



Produktprüfung
Zertifizierung
Qualitätssicherung

eco
INSTITUT



100 % Natural Latex Core for Mattresses

Latex Systems Co., Ltd.

Test Report Nr. 18435-1



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Akkreditiert ISO/IEC 17025

 **AKS** Akkreditierung: AKS-PL-20708
Verzeichnis: www.aks-hannover.de
Staatliche Akkreditierungsstelle Hannover



Test Report No. 18435-1

Client:	Latex Systems Co., Ltd., Bangkok
Sample marking by client:	100 % natural latex core for mattresses
Sample no.:	18435-1
Type of sample:	Core mattress
Sampled by:	Latex Systems Co., Ltd., Bangkok, Thailand
Sampled on (date):	16 April 2008
Location of sampling:	At warehouse in factory
Production date:	15 April 2008
Sample received:	8 May 2008
Date of report:	29 May 2008
Number of pages of report:	22
Test aims:	See table of contents
Testing laboratory:	eco-INSTITUT GmbH, Cologne * external laboratory



Product testing Certification Quality assurance
 Latex mattresses • Undyed textile coverings

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Test report

1 Emission analysis

1.1 Volatile Organic Compounds (VOC)

Definition of terms:

VOC (volatile organic compounds)	All individual materials with a concentration $\geq 0,001$ mg/m ³ in retention range C ₆ (n-Hexane) to C ₁₆ (n-Hexadecane) Substances see NIK lists / AgBB (DIBt) Sum of all individual substances in retention range C ₆ to C ₁₆ .
TVOC (total volatile organic compounds)	
CMR VOC (carcinogenic, mutagenic, reproduction toxic VOC)	All individual substances with the following categories: Directive 67/548 EC: Carc. Cat.1, 2; Mut. Cat.1, 2; Repr. Cat.1, 2 IARC: Group 1, 2A DFG (MAK lists): Category III1, III2
VVOC (Very volatile organic compounds)	All individual substances with concentration $\geq 0,001$ mg/m ³ in retention range $< C_6$
SVOC (Semi-volatile organic compounds)	All individual materials $\geq 0,001$ mg/m ³ in retention range $> C_{16}$ (n-Hexadecane) to C ₂₂ (Docosane)
Total SVOC (Total semi-volatile organic compounds)	Sum of all SVOC in retention range $> C_{16}$ to C ₂₂ .
Identified and calibrated substances (c _{id,sub}), substance specific calculated	Spectrum and retention time are concordant with the calibrated comparison substance
Not identified substances calculated as toluene equivalent (c _{ni,tol})	Suggestion from the spectrum library with high probability and/or allocation to a group of substances
SER	Specific emission rate (see appendix)



List of the analysed VOCs:

Aromatic hydrocarbons

Toluene
 Ethylbenzene
 p-Xylene
 m-Xylene
 o-Xylene
 Isopropylbenzene
 n-Propylbenzene
 1,3,5-Trimethylbenzene
 1,2,4-Trimethylbenzene
 1,2,3-Trimethylbenzene
 2-Ethyltoluene
 1-Isopropyl-4-methylbenzene
 1,2,4,5-Tetramethylbenzene
 n-Butylbenzene
 1,3-Diisopropylbenzene
 1,4-Diisopropylbenzene
 Phenyl octane
 1-Phenyl decane**
 1-Phenyl undecane**
 4-Phenylcyclohexene
 Styrene
 Phenyl acetylene
 2-Phenyl propene
 Vinyl toluene
 Naphthalene
 Indene
 Benzene

Saturated aliphatic substances

Hydrocarbons

2-Methyl pentane*
 3-Methyl pentane*
 n-Hexane
 Cyclohexane
 Methylcyclohexane
 1,4-Dimethylcyclohexane
 n-Heptane
 n-Octane
 n-Nonane
 n-Decane
 n-Undecane
 n-Dodecane
 n-Tridecane
 n-Tetradecane
 n-Pentadecane
 n-Hexadecane
 Methylcyclopentane
 n-Heptane
 Saturated aliphatic hydrocarbons up to C8
 Saturated aliphatic hydrocarbons from C9

Terpenes

δ-3-Caren
 α-Pinene
 β-Pinene
 Limonene

Aliphatic alcohols and ether

1-Propanol*
 2-Propanol*
 tert-Butanol
 2-Methyl-1-propanol
 1-Butanol
 1-Pentanol
 1-Hexanol
 Cyclohexanol
 2-Ethyl-1-hexanol
 1-Octanol
 4-Hydroxy-4-methyl-pentan-2-one
 1-Heptanol
 1-Nonanol
 1-Decanol

Aromatic alcohols (phenols)

Phenol
 BHT (2,6-di-tert-butyl-4-methylphenol)
 Benzylalcohol

Glycols, Glycol ether, Glycol ester

Propylenglycol (1,2-Dihydroxypropane)
 Ethylene glycol (Ethandiol)
 Ethylene glycol monobutyl ether
 Diethylene glycol
 Diethylene glycol-monobutyl ether
 2-Phenoxyethanol
 Ethylene carbonate
 1-Methoxy-2-propanol
 Glycolic acid butyl ester
 Texanol
 Butyldiglycol acetate
 Dipropylenglycol mono-methyl ether
 2-Methoxyethanol
 2-Ethoxyethanol
 2-Propoxyethanol
 2-Methylethoxyethanol
 2-Hexoxyethanol
 1,2-Dimethoxyethane
 1,2-Diethoxyethane
 2-Methoxyethyl acetate
 2-Ethoxyethyl acetate
 2-Butoxyethyl acetate
 2-(2-Hexoxyethoxy)-ethanol
 1-Methoxy-2-(2-methoxy-ethoxy)-ethane
 Propylene glycol di-acetate
 Dipropylene glycol
 Dipropylene glycol monomethylether acetate
 Dipropylene glycol mono-n-propylether
 Dipropylene glycol mono-t-butylether
 1,4-Butanediol
 Tripropyleneglycolmonomethyl ether
 Triethylene glycol dimethyl ether
 1,2-Propylene glycol dimethyl ether
 TXIB
 Ethyldiglycol
 Dipropylene glycol-dimethyl ether

Aldehyde

Butanal*
 Pentanal
 Hexanal
 Heptanal
 2-Ethylhexanal
 Octanal
 Nonanal
 Decanal
 2-Butenal
 2-Pentenal
 2-Hexenal
 2-Heptenal
 2-Octenal
 2-Nonenal
 2-Decenal
 2-Undecenal
 Furfural
 Glutaraldehyde
 Benzaldehyde
 Acetaldehyde*
 Propanal*

Ketones

Ethylmethylketone
 3-Methyl-2-propanol
 Methylisobutylketone
 Cyclopentanone
 Cyclohexanone
 Acetone*
 2-Methylcyclopentanone
 2-Methylcyclohexanone
 Acetophenone
 1-Hydroxyacetone

Acids

Acetic acid
 Propionic acid
 Isobutyric acid
 Butyric acid
 Pivalic acid
 n-Valeric acid
 n-hexanoic acid
 n-Heptanoic acid
 n-Octanoic acid
 2-Ethylhexanoic acid

Esters and Lactones

Methylacetate*
 Ethyl acetate*
 Vinyl acetate*
 Isopropyl acetate
 Propyl acetate
 2-Methoxy-1-methylethyl acetate
 n-Butyl formate
 Methylmethacrylate
 Isobutylacetate
 1-Butyl acetate
 2-Ethylhexyl acetate
 Methyl acrylate
 Ethyl acrylate
 n-Butyl acrylate
 2-Ethylhexyl acrylate
 Adipic acid dimethyl ester
 Fumaric acid dibutyl ester
 Succinic acid dimethyl ester
 Glutaric acid dimethyl ester

Hexandioldiacrylate

Maleic acid dibutyl ester
 Butyrolactone
 Dimethylphthalate
 Texanol

Chlorinated hydrocarbons

Tetrachlorethene
 1,1,1-Trichlorethane
 Trichlorethene
 1,4-Dichlorbenzene

Others

1,4-Dioxane
 Caprolactam
 N-Methyl-2-pyrrolidone
 Octamethylcyclotetrasiloxane
 Methenamine
 2-Butanonoxime
 Tributyl phosphate
 Triethyl phosphate
 5-Chlor-2-methyl-4-isothiazolin-3-one
 2-Methyl-4-isothiazolin-3-one (MIT)
 Triethylamine
 Tetrahydrofuran (THF)
 1-Decene
 1-Octene
 2-Pentylfuran
 Tetramethyl succinonitrile
 Propylencarbonate
 Isophorone
 Dimethylformamide (DMF)

* VVOC

** SVOC



Test method:

Preparation of test object:	DIN EN ISO 16000-11 Pre-treatment: n/a Back masked: no Side/s masked: no Relationship of open edges to surface: n/a Charging: related to surface Dimensions: 16.7 x 16.7 x 16.0 cm
Test chamber conditions:	DIN EN ISO 16000-9 Chamber volume: 0.125 m ³ Temperature: 23°C Relative humidity: 50 % Air pressure: normal Air: cleaned Air change rate: 0.5 h ⁻¹ Inflow velocity: 0.3 m/s Charging: 1.3 m ² /m ³ Specific air flowrate: 0.77 m ³ /m ² *h Air sampling: 2 days (CMR VOC) and 7 days after test chamber loading
Analytics:	DIN ISO 16000-6 Determination threshold: 1 µg/m ³ (CMR VOC) 2 µg/m ³ (others)

Note: The test results exclusively refer to the submitted tested material. On changes of the composition or the production procedure of the material the report loses its validity. Publication of the test report requires permission in writing.



Measurement time 2 days after test chamber loading

1.1.1 CMR VOC_{2d}

Test aim:

Carcinogenic, mutagenic and reproduction-toxic volatile organic compounds (CMR VOC), test chamber, air sampling 2 days after test chamber loading

Test result:

CMR VOCs were not detectable 2 days after test chamber loading.

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1.1.2 VOC / TVOC_{2d}

Test aim:

Volatile organic compounds (VOC), test chamber, air sampling 2 days after test chamber loading

Test result:

No.	Substance	CAS no.	Concentration (Test chamber air) [µg/m ³]
VOC_{2d}: Identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (C_{id sub})			
1	Aromatic hydrocarbons		
1-4	m/p-Xylene	106-42-3	2
1-5		108-38-3	
1-12	1,2,3-Trimethylbenzene	526-73-8	2
1-18	n-Butylbenzene	104-51-8	3
2	Saturated aliphatic hydrocarbons		
2-3	Cyclohexane	110-82-7	4
2-7.4	n-Decane	124-18-5	5
2-7.6	n-Dodecane	112-40-3	5
2-7.8	n-Tetradecane	629-59-4	2
5	Aromatic alcohols (phenols)		
5-1	Phenol	108-95-2	2
7	Aldehydes		
7-19	Benzaldehyde	100-52-7	3
9	Acids		
9-1	Acetic acid	64-19-7	7
10	Esters and Lactones		
10-16	2-Ethylhexyl Acrylate	103-11-7	4
12	Others		
12-4	Octamethylcyclotetrasiloxane	556-67-2	5
VOC_{2d}: Further identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (C_{id sub})			
-	-	-	-
VOC_{2d}: Not identified substances calculated as toluene equivalent (c_{ni tol})			
-	N,N-Diethylformamide	-	7



Total volatile organic compounds	Concentration (Test chamber air) [µg/m³]	SER_a [µg/m³h]
TVOC_{2d}	133	102

For the determination of the TVOC value, the detector signal within the retention range between C6 (n-hexane) and C16 (n-Hexadecane) is evaluated using the response factor for toluene and determines the TVOC concentration in accordance with DIN ISO 16000-6.



1.1.3 VVOC_{2d}

Test aim:

Very volatile organic compounds (VVOC), test chamber, air sampling 2 days after test chamber loading

Test result: (only include substances detected! Delete the rest!!!)

No.	Substance	CAS No.	Concentration (Test chamber air) [µg/m ³]
VVOC_{2d}: Identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (c_{id sub})			
-	-	-	-
VVOC_{2d}: Further identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (c_{id sub})			
-	-	-	-
VVOC_{2d}: Not identified substances calculated as toluene equivalent (c_{ni tol})			
-	N,N-Diethylamine	-	79



1.1.4 SVOC_{2d}

Test aim:

Semi-volatile organic compounds (SVOC), test chamber, air sampling 2 days after test chamber loading

Test result: (only include substances detected! Delete the rest!!!)

No.	Substance	CAS No.	Concentration (Test chamber air) [µg/m ³]
SVOC_{2d}: Identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (C_{id sub})			
-	-	-	-
SVOC_{2d}: Further identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (C_{id sub})			
-	-	-	-
SVOC_{2d}: Not identified substances calculated as toluene equivalent (c_{ni tol})			
-	-	-	-

Total semi-volatile organic compounds	Concentration (Test chamber air) [µg/m ³]	SER _a [µg/m ³ h]
Σ SVOC _{2d}	-	-



Measurement time 7 days after test chamber loading

1.1.5 VOC_{7d} / TVOC_{7d}

Test aim:

Volatile organic compounds (VOC), test chamber, air sampling 7 days after test chamber loading

Test result:

No.	Substance	CAS No.	Concentration (Test chamber air) [µg/m ³]
VOC_{7d}: Identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (C_{id sub})			
1	Aromatic hydrocarbons		
1-17	1,2,4,5-Tetramethylbenzene	95-93-2	3
2	Saturated aliphatic hydrocarbons		
2-3	Cyclohexane	110-82-7	4
2-7.5	n-Undecane	1120-21-4	4
2-7.6	n-Dodecane	112-40-3	5
2-7.7	n-Tridecane	629-50-5	4
5	Aromatic alcohols (phenols)		
5-1	Phenol	108-95-2	2
9	Acids		
9-1	Acetic acid	64-19-7	2
12	Others		
12-4	Octamethylcyclotetrasiloxane	556-67-2	2
VOC_{7d}: Further identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (C_{id sub})			
-	-	-	-
VOC_{7d}: Not identified substances calculated as toluene equivalent (c_{ni tol})			
-	N,N-Diethylformamide	-	2

Total volatile organic compounds	Concentration (Test chamber air) [µg/m ³]	SER _a [µg/m ³ h]
TVOC_{7d}	80	62

For the determination of the TVOC value, the detector signal within the retention range between C6 (n-hexane) and C16 (n-Hexadecane) is evaluated using the response factor for toluene and determines the TVOC concentration in accordance with DIN ISO 16000-6.



1.1.6 $VVOC_{7d}$

Test aim:

Very volatile organic compounds (VVOC), test chamber, air sampling 7 days after test chamber loading

Test result:

No.	Substance	CAS No.	Concentration (Test chamber air) [$\mu\text{g}/\text{m}^3$]
$VVOC_{7d}$: Identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific ($c_{id\ sub}$)			
-	-	-	-
$VVOC_{7d}$: Further identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific ($c_{id\ sub}$)			
-	-	-	-
$VVOC_{7d}$: Not identified substances calculated as toluene equivalent ($c_{ni\ tol}$)			
-	N,N-Diethylamine	-	59

Note: The test results exclusively refer to the submitted tested material. On changes of the composition or the production procedure of the material the report loses its validity. Publication of the test report requires permission in writing.



1.1.7 SVOC_{7d}

Test aim:

Semi-volatile organic compounds (SVOC), test chamber, air sampling 7 days after test chamber loading

Test result:

No.	Substance	CAS No.	Concentration (Test chamber air) [µg/m ³]
SVOC_{7d}: Identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (c_{id sub})			
-	-	-	-
SVOC_{7d}: Further identified and calibrated substances in accordance with NIK list/AgBB, calculated substance-specific (c_{id sub})			
-	-	-	-
SVOC_{7d}: Not identified substances calculated as toluene equivalent (c_{ni tol})			
-	-	-	-

Total semi-volatile organic compounds	Concentration (Test chamber air) [µg/m ³]	SER _a [µg/m ³ h]
Σ SVOC _{7d}	-	-

Note: The test results exclusively refer to the submitted tested material. On changes of the composition or the production procedure of the material the report loses its validity. Publication of the test report requires permission in writing.



1.2 Carbon Disulfide_{2d} CS₂

Test aim:

Emissions of carbon disulfide CS₂ in the test chamber, air sampling 2 days after test chamber loading

Test method:

Preparation of test object:	DIN EN ISO 16000-11 see No. 1.1 VOCs
Test chamber conditions:	DIN ISO 16000-9 and according to DIN V ENV 717-1 see No. 1.1 VOCs
Air sampling:	2 days after test chamber loading
Analytics:	DIN EN 16000-6
Determination threshold:	1 µg/m ³

Test result:

Substance	Concentration (Test chamber air) [µg/m ³]
Carbon Disulfide CS ₂	4



1.3 Nitrosamines_{2d} *

Test aim:

Emission of nitrosamines in the test chamber, air sampling 2 days after test chamber loading

Test method:

Manufacturer of the test object:	DIN EN ISO 16000-11 see No. 1.1 VOCs
Test chamber conditions:	DIN ISO 16000-9 and according to DIN V ENV 717-1 see No. 1.1 VOCs
Air sampling:	2 days after test chamber loading
Analytics:	BGI 505-23 determination of nitrosamines
Determination threshold:	100 ng/m ³

Test result:

Substance	Concentration (Test chamber air) [ng/m ³]
N-Nitrosodimethylamine (NDMA)	< 100
N-Nitrosomethylethylamine (NMEA)	< 100
N-Nitrosodiethylamine (NDEA)	138
N-Nitrosodiisopropylamine (NDIPA)	< 100
N-Nitrosodipropylamine (NDPA)	< 100
N-Nitrosodibutylamine (NDBA)	< 100
N-Nitrosopyrrolidine (NPYR)	< 100
N-Nitrosopiperidine (NPIP)	< 100
N-Nitrosomorpholine (NMOR)	< 100

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1.4 Formaldehyde_{2d}

Test aim:

Formaldehyde, test chamber, air sampling 2 days after test chamber loading, double determination

Test method:

Manufacturer of the text object:	According to DIN EN 717-1 See No. 1.1 VOCs
Test chamber conditions:	DIN EN 717-1 with the following deviations: <ul style="list-style-type: none"> – No determination of the equilibrium concentration; the formaldehyde emission is indicated at a measuring point as determined above. – Test chamber size: see chamber volumes – Relative humidity: 50% Emission chamber parameters: see No. 1.1 VOCs
Air sampling:	2 days after test chamber loading
Analytics:	DIN EN 16000-3
	Determination threshold: 3 µg/m ³ ≈ 0,003 ppm

Test result:

Substance	Concentration (Test chamber air) [µg/m ³]	Concentration (Test chamber air) [ppm]
Formaldehyde	< 3	< 0,003



1.5 Odour testing

Test aim:

Odour, test collective, odour test 24 hours after desiccator loading

Test method:

Analytics:

VDA recommendation 270 at 50 % humidity

Rating scale:

- | | |
|---|--|
| 1 | not discernable |
| 2 | discernable, not objectionable |
| 3 | clearly discernable, not objectionable |
| 4 | objectionable |
| 5 | strongly discernable |
| 6 | intolerable |

Test result:

Temperature [°C]	Intensity [Note]	Type of odour
23	1 - 2	Product typical



2 Contents analysis

2.1 Polymer and filler percentage

Test method:

Analytics:	Ash/filler percentage: Thermogravimetry; Polymer percentage: IR/ATR
Benchmark:	Filler percentage: $\leq 5 \pm 1$ % Polymer percentage: NR ≥ 95 %

Filler percentage	[weight/%]
Related to the total sample the polymer portion amounts to.	97.3
Related to the total sample the ash portion (including zinc oxide) amounts to.	2.7
Related to the total sample the filler portion amounts to ¹⁾	< 5
Polymer percentage	[weight/%]
Related to the polymer content the natural latex portion amounts to ²⁾	100
Related to the polymer content the synthetic latex portion amounts to ²⁾	0

¹⁾ The filler portion is calculated by the difference of ash portion and zinc oxide on the assumption that maximally 5% zinc oxide is contained related to the total weight of the expanded latex core.

²⁾ With findings < 5 % for natural latex the result is represented as 100 % synthetic latex. Usually no natural latex portion under 5 % is used.

Cologne, 29 May 2008

Mr. H.-U. Krieg, Dr. rer.-chem.
(Technical manager)



Expert appraisal

The product 100 % natural latex core for mattresses was submitted to laboratory tests on behalf of Latex Systems Co., Ltd. for an ecological product examination according to the eco-INSTITUT-Label test criteria "Mattresses" (Issue: February 2008). The results documented in the test report were evaluated as follows.

Test parameter	Concentration	Threshold value	Threshold reached [yes/no]
Emission analysis			
TVOC (total volatile organic compounds) (2 days after test chamber loading)	133 µg/m ³	≤ 400 µg/m ³	yes
TVOC (total volatile organic compounds) (7 days after test chamber loading)	80 µg/m ³	≤ 200 µg/m ³	yes
VOC classified in: K1, K2; M1, M2; R1, R2 (as per TRGS 905, RL 67/548 EC); IARC group 1 & 2A; MAK III1, III2 (2 days after test chamber loading)	n.d.	≤ 2 µg/m ³	yes
VOC (sum) without NIK (7 days after test chamber loading)	2 µg/m ³	≤ 100 µg/m ³	yes
VOC (individual sums):			
Sum of sensitising materials with the following categorisation: DFG (MAK list): Category IV, German Federal Institute for Risk Assessment list: Cat A, TRGS 907 (7 days after test chamber loading)	n.d.	≤ 100 µg/m ³	yes
Sum of VOC with the following categorisations: Directive 67/548 EC: Carc. Cat. 3, Mut. Cat. 3, Repr. Cat. 3, TRGS 905: K3, M3, R3, IARC: Group 2B, DFG (MAK lists): Category III3 (7 days after test chamber loading)	4 µg/m ³	≤ 50 µg/m ³	yes
Disulfide (only latex products)	4 µg/m ³	≤ 50 µg/m ³ (2 days after test chamber loading)	yes
Nitrosamines (only latex products)	0.138 µg/m ³	≤ 0.3 µg/m ³ (2 days after test chamber loading)	yes
R value	< 1	≤ 1.0 (7 days after test chamber loading)	yes
Formaldehyde	< 0,003 ppm	≤ 0.02 ppm (2 days after test chamber loading)	yes
Odour	Note 1 - 2	≤ Grade 3 (24 hours after loading of desiccator)	yes
Content analysis			
Polymer percentage	100 % NR	Declaration in %	---
Filler portion (ash content)	< 5 %	≤ 5%	yes

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Summary evaluation

The product 100 % natural latex core for mattresses was submitted to an ecological product examination on behalf of Latex Systems Co., Ltd. for the acquisition of the eco-INITIUT-Label.

The eco-INITIUT-Label criteria were successfully fulfilled.

As a result of the successful ecological product examination the

eco-INITIUT-Label



is awarded for the product/s:
100 % Natural Latex Core for Mattresses
For a period of two years.

Certification number	ID 0508 – 12233 – 001
Test report Number	18435-1
Validity	05/2010

After expiration of two years it is possible to acquire the eco-INITIUT-Label for another two year period. For this a laboratory test will be accomplished according to the latest eco-INITIUT-Label test criteria.

Cologne, 29 May 2008

Ms. Aleksandra Vujovic
(Project Manager)



Appendix

Explanation of the Specific Emission Rate SER

Emission measurements are accomplished in test chambers under defined physical conditions (temperature, relative humidity, room loading, air change rate etc.).

Test chamber measurement results are directly comparable only if the investigations were accomplished under the same basic conditions.

If the differences of the physical conditions refer only to the change of air rate and/or the loading, the "SER" or "specific emission rate" can be used for comparability of the measurement results. The SER indicates how many volatile organic compounds (VOC) are released by the sample for each material unit and hour (h).

The SER can be calculated using the formula below for each proven individual component of the VOC from the data in the test report.

As material units the following are applicable:

l = unit of length (m)	relation between emission and length
a = unit area (m ²)	relation between emission and surface
v = unit volume (m ³)	relation between emission and volume
u = piece unit (unit = piece)	relation between emission and complete unit

From this the different dimensions for SER result:

length-specific	SER _l in µg/m h
surface-specific	SER _a in µg/m ² h
volume-specific	SER _v in µg/m ³ h
unit specific	SER _u in µg/u h

SER thus represents a product specific rate, which describes the mass of the volatile organic compound, which is emitted by the product per time unit at a certain time after beginning of the examination.

$$\boxed{\text{SER} = q \cdot C}$$

q specific air flow rate (quotient from change of air rate and loading)
C Concentration of the measured substance(s)

The result can be indicated in milligrams (mg) in place of micro grams (µg), whereby 1 mg = 1000 µg.