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WILCKENS FARBEN GMBH  
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25348 Glückstadt

Braunschweig, 27.01.2023

## Test report No. MAIC-2023-0198

|                               |   |        |
|-------------------------------|---|--------|
| <b>Customer:</b>              | WILCKENS FARBEN GMBH, Glückstadt.                                       |        |
| <b>Objective of the test:</b> | Determination of migratable elements of a lacquered glass plate sample. |        |
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This report comprises 4 pages.

The test report may be made available or duplicated only in its unabridged form. Publication in excerpt form is subject to the written consent of the Fraunhofer Institute for Wood Research – Wilhelm-Klauditz-Institut (WKI). The test results refer solely to the objects tested. The tested material was used up.

## Sample description:

| WKI no. | Date of reception | Sample Name<br>(this information is provided by the customer)   | Product No. | Manufacturer-Code    | Date-Stamp |
|---------|-------------------|---|-------------|----------------------|------------|
| P96213  | 24.01.2023        | 2. SPWM .... seidenmatt<br>(2. SPWM.... seidenmatt mit höchstem Pigmentanteil (Titandioxid-weiß)<br>Handelsnamen<br>Wilckens Buntlack 2 in 1 seidenmatt<br>Wilckens Weißlack 2 in 1 seidenmatt<br>Renolin Buntlack 2in1 seidenmatt<br>Renolin Weißlack 2in1 seidenmatt) | n.a.        | Wilckens Farben GmbH | n.a.       |

(Sample P96213: paper/cardboard/wrapped separately, wrapping ok)

Notice: Sample material will be stored for 2 months after test report date. Please contact us if an extended storage time is required or if sample material needs to be returned.



## Methods:

### Determination of migratable elements according to DIN EN 71-3:2019+A1:2021-06

#### Category III: scraped-off materials

100 - 200 mg of the scraped-off material was weighed into a vial and shaken with the 50-fold amount of a 0.07 mol/l HCl solution for 1 min. The pH-value was checked and, if necessary, adjusted to 1.10 – 1.20 using a 2 or 6 mol/l HCl solution, respectively. Afterwards, the solution was agitated for 1 h at 37 (±2) °C and then left for another hour at the same temperature.

The extract was filtered using a membrane filter and measured via ICP/MS. The concentration of migrated elements was calculated using a certified and matrix-adjusted multi-element standard.

## Determination of chromium species Cr (VI) according to DIN EN 71-3:2019+A1:2021-06

### Category III: scraped-off materials

An aliquot of the filtrated migration solution was neutralized with ammoniac solution and diluted with thinned mobile phase. Afterwards, Cr (VI) was measured via HPLC-ICP/MS and calculated using a certified and matrix-adjusted element standard.

### Results:

#### Results of the element determination of sample P96213 (2. SPWM .... seidenmatt)

| Elements | Migration element content [mg/kg] | Limit of detection (LoD) [mg/kg] | Limit of determination (LoQ) [mg/kg] | Limit values category III [mg/kg] |
|----------|-----------------------------------|----------------------------------|--------------------------------------|-----------------------------------|
| Al       | 173                               | 0.3                              | 0.9                                  | 28130                             |
| Sb       | < LoD                             | 0.3                              | 0.9                                  | 560                               |
| As       | < LoD                             | 0.3                              | 0.9                                  | 47                                |
| Ba       | 4.1                               | 0.3                              | 0.9                                  | 18750                             |
| B        | < LoD                             | 0.3                              | 0.9                                  | 15000                             |
| Cd       | < LoD                             | 0.3                              | 0.9                                  | 17                                |
| Cr       | < LoD                             | 0.3                              | 0.9                                  | 460                               |
| Cr (III) | < LoD                             | 0.3                              | 0.9                                  | 460                               |
| Cr (VI)  | < LoD                             | 0.002                            | 0.006                                | 0.053                             |
| Co       | < LoD                             | 0.3                              | 0.9                                  | 130                               |
| Cu       | < LoQ                             | 0.3                              | 0.9                                  | 7700                              |
| Pb       | < LoD                             | 0.3                              | 0.9                                  | 23                                |
| Mn       | < LoD                             | 0.3                              | 0.9                                  | 15000                             |
| Hg       | < LoD                             | 0.02                             | 0.06                                 | 94                                |
| Ni       | < LoD                             | 0.3                              | 0.9                                  | 930                               |
| Se       | < LoD                             | 0.3                              | 0.9                                  | 460                               |
| Sr       | < LoQ                             | 0.3                              | 0.9                                  | 56000                             |
| Sn       | < LoD                             | 0.3                              | 0.9                                  | 180000                            |
| Zn       | 3.4                               | 0.3                              | 0.9                                  | 46000                             |

#### Parameters of the element determination (DIN EN 71-3:2019+A1:2021-06)

Elution: 0.07 mol HCl solution, 2 h at 37 °C.

pH value after elution: 1.28

Analysis: Agilent ICP-MS 7700

Calibration: Matrix-adjusted multi-element standards

Testing date: 24.01.2023

**Remarks:** The migrated element contents of sample P96213 were below the limit values according to DIN EN 71-3:2019+A1:2021-06, IOS-MAT-0054 (AA-92520-13), IOS-MAT-0195 (AA-2208470-3) and IOS-PRG-0010 (AA-15857-15).

### Recalculated results of migratable elements according to ISO 8124-3:2020-03

According to IKEA IOS regulations IOS-MAT0054 (AA-92520-13), IOS-MAT0195 (AA-2208470-3) and IOS-PRG-0010 (AA-15857-15) the analysis results of DIN EN 71-3:2019+A1:2021-06 can be recalculated using correction factors stated in ISO 8124-3:2020-03. The used correction factors and the recalculated results are shown in the following table.

The values according to ISO 8124-3:2020-03 are recalculated for information purposes only.

### Recalculated results of migratable elements according to ISO 8124-3:2020-03

| Elements | DIN EN 71-3                                |                                   | ISO 8124-3                                     |  |
|----------|--|-----------------------------------|--|--|
|          | Analyzed migration element content [mg/kg] | analytical correction factors [%] | recalculated migration element content [mg/kg] | *Limit values any toy material [mg/kg] |
| Sb       | < LoD                                      | 60                                | -  | 60                                     |
| As       | < LoD                                      | 60                                | -  | 25                                     |
| Ba       | 4.1  | 30                                | 2.9  | 1000                                   |
| Cd       | < LoD                                      | 30                                | -  | 75                                     |
| Cr       | < LoD                                      | 30                                | -  | 60                                     |
| Pb       | < LoD                                      | 30                                | -  | 90                                     |
| Hg       | < LoD                                      | 50                                | -  | 60                                     |
| Se       | < LoD                                      | 60                                | -  | 500                                    |

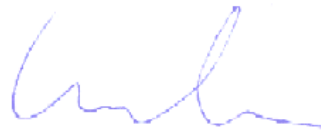
\*except modelling clay and finger paint

Officer in Charge



A. Omelan

For the department



Dr. E. Uhde