes Extension (-) Shrinkage

|  |  |
| --- | --- |
| **Appearance after washing:** | **Requirements** |

DIN EN ISO 6330:2021/ 5077:2008

Washing & drying procedure: Same as Dimensional stability to washing

# **Sample A**

|  |  |  |
| --- | --- | --- |
| **Assesment** | **Result** |  |
| Colour Change | 4-5 | Class 3-4 |
| Cross Staining | 5 | Class 4-5 |
| Appearance | No seam open No stitch broken | Satisfactory |
| Pilling / Fuzzing | Slight pilling class 4-5 | Class 4-5 |
| Other Changes Observed | No other changes observed | Not Accepted |

# **Sample B**

|  |  |  |
| --- | --- | --- |
| **Assesment** | **Result** |  |
| Colour Change | 4-5 | Class 3-4 |
| Cross Staining | 5 | Class 4-5 |
| Appearance | No seam open No stitch broken | Satisfactory |
| Pilling / Fuzzing | Slight pilling class 4-5 | Class 4-5 |
| Other Changes Observed | No other changes observed | Not Accepted |

# **Sample C**

|  |  |  |
| --- | --- | --- |
| **Assesment** | **Result** |  |
| Colour Change | 4-5 | Class 3-4 |
| Cross Staining | 5 | Class 4-5 |
| Appearance | No seam open No stitch broken | Satisfactory |
| Pilling / Fuzzing | Slight pilling class 4-5 | Class 4-5 |
| Other Changes Observed | No other changes observed | Not Accepted |

|  |  |
| --- | --- |
| **Colour fastness to water:** | **Requirements** |

DIN EN ISO 105-E04

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** |  |
| Color Change | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | Change 3-4 |
| Self-staining | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | / |
| Staining On: | - | - | - | - | - | - | - | - | Staining 3-4 |
| - Acetate | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 |
| - Cotton | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 |
| - Polyamide | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 |
| - Polyester | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 |
| - Acrylic | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 |
| - Wool | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 | 4-5 |

|  |  |
| --- | --- |
| **Colour fastness to perspiration:** | **Requirements** |

DIN EN ISO 105-E04

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample A | Sample A | Sample B | Sample B |  |
|  | Acid | Alkane | Acid | Alkane |  |
| Color Change | 4-5 | 4-5 | 4-5 | 4-5 | Change 3-4 |
| Self-staining | 4-5 | 4-5 | 4-5 | 4-5 | Contrast staining 4-5 |
| Staining On: | - | - | - | - | Staining 3-4 |
| - Acetate | 4-5 | 4-5 | 4-5 | 4-5 |
| - Cotton | 4-5 | 4-5 | 4-5 | 4-5 |
| - Polyamide | 4-5 | 4-5 | 4-5 | 4-5 |
| - Polyester | 4-5 | 4-5 | 4-5 | 4-5 |
| - Acrylic | 4-5 | 4-5 | 4-5 | 4-5 |
| - Wool | 4-5 | 4-5 | 4-5 | 4-5 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample C | Sample C | Sample D | Sample D |  |
|  | Acid | Alkane | Acid | Alkane |  |
| Color Change | 4-5 | 4-5 | 4-5 | 4-5 | Change 3-4 |
| Self-staining | 4-5 | 4-5 | 4-5 | 4-5 | Contrast staining 4-5 |
| Staining On: | - | - | - | - | Staining 3-4 |
| - Acetate | 4-5 | 4-5 | 4-5 | 4-5 |
| - Cotton | 4-5 | 4-5 | 4-5 | 4-5 |
| - Polyamide | 4-5 | 4-5 | 4-5 | 4-5 |
| - Polyester | 4-5 | 4-5 | 4-5 | 4-5 |
| - Acrylic | 4-5 | 4-5 | 4-5 | 4-5 |
| - Wool | 4-5 | 4-5 | 4-5 | 4-5 |

|  |  |
| --- | --- |
| **Colour fastness to perspiration:** | **Requirements** |

DIN EN ISO 105-E04

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample E | Sample E | Sample F | Sample F |  |
|  | Acid | Alkane | Acid | Alkane |  |
| Color Change | 4-5 | 4-5 | 4-5 | 4-5 | Change 3-4 |
| Self-staining | 4-5 | 4-5 | 4-5 | 4-5 | Contrast staining 4-5 |
| Staining On: | - | - | - | - | Staining 3-4 |
| - Acetate | 4-5 | 4-5 | 4-5 | 4-5 |
| - Cotton | 4-5 | 4-5 | 4-5 | 4-5 |
| - Polyamide | 4-5 | 4-5 | 4-5 | 4-5 |
| - Polyester | 4-5 | 4-5 | 4-5 | 4-5 |
| - Acrylic | 4-5 | 4-5 | 4-5 | 4-5 |
| - Wool | 4-5 | 4-5 | 4-5 | 4-5 |

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | Sample G | Sample G |  |
|  | Acid | Alkane |  |
| Color Change | 4-5 | 4-5 | Change 3-4 |
| Self-staining | 4-5 | 4-5 | Contrast staining 4-5 |
| Staining On: | - | - | Staining 3-4 |
| - Acetate | 4-5 | 4-5 |
| - Cotton | 4-5 | 4-5 |
| - Polyamide | 4-5 | 4-5 |
| - Polyester | 4-5 | 4-5 |
| - Acrylic | 4-5 | 4-5 |
| - Wool | 4-5 | 4-5 |

|  |  |
| --- | --- |
| **Colour fastness to rubbing:** | **Requirements** |

DIN EN ISO 105-X12:2016

Analyzed by LC-MS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample A | | Sample B | |  |
|  | Length | Width | Length | Width |  |
| Dry rubbing | 4-5 | 4-5 | 4-5 | 4-5 | Dry 4 |
| Wet rubbing | 3 | 3 | 3 | 3 | Wet 2-3 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample C | | Sample D | |  |
|  | Length | Width | Length | Width |  |
| Dry rubbing | 4-5 | 4-5 | 4-5 | 4-5 | Dry 4 |
| Wet rubbing | 3 | 3 | 3 | 3 | Wet 2-3 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample E | | Sample F | |  |
|  | Length | Width | Length | Width |  |
| Dry rubbing | 4-5 | 4-5 | 4-5 | 4-5 | Dry 4 |
| Wet rubbing | 3 | 3 | 3 | 3 | Wet 2-3 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample G | | Sample H | |  |
|  | Length | Width | Length | Width |  |
| Dry rubbing | 4-5 | 4-5 | 4-5 | 4-5 | Dry 4 |
| Wet rubbing | 3 | 3 | 3 | 3 | Wet 2-3 |

|  |  |
| --- | --- |
| **Fiber Composition:** | **Requirements** |

DIN EN ISO 1833-7:2017,11:2017

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sample A | Labeled Fiber Content | Actual (Tested) Fiber Content | Suggested Fiber Content | ±3% |
| Cotton (%) | 72 | 69.2 | 69 |
| Polyamide (%) | 72 | 69.2 | 69 |
| Polyester (%) | 72 | 69.2 | 69 |
| Elastane (%) | 72 | 69.2 | 28 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sample B | Labeled Fiber Content | Actual (Tested) Fiber Content | Suggested Fiber Content | ±3% |
| Cotton (%) | 72 | 69.2 | 69 |
| Polyamide (%) | 72 | 69.2 | 69 |
| Polyester (%) | 72 | 69.2 | 69 |
| Elastane (%) | 72 | 69.2 | 28 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sample C | Labeled Fiber Content | Actual (Tested) Fiber Content | Suggested Fiber Content | ±3% |
| Cotton (%) | 72 | 69.2 | 69 |
| Polyamide (%) | 72 | 69.2 | 69 |
| Polyester (%) | 72 | 69.2 | 69 |
| Elastane (%) | 72 | 69.2 | 28 |

|  |  |
| --- | --- |
| **Fiber Composition:** | **Requirements** |

DIN EN ISO 1833-7:2017,11:2017

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sample D | Labeled Fiber Content | Actual (Tested) Fiber Content | Suggested Fiber Content | ±3% |
| Cotton (%) | 72 | 69.2 | 69 |
| Polyamide (%) | 72 | 69.2 | 69 |
| Polyester (%) | 72 | 69.2 | 69 |
| Elastane (%) | 72 | 69.2 | 28 |

|  |  |
| --- | --- |
| **Alkylphenole/ Alkylphenolethoxylate (AP/APEO):** | **Requirements** |

EN ISO 21084:2019/ AP: Analyzed by GC-MS / EN ISO 18254-1:2016 / APEO:   
Analyzed by LC-MS

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Title | CAS No. | Sample A | Sample B | Sample C | Sample D |  |
| Nonylphenol (NP), mixed isomers | 104-40-5 11066-49-2 25154-52-3 84852-15-3 | ND | ND | ND | ND | Sum of  NP, OP: 5 mg/kg |
| Octylphenol (OP), mixed isomers | 140-66-9 1806-26-4 27193-28-8 | ND | ND | ND | ND |
| Nonylphenol Ethoxylates (NPEO) | 9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0 | ND | ND | ND | ND | Sum of  NPEO, OPEO: 50 mg/kg |
| Octylphenol Ethoxylates (OPEO) | 9002-93-1 9036-19-5 68987-90-6 | ND | ND | ND | ND |
| Sum NP/NPEO | - | ND | ND | ND | ND | / |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Title | CAS No. | Sample E | Sample F | Sample G | Sample H |  |
| Nonylphenol (NP), mixed isomers | 104-40-5 11066-49-2 25154-52-3 84852-15-3 | ND | ND | ND | ND | Sum of  NP, OP: 5 mg/kg |
| Octylphenol (OP), mixed isomers | 140-66-9 1806-26-4 27193-28-8 | ND | ND | ND | ND |
| Nonylphenol Ethoxylates (NPEO) | 9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0 | ND | ND | ND | ND | Sum of  NPEO, OPEO: 50 mg/kg |
| Octylphenol Ethoxylates (OPEO) | 9002-93-1 9036-19-5 68987-90-6 | ND | ND | ND | ND |
| Sum NP/NPEO | - | ND | ND | ND | ND | / |

|  |  |
| --- | --- |
| **Alkylphenole/ Alkylphenolethoxylate (AP/APEO):** | **Requirements** |

EN ISO 21084:2019/ AP: Analyzed by GC-MS / EN ISO 18254-1:2016 / APEO:   
Analyzed by LC-MS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Title | CAS No. | Sample I | Sample J | Sample K |  |
| Nonylphenol (NP), mixed isomers | 104-40-5 11066-49-2 25154-52-3 84852-15-3 | ND | ND | ND | Sum of  NP, OP: 5 mg/kg |
| Octylphenol (OP), mixed isomers | 140-66-9 1806-26-4 27193-28-8 | ND | ND | ND |
| Nonylphenol Ethoxylates (NPEO) | 9016-45-9 26027-38-3 37205-87-1 68412-54-4 127087-87-0 | ND | ND | ND | Sum of  NPEO, OPEO: 50 mg/kg |
| Octylphenol Ethoxylates (OPEO) | 9002-93-1 9036-19-5 68987-90-6 | ND | ND | ND |
| Sum NP/NPEO | - | ND | ND | ND | / |

|  |
| --- |
| Note |
| Unit: mg/kg: (milligram per kilogram) |
| MDL: 5mg/kg for (NP/OP): 30mg/kg (NPEO/OPEO) |
| ND: Not detected |

|  |  |
| --- | --- |
| **Fabric weight:** | **Requirements** |

ISO 3801:1977

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample A | Sample B | Sample C | Sample D | ±5% |
| g/m² | 203.0 | 203.0 | 203.0 | 203.0 | 190 g/m² |
| Oz | 5.99 | 5.99 | 5.99 | 5.99 | 5.60 Oz |
|  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample E | Sample F | Sample G | Sample H | ±5% |
| g/m² | 203.0 | 203.0 | 203.0 | 203.0 | 190 g/m² |
| Oz | 5.99 | 5.99 | 5.99/ | 5.99 | 5.60 Oz |
|  |  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sample | Sample I | Sample J | Sample K | ±5% |
| g/m² | 203.0 | 203.0 | 203.0 | 190 g/m² |
| Oz | 5.99 | 5.99 | 5.99 | 5.60 Oz |
|  |  |  |  |  |

|  |  |
| --- | --- |
| **Seam spirality after laundering:** | **Requirements** |

ISO 16322-3:2021

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample A | Sample B | Sample C | Sample D |  |
| Spirality (%) | 0.3 | 0.3 | 0.3 | 0.3 | ±3% |
| Spirality (cm) | 5.99 | 5.99 | 5.99 | 5.99 | 3 cm |
|  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sample | Sample E | Sample F | Sample G | Sample H |  |
| Spirality (%) | 0.3 | 0.3 | 0.3 | 203.0 | ±3% |
| Spirality (cm) | 5.99 | 5.99 | 5.99 | 5.99 | 3 cm |
|  |  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sample | Sample I | Sample J | Sample K |  |
| Spirality (%) | 203.0 | 203.0 | 203.0 | ±3% |
| Spirality (cm) | 5.99 | 5.99 | 5.99 | 3 cm |
|  |  |  |  |  |

|  |  |
| --- | --- |
| **Azo-Dyes (including Aniline):** | **Requirements** |

All Textile: According to DIN EN ISO 14362-1:2017 – Analysis was conducted with GC-MS/HPLC-DAD.

Determination of 4-aminoazobenzene (CAS No.:60-09-3) –DIN EN ISO 14362-3:2017; with the use of Gas Chromatography – Mass Spectrometry (GC-MS)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | A1+A2+A3 | B1+B2+B3 | C1+C2+C3 | D1+D2+D3 | E1+E4+E5 | E2+E3 | mg/kg |
| Result | ND | ND | ND | ND | ND | ND | 20 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | F1+F2+F3 | F4+F5 | G1+G3+G5 | G2+G4 | H1+H2+H3 | mg/kg |
| Result | ND | ND | ND | ND | ND | 20 |

|  |
| --- |
| Note |
| n.d. = not detected |
| mg/kg = ppm |
| \* = Exceeds the limit |
| Detection Limit = 5 mg/kg (for individual compound) |

***List of Azo Dyes:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr#** | **Substance name** | **CAS No.** | **Sr#** | **Substance name** | **CAS No.** |
| 1 | Biphenyl-4-ylamine 4-aminobiphenyl xenylamine | 92-67-1 | 14 | 6-Methoxy-m-toluidine p-Cresidine | 120-71-8 |
| 2 | Benzidine | 92-87-5 | 15 | 4,4'-Methylene-bis-(2-chloro-aniline) 2,2'-Dichloro-4,4'-methylene-dianiline | 101-14-4 |
| 3 | 4-Chlor-o-toluidine | 95-69-2 | 16 | 4,4'-Oxydianiline | 101-80-4 |
| 4 | 2-Naphthylamine | 91-59-8 | 17 | 4,4'-Thiodianiline | 139-65-1 |
| 5 | o-Aminoazotoluene | 97-56-3 | 18 | o-Toluidine 2-Aminotoluene | 95-53-4 |
| 6 | 5-Nitro-o-toluidine 4-Amino-2’, 3-dimethylazobenzene 4-o-Tolylazo-o-toluidine | 99-55-8 | 19 | 4-Methyl-m-phenylenediamine | 95-80-7 |
| 7 | 4-Chloroaniline | 106-47-8 | 20 | 2,4,5-Trimethylaniline | 137-17-7 |
| 8 | 4-Methoxy-m-phenylenediamine | 615-05-4 | 21 | o-Anisidine 2-Methoxyaniline | 90-04-0 |
| 9 | 4,4’-Methylenedianiline 4,4’-Diaminodiphenylmethane | 101-77-9 | 22 | 4-Amino azobenzene | 60-09-3 |
| 10 | 3,3’-Dichlorobenzidine 3,3’-Dichlorobiphenyl-4, 4’-ylenediamine | 91-94-1 | 23 | 2,4-Xylidine | 95-68-1 |
| 11 | 3,3'-Dimethoxybenzidine o-Dianisidine | 119-90-4 | 24 | 2,6-Xylidine | 87-62-7 |
| 12 | 3,3'-Dimethylbenzidine 4,4'-Bi-o-toluidine | 119-93-7 | 25 | Aniline | 62-53-3 |
| 13 | 4,4'-Methylenedi-o-toluidine | 838-88-0 | 26 | 4-Aminoaniline 1,4-Phenylenediamine | 106-50-3 |

|  |  |
| --- | --- |
| **Aromatic Amine Salts:** | **Requirements** |

All Textile: According to DIN EN ISO 14362-1:2017 – Analysis was conducted with GC-MS/HPLC-DAD.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | A1+A2+A3 | B1+B2+B3 | C1+C2+C3 | D1+D2+D3 | E1+E4+E5 | E2+E3 | mg/kg |
| Result | ND | ND | ND | ND | ND | ND | 20 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | F1+F2+F3 | F4+F5 | G1+G3+G5 | G2+G4 | H1+H2+H3 | mg/kg |
| Result | ND | ND | ND | ND | ND | 20 |

|  |
| --- |
| Note |
| n.d. = not detected |
| mg/kg = ppm |
| \* = Exceeds the limit |
| Detection Limit = 5 mg/kg (for individual compound) |

***List of Aromatic Amine Salts:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr#** | **Substance name** | **CAS No.** | **Sr#** | **Substance name** | **CAS No.** |
| 1 | 4-Chloro-o-toluidinium chloride | 3165-93-3 | 3 | 4-meth methoxy-m-phenylene diammonium sulphate;  2,4- diaminoanisole sulphate | 120-71-8 |
| 2 | 2-Naphthylammoniumacetate | 553-00-4 | 4 | 2,4,5-trimethylaniline hydrochloride | 21436-97-5 |

|  |  |
| --- | --- |
| **Formaldehyde:** | **Requirements** |

DIN EN ISO 14184-1:2011

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No | A1+A2+A3 | B1+B2+B3 | C1+C2+C3 | D1+D2+D3 | E1+E4+E5 | E2+E3 | mg/kg |
| Formaldehyde | 50-00-0 | ND | ND | ND | ND | ND | ND | ND |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No | F1+F2+F3 | F4+F5 | G1+G3+G5 | G2+G4 | H1+H2+H3 | mg/kg |
| Formaldehyde | 50-00-0 | ND | ND | ND | ND | ND | ND |

|  |
| --- |
| MDL: 16 mg/kg |
| MDL: Method detection limit |
| ND: Not detected |
| mg/kg: milligram per kilogram |

|  |  |
| --- | --- |
| **Total Lead (Pb) Content:** | **Requirements** |

DIN EN 16711-1:2016, Analyzed by ICP-OES

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No | A1+A2+A3 | B1+B2+B3 | C1+C2+C3 | D1+D2+D3 | E1+E4+E5 | E2+E3 | mg/kg |
| Total Lead | 50-00-0 | ND | ND | ND | ND | ND | ND | Individual Test: 500  2-1 composite: 225 3-1 composite: 150 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No | F1+F2+F3 | F4+F5 | G1+G3+G5 | G2+G4 | H1+H2+H3 | mg/kg |
| Total Lead | 50-00-0 | ND | ND | ND | ND | ND | Individual Test: 500  2-1 composite: 225 3-1 composite: 150 |

|  |
| --- |
| Note |
| MDL: 10 mg/kg |

|  |  |
| --- | --- |
| **Total Cadmium (Cd) Content:** | **Requirements** |

DIN EN 16711-1:2016, Analyzed by ICP-OES

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No | A1+A2+A3 | B1+B2+B3 | C1+C2+C3 | D1+D2+D3 | E1+E4+E5 | E2+E3 | mg/kg |
| Cadmium (Cd) | 7440-43-9 | ND | ND | ND | ND | ND | ND | Individual Test: 100  2-1 composite: 45 3-1 composite: 30 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No | F1+F2+F3 | F4+F5 | G1+G3+G5 | G2+G4 | H1+H2+H3 | mg/kg |
| Cadmium (Cd) | 7440-43-9 | ND | ND | ND | ND | ND | Individual Test: 100  2-1 composite: 45 3-1 composite: 30 |

|  |
| --- |
| Note |
| MDL: 10 mg/kg |

|  |  |
| --- | --- |
| **Extractable (heavy) Metals:** | **Requirements** |

DIN EN 16711-2:2016, Analyzed by ICP-OES and DIN EN ISO 17075-1:2017 (modified) for Cr (VI)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No. | MDL (mg/kg) | Sample A | Sample B | Sample C | Sample D | Sample E | (mg/kg) |
| As (Arsenic) | 7440-38-2 | 0.2 | ND | ND | ND | ND | ND | 0.2 |
| Pb (Lead) | 7439-92-1 | 0.2 | ND | ND | ND | ND | ND | 0.2 |
| Cd (Cadmium) | 7440-43-9 | 0.1 | ND | ND | ND | ND | ND | 0.1 |
| Cr VI (Chromium VI) | 18540-29-9 | 0.5 | ND | ND | ND | ND | ND | 0.5 |
| Sb (Antimony) | 7440-36-0 | 0.5 | ND | ND | ND | ND | ND | 30 |
| Cr (Chromium) | 7440-47-3 | 0.5 | ND | ND | ND | ND | ND | 1.0 |
| Co (Cobalt) | 7440-48-4 | 0.5 | ND | ND | ND | ND | ND | 1.0 |
| Cu (Copper) | 7440-50-8 | 0.5 | ND | ND | ND | ND | ND | 25 |
| Ni (Nickel) | 7440-02-0 | 0.5 | ND | ND | ND | ND | ND | 1.0 |
| Hg (Mercury) | 7439-97-6 | 0.02 | ND | ND | ND | ND | ND | 0.02 |
| Ba (Barium) | 7440-39-3 | 0.5 | ND | ND | ND | ND | ND | 1000 |
| Se (Selenium) | 7782-49-2 | 0.5 | ND | ND | ND | ND | ND | 100 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No. | MDL (mg/kg) | Sample F | Sample G | Sample H | Sample I | Sample J | (mg/kg) |
| As (Arsenic) | 7440-38-2 | 0.2 | ND | ND | ND | ND | ND | 0.2 |
| Pb (Lead) | 7439-92-1 | 0.2 | ND | ND | ND | ND | ND | 0.2 |
| Cd (Cadmium) | 7440-43-9 | 0.1 | ND | ND | ND | ND | ND | 0.1 |
| Cr VI (Chromium VI) | 18540-29-9 | 0.5 | ND | ND | ND | ND | ND | 0.5 |
| Sb (Antimony) | 7440-36-0 | 0.5 | ND | ND | ND | ND | ND | 30 |
| Cr (Chromium) | 7440-47-3 | 0.5 | ND | ND | ND | ND | ND | 1.0 |
| Co (Cobalt) | 7440-48-4 | 0.5 | ND | ND | ND | ND | ND | 1.0 |
| Cu (Copper) | 7440-50-8 | 0.5 | ND | ND | ND | ND | ND | 25 |
| Ni (Nickel) | 7440-02-0 | 0.5 | ND | ND | ND | ND | ND | 1.0 |
| Hg (Mercury) | 7439-97-6 | 0.02 | ND | ND | ND | ND | ND | 0.02 |
| Ba (Barium) | 7440-39-3 | 0.5 | ND | ND | ND | ND | ND | 1000 |
| Se (Selenium) | 7782-49-2 | 0.5 | ND | ND | ND | ND | ND | 100 |

|  |  |
| --- | --- |
| **Extractable (heavy) Metals:** | **Requirements** |

DIN EN 16711-2:2016, Analyzed by ICP-OES and DIN EN ISO 17075-1:2017 (modified) for Cr (VI)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Substance Name | CAS No. | MDL (mg/kg) | Sample K | (mg/kg) |
| As (Arsenic) | 7440-38-2 | 0.2 | ND | 0.2 |
| Pb (Lead) | 7439-92-1 | 0.2 | ND | 0.2 |
| Cd (Cadmium) | 7440-43-9 | 0.1 | ND | 0.1 |
| Cr VI (Chromium VI) | 18540-29-9 | 0.5 | ND | 0.5 |
| Sb (Antimony) | 7440-36-0 | 0.5 | ND | 30 |
| Cr (Chromium) | 7440-47-3 | 0.5 | ND | 1.0 |
| Co (Cobalt) | 7440-48-4 | 0.5 | ND | 1.0 |
| Cu (Copper) | 7440-50-8 | 0.5 | ND | 25 |
| Ni (Nickel) | 7440-02-0 | 0.5 | ND | 1.0 |
| Hg (Mercury) | 7439-97-6 | 0.02 | ND | 0.02 |
| Ba (Barium) | 7440-39-3 | 0.5 | ND | 1000 |
| Se (Selenium) | 7782-49-2 | 0.5 | ND | 100 |

|  |
| --- |
| Note |
| Method Detection Limit |
| mg/kg: milligram per kilogram |
| ND: Not detected |

|  |  |
| --- | --- |
| **Quinoline:** | **Requirements** |

DIN 54231:2005, Analyzed by GC-MS

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No | A1+A2+A3 | B1+B2+B3 | C1+C2+C3 | D1+D2+D3 | E1+E4+E5 | E2+E3 | mg/kg |
| Quinoline | 91-22-5 | ND | ND | ND | ND | ND | ND | Individual Test :50  2-1 composite: 22.5 3-1 composite: 15 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No | F1+F2+F3 | F4+F5 | G1+G3+G5 | G2+G4 | H1+H2+H3 | mg/kg |
| Quinoline | 91-22-5 | ND | ND | ND | ND | ND | Individual Test :50  2-1 composite: 22.5 3-1 composite: 15 |

|  |
| --- |
| Note |
| MDL: 15 mg/kg |

|  |  |
| --- | --- |
| **Phthalates** | **Requirements** |

DIN 54231:2005, Analyzed by GC-MS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | H1+H2+H3 | A1+A2+A3 | B1+B2+B3 | C1+C2+C3 | D1+D2+D3 | E1+E4+E5 | mg/kg |
| Result | ND | ND | ND | ND | ND | ND | Individual Test :1000 2-1 composite: 450 3-1 composite: 300 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | E2+E3 | F1+F2+F3 | F4+F5 | G1+G3+G5 | G2+G4 | mg/kg |
| Result | ND | ND | ND | ND | ND | Individual Test :1000 2-1 composite: 450 3-1 composite: 300 |

|  |
| --- |
| Note |
| N. D. = Not detected |
| Laboratory Reporting Limit: 50 mg/kg |
| N. D. = Not detected |
| mg/kg: milligram per kilogram |

***List of Phthalates:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr#** | **Substance name** | **CAS No.** | **Sr#** | **Substance name** | **CAS No.** |
| 1 | Bis (2-ethylhexyl) phthalate (DEHP) | 117-81-7 | 12 | 1,2-Benzendicarboxylicacidalkyl esters, C7-rich (DIHP) | 71888-89-6 |
| 2 | Dibutyl phthalate (DBP) | 84-74-2 | 13 | 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (DHxP) | 68515-50-4 |
| 3 | Benzyl butyl phthalate (BBP) | 85-68-7 | 14 | Dimethyl phthalate (DMP) | 131-11-3 |
| 4 | Diisobutyl phthalate (DIBP) | 84-69-5 | 15 | Di-n-propyl phthalate (DPP) | 131-16-8 |
| 5 | Di-“isononyl” phthalate (DINP) | 28553-12-0 68515-48-0 | 16 | Dicyclohexyl phthalate (DCP) | 84-61-7 55819-02-8 169741-16-6 |
| 6 | Di-“isodecyl” phthalate (DIDP) | 26761-40-0 68515-49-1 | 17 | 1,2-Benzenedicarboxylic acid, di-2-propenyl ester (DAP) | 131-17-9 |
| 7 | Di-n-octyl phthalate (DNOP) | 117-84-0 | 18 | Di-iso-hexylphthalate (DIHxP) | 71850-09-4 |
| 8 | Di-n-pentylphthalate (n-, iso-, or mixed) (DIPP/ DNPP) | 131-18-0 605-50-5 776297-69-9 84777-06-0 | 19 | 1,2-Benzenedicarboxylic acid, di-C6-10 alkyl esters | 68515-51-5 |
| 9 | Bis (2-methoxyethyl) phthalate (DMEP) | 117-82-8 | 20 | 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters | 68648-93-1 |
| 10 | Di-n-hexyl phthalate (DNHP) | 84-75-3 | 21 | Di-ethylphthalate (DEP) | 84-66-2 |
| 11.1 | 1,2-Benzendicarboxylicacid, di-C7-11branched and linear alkylesters (DHNUP) | 68515-42-4 | 22 | 1,2-Cyclohexane dicarboxylic acid diisononyl ester (DINCH) | 166412-78-8 |
| 11.2 | Di-2-propyl heptyl phthalate (DPHP) | 53306-54-0 | 23 |  |  |
| 11.3 | Di-n-nonylphthalate (DNP) | 84-76-4 | 24 |  |  |
| 11.4 | Diisooctyl phthalate (DIOP) | 27554-26-3 | 25 |  |  |

|  |  |
| --- | --- |
| **Polycyclic Aromatic Hydrocarbon(PAH):** | **Requirements** |

AfPS GS 2019:01

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No. | Sample A | Sample B | Sample C | Sample D | Sample E | Requirement |
| Benzo (a) anthracene | 56-55-3 | ND | ND | ND | ND | ND |  |
| Benzo (a) pyrene | 50-32-8 | ND | ND | ND | ND | ND |  |
| Benzo (b) fluoranthene | 205-99-2 | ND | ND | ND | ND | ND |  |
| Benzo [e] pyrene | 192-97-2 | ND | ND | ND | ND | ND |  |
| Benzo [j] fluoranthene | 205-82-3 | ND | ND | ND | ND | ND |  |
| Benzo (k) fluoranthene | 207-08-9 | ND | ND | ND | ND | ND |  |
| Chrysene | 218-01-9 | ND | ND | ND | ND | ND |  |
| Dibenzo(a,h)anthracene | 53-70-3 | ND | ND | ND | ND | ND |  |
| Naphthalene | 91-20-3 | ND | ND | ND | ND | ND |  |
| Acenaphthylene | 208-96-8 | ND | ND | ND | ND | ND |  |
| Acenaphtene | 83-32-9 | ND | ND | ND | ND | ND |  |
| Fluorene | 86-73-7 | ND | ND | ND | ND | ND |  |
| Phenanthrene | 85-01-8 | ND | ND | ND | ND | ND |  |
| Anthracene | 120-12-7 | ND | ND | ND | ND | ND |  |
| Fluoranthene | 206-44-0 | ND | ND | ND | ND | ND |  |
| Pyrene | 129-00-0 | ND | ND | ND | ND | ND |  |
| Indeno(1,2,3-cd) pyrene | 193-39-5 | ND | ND | ND | ND | ND |  |
| Benzo(g,h,i) perylene | 191-24-2 | ND | ND | ND | ND | ND |  |
| 1-Methylpyrene | 2381-21-7 | ND | ND | ND | ND | ND |  |
| Dibenzo[a,l]pyrene | 191-30-0 | ND | ND | ND | ND | ND |  |
| Dibenzo[a,i]pyrene | 189-55-9 | ND | ND | ND | ND | ND |  |
| Dibenzo[a,h]pyrene | 189-64-0 | ND | ND | ND | ND | ND |  |
| Dibenzo[a,e]pyrene | 192-65-4 | ND | ND | ND | ND | ND |  |
| Cyclopenta[c,d]pyrene | 27208-37-3 | ND | ND | ND | ND | ND |  |
| Sum 24 PAHs | - | ND | ND | ND | ND | ND |  |
| Rating | - |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Substance Name | CAS No. | Sample F | Sample G | Sample H | Sample I | Sample J | Requirement |
| Benzo (a) anthracene | 56-55-3 | ND | ND | ND | ND | ND |  |
| Benzo (a) pyrene | 50-32-8 | ND | ND | ND | ND | ND |  |
| Benzo (b) fluoranthene | 205-99-2 | ND | ND | ND | ND | ND |  |
| Benzo [e] pyrene | 192-97-2 | ND | ND | ND | ND | ND |  |
| Benzo [j] fluoranthene | 205-82-3 | ND | ND | ND | ND | ND |  |
| Benzo (k) fluoranthene | 207-08-9 | ND | ND | ND | ND | ND |  |
| Chrysene | 218-01-9 | ND | ND | ND | ND | ND |  |
| Dibenzo(a,h)anthracene | 53-70-3 | ND | ND | ND | ND | ND |  |
| Naphthalene | 91-20-3 | ND | ND | ND | ND | ND |  |
| Acenaphthylene | 208-96-8 | ND | ND | ND | ND | ND |  |
| Acenaphtene | 83-32-9 | ND | ND | ND | ND | ND |  |
| Fluorene | 86-73-7 | ND | ND | ND | ND | ND |  |
| Phenanthrene | 85-01-8 | ND | ND | ND | ND | ND |  |
| Anthracene | 120-12-7 | ND | ND | ND | ND | ND |  |
| Fluoranthene | 206-44-0 | ND | ND | ND | ND | ND |  |
| Pyrene | 129-00-0 | ND | ND | ND | ND | ND |  |
| Indeno(1,2,3-cd) pyrene | 193-39-5 | ND | ND | ND | ND | ND |  |
| Benzo(g,h,i) perylene | 191-24-2 | ND | ND | ND | ND | ND |  |
| 1-Methylpyrene | 2381-21-7 | ND | ND | ND | ND | ND |  |
| Dibenzo[a,l]pyrene | 191-30-0 | ND | ND | ND | ND | ND |  |
| Dibenzo[a,i]pyrene | 189-55-9 | ND | ND | ND | ND | ND |  |
| Dibenzo[a,h]pyrene | 189-64-0 | ND | ND | ND | ND | ND |  |
| Dibenzo[a,e]pyrene | 192-65-4 | ND | ND | ND | ND | ND |  |
| Cyclopenta[c,d]pyrene | 27208-37-3 | ND | ND | ND | ND | ND |  |
| Sum 24 PAHs | - | ND | ND | ND | ND | ND |  |
| Rating | - |  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Substance Name | CAS No. | Sample K | Requirement |
| Benzo (a) anthracene | 56-55-3 | ND |  |
| Benzo (a) pyrene | 50-32-8 | ND |  |
| Benzo (b) fluoranthene | 205-99-2 | ND |  |
| Benzo [e] pyrene | 192-97-2 | ND |  |
| Benzo [j] fluoranthene | 205-82-3 | ND |  |
| Benzo (k) fluoranthene | 207-08-9 | ND |  |
| Chrysene | 218-01-9 | ND |  |
| Dibenzo(a,h)anthracene | 53-70-3 | ND |  |
| Naphthalene | 91-20-3 | ND |  |
| Acenaphthylene | 208-96-8 | ND |  |
| Acenaphtene | 83-32-9 | ND |  |
| Fluorene | 86-73-7 | ND |  |
| Phenanthrene | 85-01-8 | ND |  |
| Anthracene | 120-12-7 | ND |  |
| Fluoranthene | 206-44-0 | ND |  |
| Pyrene | 129-00-0 | ND |  |
| Indeno(1,2,3-cd) pyrene | 193-39-5 | ND |  |
| Benzo(g,h,i) perylene | 191-24-2 | ND |  |
| 1-Methylpyrene | 2381-21-7 | ND |  |
| Dibenzo[a,l]pyrene | 191-30-0 | ND |  |
| Dibenzo[a,i]pyrene | 189-55-9 | ND |  |
| Dibenzo[a,h]pyrene | 189-64-0 | ND |  |
| Dibenzo[a,e]pyrene | 192-65-4 | ND |  |
| Cyclopenta[c,d]pyrene | 27208-37-3 | ND |  |
| Sum 24 PAHs | - | ND |  |
| Rating | - |  |  |

|  |
| --- |
| Note |
| MDL: 0.2 mg/kg |
| Method Detection Limit |
| mg/kg: milligram per kilogram |

|  |  |
| --- | --- |
| **Polycyclic Aromatic Hydrocarbon(PAH):** | **Requirements** |

AfPS GS 2019:01