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Dresden, 2022-05-04
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Test Report Order no. 2522217

Client: HEMEL BOYA VE KIMYA SN. A.S.
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Vakum Cad. No:25
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Date of order: 2022-04-26

Order: Determination of the migration behavior of heavy metals according to DIN EN 71-3: 2021-06 (category III, table 1) in a dispersion paint

Contractor: EPH – Laboratory chemical testing

Engineer in charge: Dr. Christiane Swaboda



Dipl.-Ing. M. Broege
Head of Laboratory Chemical Testing

The test report contains 3 pages. Any duplication, even in part, requires written permission of EPH.

1 Assignment

Determination of the migration behaviour of heavy metals according to DIN EN 71-3: 2021-06 (Category III according to Table 1) in 1 dispersion paint

2 Sample material

The client handed over the following samples:

Table 1: sampling information

P1	Prime MX Beyaz Astar
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Sample receipt in the EPH: 19 April 2022

3 Performed tests

Table 2: performed tests

Pos.	Performed tests	Testing period
1	Determination of heavy metals according to DIN EN 71-3: 2021-06	2022-05-04/03

3.1 Determination of heavy metals according to DIN EN 71-3: 2021-06

Sample quantities: ca. 0.5 g
 Solvent: 25 mL 0.07 n hydrochloric acid
 Method: Elution over 2 h in a water bath at 37 °C
 Quantification: with ICP-OES
 Determination: double determination

The following elements were to be determined according to DIN EN 71-3:2021-06:

Aluminum (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Boron (B), Cadmium (Cd), Cobalt (Co), Chrome (Cr), Copper (Cu), Mercury (Hg), Manganese (Mn), Nickel (Ni), Lead (Pb), Selenium (Se), Tin (Sn), Strontium (Sr), Zinc (Zn)

Table 3: Limit of quantification of different elements

Element	Al	As	B	Ba	Cd	Co	Cr ges.	Cr VI	Cu	Hg
LOQ [mg/kg]	3	1.5	3	0.1	0.05	0.05	0.02	0.005	0.1	0.05

LOQ Limit of quantification [mg/kg]

Table 4: Limit of quantification of different elements

Element	Mn	Ni	Pb	Sb	Se	Sn	Sr	Zn
LOQ [mg/kg]	0.05	0.25	1.5	1.5	1.5	0.05	0.05	1.5

LOQ Limit of quantification [mg/kg]

4 Results and Evaluation*

Table 5: Result overview and evaluation of the tested material

Element	LOQ	Limit Value Category III	Measured Values [mg/kg]	Evaluation according to DIN EN 71-3: 2021-06 comply with limit value
Sample	[mg/kg]	[mg/kg]	P1	P1
Al	3	28130	37,0	Yes
As	1.5	47	< LOQ	Yes
B	3	15000	< LOQ	Yes
Ba	0.1	18750	0,7	Yes
Cd	0.05	17	< LOQ	Yes
Co	0.05	130	0,1	Yes
Cr total	0.02	460	< 0,05	Yes
Cr (III) ¹	0.02	460	< 0,05	Yes
Cr (VI) ²	0.005	0.053	n.d.	Yes
Cu	0.1	7700	0,6	Yes
Hg	0.05	94	0,1	Yes
Mn	0.05	15000	1,9	Yes
Ni	0.25	930	< LOQ	Yes
Pb	1.5	23	< LOQ	Yes
Sb	1.5	560	< LOQ	Yes
Se	1.5	460	< LOQ	Yes
Sn	0.05	180000	< LOQ	Yes
Organotin ³	1	12	< LOQ	Yes
Sr	0.05	56000	17,6	Yes
Zn	1.5	46000	< LOQ	Yes

n.d. not determined

¹ The chromium (III) content corresponds to the total chromium content minus the chromium (VI) content.

² Chromium (VI) is only determined for samples in which the total chromium content has exceeded the limit value for chromium (VI).

³ The organotin content was only determined for samples in which the tin content exceeded the limit value for organotin.

* Statements on conformity assessment/classification were made based on the measurement results obtained. Measurement uncertainties were not included in the assessment (ILAC G8 03/2009 "Guidelines on the Reporting of Compliance with Specification" Section 2).



Dr. rer. nat. Ch. Swaboda
Chemist in Charge