

Hemel Boya ve Kimya Sanayi Anonim Şirketi
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Test Report Order no. 2521591-1

Client: Hemel Boya ve Kimya Sanayi Anonim Şirketi
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Order: Determination of the migration behaviour of heavy metals according to DIN EN 71-3 (2021-06) in 1 liquid product

Contractor: Entwicklungs- und Prueflabor Holztechnologie GmbH
Laboratory Chemical Testing
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The test report contains 3 pages. Any duplication of extracts requires the written permission of EPH. The test results refer exclusively to the material tested.

1 Task

Determination of the migration behaviour of heavy metals according to DIN EN 71-3 (2021-06) in 1 liquid product

2 Evaluation*

Table 1: Evaluation overview

Label	Evaluation scheme	Product	Result
DIN EN 71-3 (2021-06)	Category III: Scraped materials	Hemel Hybrid Oil	✓

✓ Requirements are fulfilled, ✗ Requirements are not fulfilled

3 Sample material

Table 2: Sample material

No.	Product
1	Hemel Hybrid Oil

Sample receipt at EPH: 07/12/2021

4 Performed Tests

The following methods were used:

DIN EN 71-3: 2021-06, Safety of toys – Part 3: Migration of certain elements; German version EN 71-3:2019+A1:2021

Table 3: Parameters investigated

Pos.	Testing standard	Test period
1	Determination of the migration behaviour of heavy metals according to DIN EN 71-3 (2021-06)	14/01/2022

The liquid was applied to a glass plate according to the manufacturer's instructions and, after curing, scraped off using a scalpel and weighed in directly

The following elements were to be determined according to DIN EN 71-3:2021-06: Aluminium (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Boron (B), Cadmium (Cd), Cobalt (Co), Chromium (Cr), Copper (Cu), Mercury (Hg), Manganese (Mn), Nickel (Ni), Lead (Pb), Selenium (Se), Tin (Sn), Strontium (Sr), Zinc (Zn)

Table 4: Overview of the limits of quantification of various elements

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

LOQ Limit of quantification [mg/kg]

Table 5: Overview of the limits of quantification of various elements- continued

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]

*Statements on conformity assessment/classification were made on the basis of the measurement results obtained. Measurement uncertainties are not included in the assessment (ILAC G8 03/2009 "Guidelines on the Reporting of Compliance with Specification" Section 2.7).

5 Results

Table 6: Result overview

Element	LOQ	Limit value Category III	Measured value [mg/kg]
Probe	[mg/kg]	[mg/kg]	P1
Al	3	28130	< LOQ
As	1.5	47	< LOQ
B	3	15000	12
Ba	0.1	18750	5.1
Cd	0.05	17	< LOQ
Co	0.05	130	56.7
Chromium total			< LOQ
Chromium (III) ¹	0.05	460	< LOQ
Chromium(VI) ²	0.01	0.053	
Cu	0.1	7700	< LOQ
Hg	0.05	94	< LOQ
Mn	0.05	15000	3.5
Ni	0.25	930	< LOQ
Pb	1.5	23	< LOQ
Sb	1.5	560	< LOQ
Se	1.5	460	< LOQ
Sn	0.05	180000	0.1
Organozinn ³	1	12	< LOQ
Sr	0.05	56000	0.5
Zn	1.5	46000	6.6

n.s not specified

LOQ Limit of quantification

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

² Chromium (VI) was only determined for samples where the total chromium content 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.

Ch. Swaboda

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Engineer in charge