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|  |  |  | |  | |  |  | | |  |  | | |  | |  |  | | | |
| U15, |  | Phone: 02 8507 0725 | | | | Sample Received: | | | <<Field:Received>> | | | | | | | | | | |
| 168-180 Victoria Rd |  | Fax: 02 8069 5851 | | | | Sample Tested: | | | <<Field:Tested>> | | | | | | | | | | |
| Marrickville |  | Email: team@enzymelabs.com.au | | |  | Testing Officer: | | | <<Field:TestOfficer>> | | | | | | | | | |
| NSW, 2204 |  | Web: www.enzymelabs.com.au | | |  | Tested At: | | | <<Field:Location>> | | | | | | | | | |
|  |  |  | |  | | Job No. | | | <<Field:JobNo>> | | | | | | | | | | |
| **TEST REPORT** | | | | | | | | | | | | | | |
| Customer: | <<Field:Customer>> | | | | | | | | | | |  |  |  | |  |  |
|  |  | |  |  | |  | |  | | | |  |  |  | |  |  |

**Test Conducted: EL-TM-004-05 - Laundry Wash Evaluation**

This test method follows the Australian Standard AS4146-2000 Appendix C. However the test method differs from the Australian Standard in terms of the test specimens used and the test parameters due to customer requirements. These differences are listed below in table 1a and table 1b.

**Swatches Used**

|  |  |
| --- | --- |
| **Swatches Used** | **Swatches Referenced in AS4146-2000 Appendix C** |
| White Cotton Washed 3 times (CN03 – CFT Netherlands) | Cotton bleached, without optical brightener EMPA 221. |
| Mayonnaise with carbon black (CS05S – CFT Netherlands) | Cotton soiled with carbon black and mineral oil EMPA106. |
| Coffee (CS51 – CFT Netherlands) | Cotton soiled with blood EMPA 111. |
| Chocolate Pudding (E165– EMPA Germany) | Cotton soiled with milk chocolate EMPA 112. |
| Lipstick (CS116 – CFT Netherlands) | Cotton soiled with red wine EMPA 114. |
| Sebum (Artificial Perspiration) (CS132 – CFT Netherlands) |  |
| Red Wine (CS03 – CFT Netherlands) |  |
| Grass (CS08 – CFT Netherlands) |  |
| Mineral Oil and pigment (C12 – CFT Netherlands) |  |
| Blood / Milk / Ink (C05 – CFT Netherlands) |  |

Table 1a. Swatches used compared to swatches referenced in AS4146-2000 Appendix C

**Test Parameters**

|  |  |  |  |
| --- | --- | --- | --- |
| Test Parameter | Value | AS/NZS 4146 | Reason for difference to standard |
| Swatch size | 8.0 cm x 8.0cm | 14.5 cm x 16.0cm | Lower cost |
| Swatch sets per machine | 2 sets | 1 to 3 | As per standard |
| Swatch sets per product | 4 sets | Not Specified | As per standard |
| Readings per swatch | 2 | 8 | Smaller swatch used. |
| UV Filter cut-off @ 420nm | No | No | As per standard |
| Water Temperature | 25oC (+-) 1oC | Not specified | Not applicable |
| Water Hardness | 60 (+-) 5ppm CaCO3 | Not specified | Not applicable |
| Top Loader Machine | Simpson Eziset 550 Model: SWT554 | Not specified | Not applicable |
| Top Loader Wash Setting | Normal | Not specified | Not applicable |
| Top Loader Wash Time | 23 minutes (+-) 0.5 minutes | Not specified | Not applicable |
| Top Loader Rinse time | Deep |  |  |
| Top load Rinse setting | Medium | Not applicable |  |
| Top loader water level | Wash Water : 56.98L (M.U. = 2.32L)  Total water = 99.74L (M.U. = 2.14L) | Not specified | Not applicable |
| Washing ballast | 1.3-1.4kg 1 sheet = pillow cases for balance | Not specified | Not applicable |

Table 1b. Test parameters.

|  |
| --- |
| **NOTE: Only samples that have been tested using the same test batch can be compared.**  **SWATCH BATCH USED FOR THIS REPORT: <<Field:SwatchBatch>>** |

**Samples Tested**

Table 2 details all samples that are included in this report.

|  |
| --- |
| <<SamplesTable;Sample Name,Sample Batch,ELRef>> |

Table 2. Samples tested

**Summary Results**

Table 3 provides the average result of all replicates performed for each product.

|  |
| --- |
| <<SummaryTable;Sample Name; Whiteness Index,Mayonnaise with carbon Black (CS05S), Coffee (CS51), Chocolate Pudding (EMPA165), Lipstick (CS116),Sebum (CS132), Red Wine (CS03), Grass (CS08), Mineral Oil Pigment (C12), Blood/Milk/Ink (C05);1;Horizontal;38,\*\*>> |

Table 3. Average results for each stain for each product.

**Test Product Individual Test Scores**

The individual results of the different sets of stains washed for each product are listed here. The experimental standard deviation of the mean using a coverage factor of 2 to give a 95% confidence interval is given as the measurement uncertainty expressed as an absolute value.

|  |
| --- |
| <<SampleResultsTable;Sample Name+Sample Batch; Whiteness Index,Mayonnaise with carbon Black (CS05S), Coffee (CS51), Chocolate Pudding (EMPA165), Lipstick (CS116),Sebum (CS132), Red Wine (CS03), Grass (CS08), Mineral Oil Pigment (C12), Blood/Milk/Ink (C05);1;Vertical;38,\*,\*,\*,\*,2,\*,\*>> |

**Individual Soil Statistical Comparison Tables**

A comparison grid is created that compares every product in the set with every other product in the set using a statistical t-test. The statistical t-test calculates whether one products result set is statistically different to another products result set with a 95% confidence interval.

**Whiteness Index**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.; Whiteness Index>> |

**Mayonnaise with carbon Black**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.; Mayonnaise with carbon Black (CS05S)>> |

**Coffee**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.; Coffee (CS51)>> |

**Chocolate Pudding**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.; Chocolate Pudding (EMPA165)>> |

**Lipstick**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.;Lipstick (CS116)>> |

**Sebum**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.;Sebum (CS132)>> |

**Red Wine**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.; Red Wine (CS03)>> |

**Grass**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.; Grass (CS08)>> |

**Mineral Oil Pigment**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.;Mineral Oil Pigment (C12)>> |

**Blood/Milk/Ink**

|  |
| --- |
| <<StatCompareTable;Sample Name+Sample Batch;Sample Abrev.; Blood/Milk/Ink (C05)>> |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | | --- | |  | |  |  |  |  |  |  |  |  |
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| Authorised by: |  |  |  | 13/03/2020 |  |  |  |  |  |  |
|  | <<Field:Title>> | |  |  |  |  |  |  |  |  |
| The data pertains solely to the samples tested. The homogeneity or the sampling of the samples cannot be guaranteed and therefore may not be representative of the lot or batch or other samples. Consequently the data may not necessarily justify the acceptance or rejection of a lot or batch, a product recall or support legal proceedings. It is the responsibility of the client to provide all information relevant to the analysis requested. This report does not imply that Enzyme Labs has been engaged to consult upon the consequences of the analysis and for any action that should be taken as a result of the analysis. This report must be reproduced in full unless written permission is obtained from Enzyme Labs. | | | | | | | | | | |
| **END OF REPORT** | | | | | | | | | | |