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TEST REPORT

This document is a translation in the lab of original report N080076 - Document DE/1 in french

Applicant :	PROFINE GMBH Zweibrücker Strasse 200 66954 PIRMASENS
Date and reference of the order :	Quotation accepted on 21 August 2012
Subject :	Determination of emissions of volatile pollutants from a sample
Reference document :	- Order of 19 April 2011 on the labeling of construction products and wall or floori coverings and paints and varnishes on their emissions of volatile pollutants - Order of 20 February 2012 amending the order of 19 April 2011 on the labeling of construction products and wall or floor coverings and paints and varnishes on their emissions of volatile pollutants - NF EN ISO 16000-11(August 2006) - NF EN ISO 16000-9 (August 2006) - NF ISO 16000-6 (June 2005) - NF ISO 16000-3 (January 2002)
Sample reference:	00560159
Sample identification:	Sample plates KÖMATEX white 662 size 1000X1000X5mm

1. SAMPLE DESCRIPTION

Submitted by the applicant and left with the laboratory, a sample of stretched ceiling referenced sample plates KÖMATEX white 662 size 1000X1000X5mm. Sample was packed in aluminium foil packaging upon receipt .

Date of receipt : August 29, 2012

2. OPERATING CONDITIONS OF THE TEST

The goal ot the test is measuring the release of certain compounds (VOCs, aldehydes) from a solid sample of construction product or wall or floor covering in a test chamber according to NF EN ISO 16000-9.
Emission scenarios (product loading factor and area specific air flow rate in the enclosure) are defined by the order of 19 April 2011 based on projected use of the product.
After removing the protective foil of the sample, a test specimen of 0.4 m² has been installed in a test chamber at 23°C ± 2°C and 50% ± 5% relative humidity for 3 days (time t_0 of the test) before sampling.

Characteristics of the test chamber :

- 1 m^3 chamber meeting the requirements of NF EN ISO 16000-9
- product loading factor 1 m^2/m^3
- area specific air flow rate 0.5 $m^3/m^2/h$

Air samples were taken on the third day and doubled.

- For analysis, the air was sampled using constant flow rate pumps, equipped with absorbent containing Tenax to trap VOCs. (sampling and assay carried out according to NF ISO 16000-6).
- In addition, the air was sampled using constant flow rate pumps, provided with absorbent containing dinitrophenylhydrazine (DNPH) grafted silica to trap aldehydes. (sampling and assay performed according to NF ISO 16000-3)
- The Tenax samples were then desorbed by thermal desorption and then assayed by gas chromatography coupled with mass spectrometry.
- The samples on silica tubes/DNPH were then desorbed to form the stable compound hydrazone, which was then assayed by HPLC liquid chromatography with UV / diode array detector.

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A measurement of the blank was made beforehand to be sure that background concentrations of VOCs and aldehydes were less than 2 µg/m^3 individually and 20 µg/m^3 total VOC (TVOC). The compounds of interest are those specified by the order of 19 April 2011.

Starting date of the test (t_0) : September 20, 2012

Ending date of the test (t_0 + 3 days) : September 23, 2012

3. CALCULATION OF EXPOSURE LEVELS AND CLASSES

The requirements of the order are formulated in terms of exposure concentrations in a model room of 30 m^3 and an air change rate of 0.5 / h with a loading factor applicable to the product.

- Chromatographic analyses lead to determine experimental concentrations of compounds at the end of the test (in µg/m^3)
- Area specific emission rates of the compounds are obtained by multiplying the experimental concentrations by the actual area specific air flow rate in the chamber (in µg/m²/h) - in this case 0.5 (m^3/m²/h)
- Exposure concentrations in the model room are obtained by dividing the area specific emission rates by the area specific air flow rate specified by the order for the product (in µg/m^3) - in this case 0.5 (m^3/m²/h)
- The classes for each compound and the worst case class are obtained by comparison of exposure concentrations to threshold limits of each class.

4. RESULTS

Molecule	CAS N°	Exposure concentration expressed in µg/m^3 Test 1	Exposure concentration expressed in µg/m^3 Test 2	Emission class	Labeling emission Class
Formaldehyde	50-00-0	< 2	< 2	A+	A+
Acetaldehyde	75-07-0	< 2	< 2	A+	
Toluene	108-88-3	< 2	< 2	A+	
Tetrachloroethylene	127-18-4	< 2	< 2	A+	
Xylene	1330-20-7	< 2	< 2	A+	
1,2,4-trimethylbenzene	95-63-6	< 2	< 2	A+	
1,4-dichlorobenzene	106-46-7	< 2	< 2	A+	
Ethylbenzene	100-41-4	< 2	< 2	A+	
2-Butoxyethanol	111-76-2	< 2	< 2	A+	
Styrene	100-42-5	< 2	< 2	A+	
COVT		≤ 100	≤ 100	A+	

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5. CONCLUSION

The sample can be **class A+** -rated in accordance with the Orders of 19 April 2011 and 20 February 2012 on labeling of construction products and wall or floor coverings and paints and varnishes on their emissions of volatile pollutants. In appendix is a model of label to use.

Trappes, March 22, 2013

The Head of the Chemical Properties of Materials Departement

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In charge of the test

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APPENDIX