



Produktprüfung
Zertifizierung
Qualitätssicherung

ECO
INSTITUT

Natural latex foam core

Coco-Latex Exports (P) LTD, Allepey, India

Test Report No. 21940-1



ECO-INSTITUT GmbH
Sachsenring 69
50677 Köln

Fon +49-(0)221-931 245 -0
Fax +49-(0)221-931 245 -33

www.eco-institut.de
www.eco-info.de
info@eco-institut.de

Akkreditiert ISO/IEC 17025

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

Bolster / wadding materials

2 Content analysis

2.1 Polymers and filler percentage

Test parameter:

Polymers and filler percentage

Test method:

Analytics:

Ash/filler percentage: Thermogravimetry;
Polymer percentage : IR/ATR

Test result:

Filler percentage	[weight/%]
Related to the total sample the polymer portion amounts to.	96
Related to the total sample the ash portion (including zinc oxide) amounts to.	4
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, dated 31 May 2010



Dr. rer.-nat. Hans-Ulrich Krieg
(Technical Manager)

Appraisal

The product Natural latex foam core was submitted to laboratory tests on behalf of Coco-Latex Exports (P) LTD, Chungom, Allepey 688011, India for an ecological product examination according to the quality association for environmentally-agreeable latex mattresses (Qualitätsverband Umweltverträgliche Latexmatratzen e.V. QUL e.V.). The results documented in the test report were evaluated as follows.

Natural latex foam core			
Test parameter	Result / Emission	Limit value	Within limits [yes/no]
Emission test			
TVOC (total volatile organic compounds) (2 days after test chamber loading)	66 µg/m ³	≤ 400 µg/m ³	yes/no
TVOC (total volatile organic compounds) (7 days after test chamber loading)	14 µg/m ³	≤ 200 µg/m ³	yes/no
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)	< 2 µg/m ³	≤ 2 µg/m ³	yes/no
VOC (sum) without LCI (7 days after test chamber loading)	10 µg/m ³	≤ 100 µg/m ³	yes/no
VOC (individual sums):			
Sum of sensitising materials with the following categorisations: DFG (MAK list): Category IV, German Federal Institute for Risk Assessment list: Cat A, TRGS 907 (7 days after test chamber loading)	< 2 µg/m ³	≤ 100 µg/m ³	yes/no
Sum of VOC with the following categorisations: Regulation (EC) No. 1272/2008: Category Carc. 2, Muta. 2, Repr. 2, TRGS 905: K3, M3, R3, IARC: Group 2B, DFG (MAK list): Category III3 (7 days after test chamber loading)	< 2 µg/m ³	≤ 50 µg/m ³	yes/no
Sum C ₉ - C ₁₄ : Alkanes / Isoalkanes (7 days after test chamber loading)	< 2 µg/m ³	≤ 100 µg/m ³	yes/no
VOC (individual substances):			
Styrol (7 days after test chamber loading)	< 2 µg/m ³	≤ 10 µg/m ³	yes/no
Disulfide (2 days after test chamber loading)	2 µg/m ³	≤ 50 µg/m ³	yes/no
Nitrosamines (2 days after test chamber loading)	< 0.1 µg/m ³	≤ 0.3 µg/m ³	yes/no
R value (7 days after test chamber loading)	< 1.0	≤ 1.0	yes/no
Formaldehyde (2 days after test chamber loading)	< 0.003 ppm	≤ 0.02 ppm	yes/no
Odour (24 hours after loading of desiccator)	Grade 2 - 3	≤ Grade 3	yes/no

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.

Bolster / wadding materials			
Test parameter	Content/ Result	Limit value	Threshold reached [yes/no]
Content analysis			
Polymer percentage	100 % NR	Declaration in %	---
Filler portion (ash content)	< 5 %	≤ 5%	yes

Summary evaluation

The product Natural latex foam core was submitted to an product examination on behalf of Coco-Latex Exports (P) LTD, Allepey, India.

The criteria of the quality association for environmentally-agreeable latex mattresses were successfully fulfilled.

Cologne, dated 31 May 2010



Dr. rer.-nat. Frank Kuebart
(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 exchange 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)	refers the emission to the length
a = unit area (m ²)	refers the emission to the surface
v = unit volume (m ³)	refers the emission to the volume
u = piece unit (unit = piece)	refers the emission to the 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.