

Dr. Graner & Partner GmbH, Lochhausener Str. 205, 81249 München

Jaguar, Tomasz Chwilowicz  
PL6671044832  
ul. Dworcowa 62

62-400 Slupca

Lochhausener Str. 205  
81249 München  
Telefon +49(0)89/863005-0  
Telefax +49(0)89/863005-11  
E-Mail: [info@labor-graner.de](mailto:info@labor-graner.de)  
Internet: [www.labor-graner.de](http://www.labor-graner.de)

Munich, 16.09.2020

## Analysis Report 1932260\_2

Client: see above  
Project manager:  
Object of analysis: **Nylon**  
Sample collection: Client  
Date of receipt; order: 22.05.2019  
Period of analysis: 22.05.2019 - 31.05.2019

Method of analysis: Polycyclic aromatic hydrocarbons according AfPS GS 2014:01  
Azocolourants according DIN EN 14362

\*external processing of orders

The results refer exclusively to the objects of analysis stated in the report. The report may not be reproduced in whole or in part by any means without prior permission of the analyzing laboratory. The measurement accuracy in the standards is being adhered to. The current versions of the test methods used can be viewed on our homepage (<http://www.labor-graner.de/qualitatssicherung.html>). Improper sample containers may cause incorrect or corrupted results. Mixed samples which gave test results in accordance with the acceptance limits may still lead to out-of-specification results when analyzed individually. To ensure test results in accordance with the acceptance limits it is advised to analyze individual samples. Microbiological material is being destroyed immediately after the analysis. If there is no reference of an in-house validation listed next to the above mentioned methods, they have not been validated by Dr. Graner & Partner GmbH.

**According to DIN ISO 17025 accredited test laboratory. D-PL-18601-01-00**

Pharmaceuticals, food, cosmetics, consumer goods, water, soil, air, medical products analyses, development, quality control, consulting, expert opinions, official cross-checks, microbiology, drug approval, classification enquiries AMG/LFGB

Munich Local Court No. 84402, Managing Director: Alexander Hartmann, Dr. Manfred Holz  
BIC: GENODEFIM07; IBAN: DE30 7016 9464 0000 0699 22  
Bank details: Genossenschaftsbank Aubing eG

Analysis report: 1932260\_2

16.09.2020

Number of laboratory: 1932260-001

Object of analysis: Main fabric black

<b>Results of physical/chemical analysis:</b>				
<b>Components</b>	<b>Method</b>	<b>Result</b>	<b>LOQ</b>	<b>Unit</b>
<b>Polycyclic aromatic hydrocarbons (PAH):</b>				
Naphthalene	AfPS GS 2014:01	2,1	0,2	mg/kg
Acenaphthylene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Acenaphthene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Fluorene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Phenanthrene	AfPS GS 2014:01	0,49	0,2	mg/kg
Anthracene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Fluoranthene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Pyrene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Benz(a)anthracene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Chrysen	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Sum Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(j)fluoranthene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Benzo(a)pyrene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Benzo(e)pyrene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Indeno(123-cd)pyrene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Dibenz(ah)anthracen	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Benzo(ghi)perylene	AfPS GS 2014:01	b.l.q.	0,2	mg/kg
Sum Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	AfPS GS 2014:01	0,49		mg/kg
Sum of 18 PAK	AfPS GS 2014:01	2,59		mg/kg
<b>Azocolourants</b>				
aniline	DIN EN 14362	b.l.q.	2	mg/kg
4-amino azobenzene (determined as aniline)	DIN EN 14362	n.n	2	mg/kg
o-toluidin	DIN EN 14362	b.l.q.	2	mg/kg
2,4-dimethylaniline	DIN EN 14362	b.l.q.	2	mg/kg
2,6-dimethylaniline	DIN EN 14362	b.l.q.	2	mg/kg
o-anisidine	DIN EN 14362	b.l.q.	2	mg/kg
4-chloraniline	DIN EN 14362	b.l.q.	2	mg/kg
p-phenylendiamine	DIN EN 14362	b.l.q.	2	mg/kg
p-cresidine	DIN EN 14362	b.l.q.	2	mg/kg
2,4,5-trimethylaniline	DIN EN 14362	b.l.q.	2	mg/kg
4-chloro-o-toluidine	DIN EN 14362	b.l.q.	2	mg/kg
4-methyl-m-phenylendiamine	DIN EN 14362	b.l.q.	2	mg/kg
4-methoxy-m-phenylendiamine	DIN EN 14362	b.l.q.	2	mg/kg
2-naphthylamine	DIN EN 14362	b.l.q.	2	mg/kg
5-nitro-o-toluidine	DIN EN 14362	b.l.q.	2	mg/kg
4-aminobiphenyl	DIN EN 14362	b.l.q.	2	mg/kg
4-Aminophenylether	DIN EN 14362	b.l.q.	2	mg/kg
4,4"-Benzidin	DIN EN 14362	b.l.q.	2	mg/kg
Bis-(4-aminophenyl)methan	DIN EN 14362	b.l.q.	2	mg/kg

**Analysis report:** 1932260\_2

16.09.2020

**Number of laboratory:** 1932260-001

**Object of analysis:** Main fabric black

Components	Method	Result	LOQ	Unit
4-Amino-2",3dimethylazobenzen	DIN EN 14362	b.l.q.	2	mg/kg
4,4"Diamino3,3"dimethyldiphenylmethan	DIN EN 14362	b.l.q.	2	mg/kg
3,3"-Dimethylbenzidin	DIN EN 14362	b.l.q.	2	mg/kg
4-Aminophenylthioether	DIN EN 14362	b.l.q.	2	mg/kg
3,3"-Dimethoxybenzidin	DIN EN 14362	b.l.q.	2	mg/kg
4,4"-Methylen-bis-2-Chloranilin	DIN EN 14362	b.l.q.	2	mg/kg
3,3"-Dichlorbenzidin	DIN EN 14362	b.l.q.	2	mg/kg

**Explanations of abbreviations:**

Cfu:	colony forming units	TAMC:	total aerobic microbial count
n.d.:	not detectable	TYMC:	total combined yeast/mould count
LOQ:	limit of quantification	MPN:	most probable number
n.a.:	not analysed	n.D.:	no declaration
b.l.q.:	below limit of quantification		

Based on its relative volatility against the other 17 PAH according to material list 3, naphthalene represents a parameter difficult to evaluate in close to skin products. Experience of the testing bodies show that loss of naphthalene as well as secondary contamination can be found. The developed naphthalene result will always only show the momentary situation of the test sample at the time of measurement.

**Assessment of PAH according to AfPS GS 2014: 01:**

The PAH content of the sample exceeds the limits for PAH of the category 2.

**Assessment of PAHs according to REACH:**

According article 67 para 1 in conjunction with Annex XVII No. 50 of Regulation (EG) No. 1907/2006 (REACH) Articles shall not be placed on the market for supply to the general public, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 1 mg/kg (0,0001 % by weight of this component) of any of the listed PAHs. (Benzo[a]pyrene, Benzo[e]pyrene, Benzo[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[j]fluoranthene, Benzo[k]fluoranthene and Dibenzo[a,h]anthracene)

The limits are met by the tested sample.

**Azodyes:**

Azodyes which, by reductive cleavage of one or more azo groups, may release one or more of the aromatic amines listed in Appendix 8, in detectable concentrations, i.e. above 30 mg/kg in the articles or in the dyed parts thereof, shall not be used, according to article 67 para. 1 in conjunction with Annex XVII No. 43 of Regulation (EG) No. 1907/2006 (REACH) in textile and leather articles which may come into direct and prolonged contact with the human skin or oral cavity.

According to the testing result no Azodyes which, by reductive cleavage of one or more azo groups, may release one or more of the aromatic amines listed are detected in the tested sample.

**Analysis report:**

**1932260\_2**

16.09.2020



---

D. Grewe  
(Food chemist)

**Attachment:**

**Limits and categories of PAHs:**

Substance name	Categorie 1	Categorie 2		Categorie 3	
		Toys in 2009/48/EC	Other products in ProdSG	Toys in 2009/48/EC	Other products in ProdSG
	Materials, that are intended to be taken in the mouth or materials in toys with proper and long-term skin contact (longer than 30s)	Materials, not covered in Cat.1, with foreseeable contact to skin longer than 30s (long-term skin contact) or repeated short-term skin contact*		Materials, that do not fall in Cat. 1 or 2, with foreseeable contact to skin up to 30s (short-term skin contact)	
<b>Benzo[a]pyrene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Benzo[e]pyrene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Benzo[a]anthracene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Benzo[b]fluoranthene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Benzo[j]fluoranthene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Benzo[k]fluoranthene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Chrysene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Dibenzo[a,h]anthracene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Benzo[ghi]perylene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Indeno[1,2,3-cd]pyrene</b> mg/kg	< 0,2	< 0,2	< 0,5	< 0,5	< 1
<b>Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene</b> mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
<b>Naphthalene</b> mg/kg	< 1	< 2		< 10	
<b>Sum of 18 PAK</b>	< 1	< 5	< 10	< 20	< 50

\* =Definition of "short-term= repetitive contact with the human skin" from REACH Annex XVII Entry 50 Amendment (Commission Regulation (EU) No. 1272/2013)



Attachment of analysis report 1932260\_2

16.09.2020

