



Produktprüfung
Zertifizierung
Qualitätssicherung



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Coco Latex Exports (P) LTD.
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Akkreditiert ISO/IEC 17025

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



TEST REPORT No. 18345-1

Description of sample:	latex foam sheets
Kind of sample:	latex foam
Client:	Coco Latex Exports (P) LTD., Kerala, India
Sampling by:	Cocolatex Exports (P) LTD., Kerala, India
Date of arrival of sample:	7 February 2008
Date:	12 March 2008
Number of pages:	6
Page:	1
Test parameter:	According to QUL e.V. ¹: • Filler, polymer content • Nitrosamines (test chamber) * • Pentachlorophenol (PCP), Tetrachlorophenol (TeCP) • VOC (Volatile organic compounds, test chamber) • Carbon disulfide (CS₂, test chamber)
Testing laboratories:	ECO-Umweltinstitut GmbH, Cologne except * * subcontracted
Commercial use of this test report:	1 year ²

¹ QUL = Qualitätsverband umweltverträgliche Latexmatratzen e.V.

² For the interest of product safety we set a time limit of 1 year for commercial use of this report. Products with changing raw materials need a regular check for an effective quality control.

Filler, polymer content

<i>Filler</i>	<i>[weight/%]</i>
Polymer content, with reference to the sample	91
Ash content (incl. zinc oxide), with reference to the sample	9
Filler content, with reference to the sample ¹⁾	< 5
<i>Polymer content</i>	<i>[weight/%]</i>
NR, with reference to the polymer content ²⁾	100
SBR, with reference to the polymer content	0

Remark:

¹⁾ The amount of filler is calculated as difference between the amount of ash and zinc oxide, assuming that the maximum of zinc oxide is 5 % of the total latex foam.

²⁾ If NR-content is below 5 %, the result will be 100 % SBR. Usually there will be no use of NR below 5 % in a mixture of NR and SBR.

Demands by QUL e.V.:

Filler: $\leq 5 \% \pm 1 \%$

Polymer content: NR $\geq 95 \%$

Test methods: filler/ash: thermogravimetry; polymer content: IR/ATR.

Nitrosamines (test chamber)

Substance	Concentration after 2 days [ng/m³]	QUL-Orientation Value [ng/m³]
N-Nitrosodimethylamine	< 100	---
N-Nitrosomethylethylamine	< 100	---
N-Nitrosodiethylamine	< 100	---
N-Nitrosodiisopropylamine	< 100	---
N-Nitrosodipropylamine	< 100	---
N-Nitrosodibutylamine	< 100	---
N-Nitrosopiperidine	< 100	---
N-Nitrosopyrrolidine	< 100	---
N-Nitrosomorpholine	< 100	---
Total:	< 100	300

< = below assessment limit

Assessment limit: 100 ng/m³

Sample geometry and chamber conditions: see VOC (Volatile organic compounds) test chamber

Test method: BGI 505-23

Pentachlorophenol (PCP), Tetrachlorophenol (TeCP)

Substance	Content [mg/kg]	QUL-Orientation value [mg/kg]
Pentachlorophenol (PCP)	< 0,1	0,1
Tetrachlorophenol (TeCP)	< 0,1	0,1

< = not detectable, below assessment limit

Assessment limit: 0,01 mg/kg

Test method: Extraction, esterification, clean up on silicagel in reference to DFG-method S19, analysis with GC/ECD.

VOC (Volatile organic compounds, test chamber)

No	Substance	CAS No.	Emission after 2 days [$\mu\text{g}/\text{m}^3$]	q_A [$\mu\text{g}/\text{m}^2\text{h}$]
2	Saturated aliphatic hydrocarbons (n-, iso- and cyclo-)			
2-7.4	n-Decan	124-18-5	0,001	0,001
2-7.5	n-Undecan	1120-21-4	0,001	0,001
	Others non-calibrated and / or non-identified VOC, quantified as toluene-equivalent			
---	Diethylamine (VVOC)	---	0,011	0,008
---	Isoalkane with 8 or 9 carbon atoms	---	0,001	0,001
---	N,N-Diethylformamid	---	0,001	0,001
---	Anilin	---	0,001	0,001
---	Isoalkane with 11 or 12 carbon atoms	---	0,002	0,002
---	Isoalkane with 11 or 12 carbon atoms	---	0,001	0,001
---	Isoalkane with 11 or 12 carbon atoms	---	0,002	0,002
---	Sesquiterpen	---	0,002	0,002
	Total VOC:		0,023	0,018

	QUL-orientation value without isoaliphates		0,3	0,23
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< = below assessment limit

Assessment limit: 0,001 mg/m³Orientation value for the single substance: 0,15 mg/m³

<i>Isoaliphates</i>	<i>Cas-no.</i>	<i>Emission after 2 days [mg/m³]</i>	<i>SER_a [mg/m²h]</i>
2-Methylpentane	107-83-5	n.d.	n.d.
3-Methylpentane	96-14-0	n.d.	n.d.
Total isoaliphates:		n.d.	n.d.

QUL-orientation value isoaliphates:		0,5	0,39
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< = below assessment limit

Assessment limit: 0,001 mg/m³Orientation value for the single substance: 0,15 mg/m³

Sample geometry: sealed edges: No
Loading related to: area
Sample volume: 17,5 cm x 17,5 cm x 14,5 cm
Chamber conditions: following DIN ISO 16000-9 and DIN EN 717-1
Volume: 0,125 m³
Temperature: 23°C
Rel. Humidity: 45 %
Pressure: Normal
Air: Clean
Air change rate: 1,0 h⁻¹
Air velocity: 0,3 m/s
Loading: 1,3 m²/m³
Specific air flow rate: 0,77 m³/m²*h
Sampling after: 48 h after loading of test chamber
Test method: DIN ISO 16000-6

Carbon disulfide (CS₂, test chamber)

Substance	Concentration after 2 days [µg/m³]	QUL-orientation value [µg/m³]
Carbon disulfide CS ₂	< 1	50

< = below assessment limit

Assessment limit: 1 µg/m³

Sample geometry: see VOC (Volatile organic compounds) test chamber

Chamber conditions: see VOC (Volatile organic compounds) test chamber

Test method: DIN ISO 16000-6

Cologne, 12 March 2008



Dr. H.-U. Krieg
(Technical Manager)

Assessment

The tested sample “latex foam sheets”, manufactured by Coco Latex Exports (P) LTD., fulfils the criteria of the “Qualitätsverband umweltverträgliche Latexmatratzen e.V.” (QUL) to the above-mentioned range.

Cologne, 12 March 2008

A handwritten signature in black ink, appearing to read 'K-L' with a stylized flourish at the end.

Dr. Frank Kuebart
(Project Manager)