

Contact person	Date	Reference	Page
Ulrika Johansson Division Materials and Production +46 10 516 53 22 ulrika.johansson@ri.se	2023-10-13	O100785-1214260-2	1 (2)

Kronospan Novopan Træindustri AS
Fabriksvej 2
DK-8550 RYOMGÅRD
Danmark

Formaldehyde emission, IOS-MAT-0181/EN 16516

Assignment

Determination of the formaldehyde emission after 28 days according to EN 16516:2017 in order to fulfil the requirements set out in IOS-MAT-0181 "Formaldehyde requirements of wood-based materials comprised in the German Prohibition of Chemical Ordinance", section 1.4.1 Flat particleboard.

Test specimen

A sample of 18 mm particleboard, three boards, each approximately 60 x 105 cm. The boards were packed together in plastic foil and delivered to RISE on September 7, 2023.

Sample information:

Manufacturer: Kronospan Novopan Træindustri AS
Thickness/type : 18 mm, Type 10115
Production date: 2023-09-04

The test specimen represents the particleboard product type P2: 12-38 mm, Recipe 10206/10115

Method

The test was started on September 7 by unpacking the sample. Two specimens of 300 x 400 mm were cut out from the sample. The edges were partly sealed with aluminium tape leaving 0.36 m/specimen unsealed (1.5 m/m²). The specimens were conditioned outside the testing chamber in a separate conditioning container (with air velocity of approx. 0.2 m/s) in a room with controlled climate conditions of 23 ± 2 °C and 50 ± 5 % RH. The specimens were then placed in the test chamber, six days before the emission test.

Test conditions in the chamber:

Chamber volume: 0.266 m³
Temperature: 23 ± 1 °C
Relative Humidity: 50 ± 3 % RH
Air exchange rate: 0.5 h⁻¹
Air velocity at specimen surface: 0.1 – 0.3 m/s
Area of sample: 0.48 m²
Area specific air flow rate: 0.28 m³/m²h

Place of testing: Chemistry and Applied Mechanics,
Brinellgatan 4, Borås

RISE Research Institutes of Sweden AB

Postal address	Office location	Phone / Fax / E-mail
Box 857 501 15 BORÅS SWEDEN	Brinellgatan 4 504 62 Borås SWEDEN	+46 10-516 50 00 +46 33-13 55 02 info@ri.se

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Accred. No. 1002
Testing
ISO/IEC 17025

The sampling of formaldehyde was carried out on October 5 with DNPH samplers. Sampled volume was 25 – 33 litres. The determination was performed according to ISO 16000-3:2022, which means analysis on a liquid chromatograph with absorbance detector. Measurement uncertainty is estimated to 36 % (rel). Quantification limit is estimated to 0.06 µg/DNPH sampler.

The analyses were performed on October 6, 2023

Results

The presented results are the determined steady-state concentration (ppm) in the emission chamber:

Sample	Formaldehyde (ppm)		Formaldehyde mean value (ppm)
Particleboard 18 mm, Type 10115 Produced 2023-09-04	0.083	0.088	0.086

The formaldehyde concentration in the empty chamber (background-level) was 0.001 ppm which is subtracted.

The results relate only to the items tested.

Evaluation of the test results

Decision rule: When comparing the measured results and requirement level, the average value of the measured results has been compared with the requirement level. No account is taken to the measurement uncertainty.

The result is compared with the requirements of IOS-MAT-0181 “Formaldehyde requirements of wood-based materials comprised in the German Prohibition of Chemical Ordinance”, section 1.4.1 Flat particleboard:

Board type	Test method	Limit	Test result	Pass/Fail
Flat particleboard	EN 16516 according to German criteria	0.10 ppm	0.086 ppm	Pass

**RISE Research Institutes of Sweden AB
Chemistry and Applied Mechanics - Chemical Product Safety**

Performed by

Examined by

Ulrika Johansson

Fredrik Solhage

Verification

Transaction 09222115557502627816

Document

O100785-1214260-2, Novopan, 18mm, EN 16516
Main document
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Signatories

Ulrika Johansson (UJ)
RISE Research Institutes of Sweden AB
Company reg. no. 556464-6874
ulrika.johansson@ri.se
Signed 2023-10-13 12:15:41 CEST (+0200)

Fredrik Solhage (FS)
fredrik.solhage@ri.se
Signed 2023-10-13 12:58:30 CEST (+0200)

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Composite Wood Products

Issued to

Kronospan ApS

Novopan Træindustri

Fabriksvej 2, Pindstrup, DK-8550 Ryomgård, Denmark

Manufacturing site

same as above

Products

Particleboard:

Product type P1: 12-39 mm, Recipe 10194/10095

Product type P2: 12-38 mm, Recipe 10206/10115

Product type P3: 10 mm, Recipe 10095/10115

Certificate

The products described above fulfil the requirements in respect of formaldehyde emissions according to the requirements set out in EPA 40 CFR, TSCA Title VI, § 770.10.

By this, the products described above also fulfil the requirements in respect of formaldehyde emissions according to the requirements set out in the California Air Resources Board Regulation: § 93120, Phase 2. *

Marking

Each product or bundle covered by this certificate and complying with the requirements must be marked with a label or similar. The label shall contain the information specified in the regulation EPA, TSCA Title VI, §770.45 and shall also include RISE, by EPA recognized, number as a third-party certifier: **TPC-13**. In addition, the manufacturer shall include, on the bill of lading or invoice, the approval number above and a statement that the product complies with EPA TSCA Title VI and CARB phase 2 emission standards.

Validity

This certificate is valid until not later than 2028-12-31 provided that the continuous supervision is carried out and the results of the audit tests are complying with the requirements. The validity of this certificate can be verified at RISE homepage.

Miscellaneous

The manufacturer's own inspection procedures including small scale testing are under surveillance by RISE. This is the 8th issue of this certificate, which originally was issued on 2008-12-13. This issue replaces earlier issues.



Martin Tillander

Certificate 512901 | issue 8 | 2023-12-07

RISE Research Institutes of Sweden AB | Certification

Box 857, SE-50115 Borås, Sweden

+46 10 516 50 00 | certifiering@ri.se | www.ri.se

1199365

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* The requirements set out in the California Air Resources Board are not covered by the accreditation.



Kronospan APS
Novopan Traeindustri
Henrik Skovbo
Fabriksvej, Pindstrup
DK-8550 Ryomgård
Danmark

Quarterly inspection according to EPA 40 CFR TSCA Title VI & CARB §93120 – Q1, 2024

1 Purpose

Inspection of Kronospan APS, Novopan Traeindustri AS in Pindstrup, Denmark. The inspection serve as assessment data for certification No : 51 29 01 in accordance with the requirements of EPA TSCA Title VI and California Code of Regulations, §93120 for the following product types:

Product type P1: 12-39 mm Recipe 10194/10095

Product type P2: 12-38 mm Recipe 10206/10115

Product type P3: 10 mm Recipe 10095/10115

2 Visit

The inspection was made in Pindstrup, Denmark on March 5, 2024 by Ulrika Johansson, RISE (TPC-13). The manufacturer was represented by the presence of Henrik Skovbo, quality control manager.

3 Formaldehyde Emission Test

The following samples were selected from the production for analysis of formaldehyde emission:

- Product type P1: 12-39 mm, Recipe 10194/10095; 32 mm production date 2024-02-22
- Product type P2: 12-38 mm, Recipe 10206/10115; 18 mm production date 2024-02-15

There had been no production of product type P3, 10 mm since January.

The result of the emission tests are presented in the report denoted AO-0022334-1254462-1.

4 Review of manufacturer's propriety inspection

For the review of the manufacturer's propriety inspection, the following components were included:

- Quality manual / Organisation
- Competence of personnel
- Production process / Adhesive / Pressing
- Non-conforming products
- Sampling procedures
- Stores and marking

RISE Research Institutes of Sweden AB

Postal address

Box 857
501 15 BORÅS
SWEDEN

Office location

Brinellgatan 4
504 62 Borås
SWEDEN

Phone / Fax / E-mail

+46 10-516 50 00
+46 33-13 55 02
info@ri.se

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CERT #4975.01

- Records
- Laboratory

The following was noted during the visit:

There is still a good compliance between testing of the quarterly samples at RISE and at Kronospan Novopan Traeindustri.

The QA manual has no updates regarding formaldehyde since the last audit. The system to convert marking of unsanded/sanded boards to correlate to the certificate information (IK-104) has now been fully implemented.

There are job descriptions for the laboratory personnel and the present personnel are qualified since long ago. The blind test, i.e. a formaldehyde solution of unknown concentration that was left during the Q4 visit had a very good result, less than 3% deviation from the true value for both analysts.

The laboratory has five perforators, four gas analysis and twelve small chambers dedicated for both ASTM D6007 and EN 16516. Control samples are running continuously for both methods in three of the chambers. Temperature, humidity, airflow and air pressure is logged for the chambers and conditioning rooms. The automated formaldehyde analyser, Aerolaser AL4021, is once again out of order.

Internal checks of all equipment is done every two months. The lab equipment is calibrated by an external party once a year.

All used chemicals are marked with opening date and signature.

Sampling for factory production control testing is made 24 h after production, once/shift. The records from the production control are sent to RISE by mail once/month. The sum of the production volume (in m³) each quarter for each product type has been sent by mail to RISE.

Marking of the production was without remarks.

There have been no non-conforming events regarding formaldehyde but there have been some problems with creases in the melamine paper when laminating.

5 Assessment

We – TPC-13, assess that Kronospan APS Novopan Traeindustri AS meets the criteria for formaldehyde emission according to EPA 40 CFR, TSCA Title VI § 770.10 and CARB Phase 2 California Code of Regulations §93120 for the following product types:

Product type P1: 12-39 mm Recipe 10194/10095

Product type P2: 12-38 mm Recipe 10206/10115

Product type P3: 10 mm Recipe 10095/10115

This assessment is valid until the next inspection in Q2-24, the latest June 30, 2024.

RISE Research Institutes of Sweden AB Chemistry and Applied Mechanics - Chemical Product Safety

Performed by

Examined by

Ulrika Johansson

Fredrik Solhage

Verification

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Document

AO-0022334-1254462 Novopan Audit report, Q1-24
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Signatories

Ulrika Johansson (UJ)
RISE Research Institutes of Sweden AB
Company reg. no. 556464-6874
ulrika.johansson@ri.se
Signed 2024-03-27 09:28:23 CET (+0100)

Fredrik Solhage (FS)
fredrik.solhage@ri.se
Signed 2024-03-27 10:57:10 CET (+0100)

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