

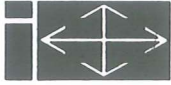
Akkreditiert gemäß
DIN EN 45011

DACH
DAC-ZE-002-08



Deutsche
Akkreditierungsstelle
D-PL-14160-01-00

**ISEGA – Forschungs-
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Aschaffenburg, 5 September 2011

From: Zarthe
ts/ho

REPORT

Order No.: 4637/11 **Page 1 of 7 Pages**

Client: PT. Indah Kiat Pulp & Paper Tbk.
Jl. Raya Serang Km. 76, Desa Kragilan, Sentul, 3rd Floor
Serang 42184, Banten / Indonesia

Date of order: 13 June 2011

Receipt of sample material: 16 June 2011

Origin of sample material: From the client

Purpose: Analysis of two board grades for their compliance with
the demands on food contact materials


(Dr. Derra)


(Zarthe)
Officially certified
diplomaed food chemist

The present report refers exclusively to the samples as laid out therein. Information and statistical data on the results can be obtained on request.

Non-accredited determinations have not been validated at the date of the accreditation. Individual determinations were not intended for accreditation owing to their restricted field of application. In these cases, the necessary accuracy for the evaluation is ensured by the internal quality management system.

Geschäftsführer: Dr. Ralph Derra – Handelsregister: Aschaffenburg HRB 3329

Die Veröffentlichung von Ergebnissen unserer Arbeiten und Gutachten sowie die Verwendung für Werbezwecke bedürfen – auch auszugsweise- unserer schriftlichen Genehmigung
Erfüllungsort und Gerichtsstand Aschaffenburg

Akkreditiert gemäß DIN EN ISO / IEC 17025 (D-PL-14160-01-00) und gemäß DIN EN 45011 (DAC-ZE-002-08)

Sample Material

For analysis the following sample material was in hand:

Sample 1: SAVVIPAK
Sample 2: SAVVIPAK OBA FREE

The samples 1 and 2 are examined as a mixed sample unless stated otherwise.

Carrying out of the Tests

Examination period: 19 July 2011 to 1 September 2011

1. Determination of the Grammage *

The determination was performed by analogy with DIN EN ISO 536 after conditioning of the sample at 23 °C / 50 % atmospheric humidity which is prescribed as norm climate.

Result: 231 g/m² \triangleq 216 g dry matter/m²

2. Determination of the Moisture Content *

The determination was performed according to DIN EN ISO 638 directly after unpacking the sample.

Result: 6.6 %

3. Preparation of Extracts *

The extracts were prepared according to the "Methods for the examination of consumer goods" following the method B 80.56 of the Official Collection of Analytical Methods according to § 64 LFGB and according to the demands of the standards EN 645, EN 647 and EN 15519.

Water: 24 hours at 23 °C

Isooctane: 24 hours at 20 °C

4. Determination of the Dry Matter in the Water Extract *

The dry matter was determined according to DIN EN 920 after drying at 105 °C.

Result: 41 mg/dm² \triangleq 19 mg/g dry matter

5. Determination of Methanal (Formaldehyde) in the Water Extract *

The determination was performed photometrically according to the acetylacetone method in conformity with DIN EN 1541. The requirements of the method B 82.02-1 indicated in the Official Collection of Analytical Methods according to § 64 of the LFGB for consumer goods were observed.

Result: Not determinable < 0.004 mg/g dry matter

6. Determination of Glyoxal in the Water Extract *

The determination was performed according to the DIN 54603. The demands of the method no. 4.3.2.2. of the loose-sheet collection "Examination of papers and boards intended for food packaging according to the German Recommendation XXXVI" are taken into consideration.

Result: Not determinable < 0.005 mg/g dry matter

7. Determination of Pentachlorophenol (PCP) *

The analysis was made according to DIN EN ISO 15320 by means of gas chromatography in the water extract after concentration at a column and esterification. The detection was performed by means of ECD.

Result: Not determinable < 0.005 mg/kg dry matter

8. Determination of the Heavy Metals Contents in the Water Extract *

The determination was performed according to DIN EN 12497 and DIN EN 12498.

Result in mg/kg dry matter:

| | | | |
|----------|-------|------------------|---------|
| Cadmium | (Cd): | Not determinable | < 0.05 |
| Mercury | (Hg): | Not determinable | < 0.025 |
| Lead | (Pb): | Not determinable | < 0.5 |
| Chromium | (Cr): | Not determinable | < 0.1 |

9. Determination of the Dry Matter in the Organic Solvent Extract *

The dry matter was determined according to DIN EN 1186 after drying at 105 °C.

Result: 1.9 mg/dm² \cong 0.9 mg/g dry matter

10. IR-Spectroscopic Testing of the Dry Matters from the Water and the Organic Solvent Extract *

The dry matters were ground up with KBr and examined by IR-spectroscopy.

Result: Substances which might endanger health as well as deviations from the composition stated, which are detectable by this method, were not found.

11. Determination of Polychlorinated Biphenyls (PCB) *

The determination was performed according to DIN EN ISO 15318 by means of gas chromatography. The demands of the method B 80.56-1 within the Official Collection of Analytical Methods according to § 64 LFGB for consumer goods are considered. The numbers refer to the Ballschmieder nomenclature.

Result in mg/kg dry matter:

| | | | |
|-----|--------------------------------------|------------------|--------|
| 18 | 2,2',5-Trichlorobiphenyl | not determinable | < 0.01 |
| 28 | 2,4,4'-Trichlorobiphenyl | not determinable | < 0.01 |
| 52 | 2,2',5,5'-Tetrachlorobiphenyl | not determinable | < 0.01 |
| 101 | 2,2',4,5,5'-Pentachlorobiphenyl | not determinable | < 0.01 |
| 138 | 2,2',3,4,4',5'-Hexachlorobiphenyl | not determinable | < 0.01 |
| 153 | 2,2',4,4',5,5'-Hexachlorobiphenyl | not determinable | < 0.01 |
| 180 | 2,2',3,4,4',5,5'-Heptachlorobiphenyl | not determinable | < 0.01 |

12. Determination of the Transfer of Antimicrobial Constituents *

The determination was made according to DIN EN 1104. Test specimen of a diameter of 10 mm were placed onto an inoculated nutrient medium and then incubated. The inhibition zone is indicated as total diameter (including the test specimen).

Result:

with *Aspergillus niger*: no inhibition zone

with *Bacillus subtilis*: no inhibition zone

i.e.: a transfer of antimicrobial constituents was not detected.

13. Test for Fluorescent Substances *

The test was made by UV irradiation.

Result:

Sample 1: The sample contained optically brightened fibres.

Sample 2: The inner liner of the sample contained optically brightened fibres.

14. Determination of the Fastness of Fluorescent Whitened Paper and Board *

The determination was performed corresponding to the DIN EN 648 with procedure A (long-term contact).

Result:

| Sample 1: | water | saliva solution | acetic acid solution | olive oil |
|-------------|-------|-----------------|----------------------|-----------|
| Upper side: | 4 | 4 | 4 | 5 |
| Wireside: | 4 | 4 | 4 | 5 |
| Sample 2: | water | saliva solution | acetic acid solution | olive oil |
| Upper side: | 4 | 4 | 4 | 5 |
| Wireside: | 4 | 4 | 4 | 5 |

A range of 1-5 points is given, whereby 5 means complete and 1 no fastness of optical brighteners.

15. Determination of the Heavy Metals Contents *

The determination was performed after microwave disintegration by AAS/hydride technique or ICP-AES, respectively.

Result:

| | | | |
|----------------|------------------|--------|------------------|
| Arsenic (As): | not determinable | < 2 | mg/kg dry matter |
| Cadmium (Cd): | not determinable | < 0.5 | mg/kg dry matter |
| Chromium (Cr): | | 1.3 | mg/kg dry matter |
| Mercury (Hg): | not determinable | < 0.25 | mg/kg dry matter |
| Lead (Pb): | not determinable | < 5 | mg/kg dry matter |

16. Extraction Tests According to the FDA Regulations *

The tests were performed according to FDA 21 CFR Ch. I, § 176.170 in triplicate.

a) Extraction with Water

The extraction was made for 24 hours at 49 °C.

| | | |
|-----------------------------|------------------|--------------------|
| Result: | 1.17 | mg/sq inch |
| Chloroform soluble portion: | not determinable | < 0.011 mg/sq inch |

b) Extraction with n-Heptane

The extraction was made for 30 min at 21 °C.

Result: 0.06 mg/sq inch

Chloroform soluble portion: The determination is not necessary as test results are already in conformity with the limit value.

17. Sensory Test for Odour *

The examination was made according to EN 1230-1.

The sample was stored in a sealed glass vessel in the dark at 23 ± 2 °C for 20 - 24 hours. Then six assessors evaluated the odour.

Result:

A moderately to moderately strong odour was noticed. It was evaluated with 2.5.

Scale of intensity:

- 0 = no perceptible odour
- 1 = odour just perceptible (still hard to define)
- 2 = moderate odour
- 3 = moderately strong odour
- 4 = strong odour

18. Sensory Analysis for Indirect Transition of Taste *

The examination was made according to EN 1230-2.

The sample was stored with approx. 20 g flaked milk chocolate in a sealed household glass in the dark at 23 ± 2 °C for 44 - 48 hours. The humidity in the glass was fixed at 75 %. The sample was not in direct contact with the chocolate. Thus the transition of substances affecting the taste was effected through the air. Subsequently, the chocolate was evaluated in an extended triangular test according to DIN ISO 4120 by six assessors. Chocolate which had been stored under the same conditions but without the sample was taken as a reference sample.

Result:

A statistically significant off-flavour of the chocolate which had been stored in indirect contact with the sample was noticed in comparison to the reference sample.

Evaluation (median): 2.0

Scale of intensity:

- 0 = no perceptible off-flavour
- 1 = off-flavour just perceptible (still difficult to define)
- 2 = moderate off-flavour
- 3 = moderately strong off-flavour
- 4 = strong off-flavour

The accreditation applies to the methods marked with * in the test report (Register no. D-PL-14160-01-00).

End of report