



we assist, advise and test

CTL [®] no	395424/2
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[Material]	PMU colour sample
[Colour]	Cocoa
[Batch/Lot no]	201206

					passed	
Azo-dyestuffs, Part 1a Determination of aromatic amines with carcinogenic, mutagenic, reprotoxic and sensitising properties according to CoE Resolution ResAP(2008)1, Table 1 Methods acc. to DIN EN ISO 14362-1:2017-05 Limit of quantitation: 1 ppm; limit: as low as technically achievable					yes	
Biphenyl-4-arylamine	-	4-Methoxy-m-phenylenediamine	-	4,4'-Methylenebis-(2-chloroaniline)		-
Benzidine	-	4,4'-Methylenedianiline	-	4-Methyl-m-phenylenediamine		-
4-Chloro-o-toluidine	-	3,3'-Dichlorobenzidine	-	o-Anisidine		-
2-Naphthylamine	-	3,3'-Dimethoxybenzidine	-	4-Aminoazobenzene		-
o-Aminoazotoluene	-	3,3'-Dimethylbenzidine	-	6-Amino-2-ethoxynaphthaline		-
5-Nitro-o-toluidine	-	4,4'-Methylenedi-o-toluidine	-	4-Amino-3-fluorophenol		-
4-Chloroaniline	-	6-Methoxy-m-toluidine	-			
Azo-dyestuffs, Part 1b Determination of carcinogens classified in categories 1, 2 and 3 by the European Commission and mentioned in the Council Directive 1967/548/EEC of 27 June 1967 according to CoE Resolution ResAP(2008)1, Table 1 - 2nd part Methods acc. to DIN EN ISO 14362-1:2017-05 Limit of quantitation: 1 ppm; limit as low as technically achievable					yes	
4,4'-Oxydianiline	-	2,4,5-Trimethylaniline	-	2,6-Xylidine		-
4,4'-Thiodianiline	-	p-Phenylenediamine	-			
o-Toluidine	-	2,4-Xylidine	-			
Dyestuffs, Part 2 Acc. to CoE Resolution ResAP(2008)1; Table 2 Methods: extraction and HPLC-DAD / GC/MS-analysis acc. to DIN 54231 Limit of quantitation: 5 ppm; limit as low as technically achievable					yes	
Acid Green 16	-	Disperse Blue 1	-	Pigment Red 53		-
Acid Red 26	-	Disperse Blue 106	-	Pigment Violet 3		-
Acid Violet 17	-	Disperse Blue 124	-	Pigment Violet 39		-
Acid Violet 49	-	Disperse Blue 3	-	Solvent Blue 35		-
Acid Yellow 36	-	Disperse Blue 35	-	Solvent Orange 7		-
Basic Blue 7	-	Disperse Orange 3	-	Solvent Red 24		-
Basic Green 1	-	Disperse Orange 37	-	Solvent Red 49		-
Basic Red 1	-	Disperse Red 1	-	Solvent Violet 9		-
Basic Red 9	-	Disperse Red 17	-	Solvent Yellow 1		-
Basic Violet 1	-	Disperse Yellow 3	-	Solvent Yellow 2		-
Basic Violet 10	-	Disperse Yellow 9	-	Solvent Yellow 3		-
Basic Violet 3	-	Pigment Orange 5	-			

caption: LFGB = German Food and Feed Code, - = not detectable

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Heavy metals, Part 3			Limit (limit of quantitation below limit respectively; 0.5 ppm for Nickel)	Amount	yes	
Acc. to CoE Resolution ResAP(2008)1; Table 3 Method: Prior, G. (2014). Tattoo Inks: Analysis, Pigments, Legislation. Berlin: epubli. CTL Method 2, p. 83.						
Arsenic (As)			≤ 2 ppm	< 2 ppm		
Barium (Ba)			≤ 50 ppm	< 50 ppm		
Cadmium (Cd)			≤ 0.2 ppm	< 0.2 ppm		
Cobalt (Co)			≤ 25 ppm	< 25 ppm		
Chromium (Cr), VI			≤ 0.2 ppm	< 0.2 ppm		
Copper (Cu)			≤ 25 ppm	< 25 ppm		
Mercury (Hg)			≤ 0.2 ppm	< 0.2 ppm		
Nickel (Ni)			As low as technically achievable	< 0.5 ppm		
Lead (Pb)			≤ 2 ppm	< 2 ppm		
Selenium (Se)			≤ 2 ppm	< 2 ppm		
Antimony (Sb)			≤ 2 ppm	< 2 ppm		
Tin (Sn)			≤ 50 ppm	< 50 ppm		
Zinc (Zn)			≤ 50 ppm	< 50 ppm		
PAH and BaP, Part 4					yes	
Determination of 16 compounds of Polycyclic hydrocarbons incl. Benzo-a-pyrene acc. to CoE Resolution ResAP(2008)1 Methods acc. to AFPS GS 2019:01 PAK; EPA List of 16 PAH Limit of quantitation: PAH 0.05 ppm, BaP 5 ppb Limit: PAH ≤ 0.5 ppm as total, BaP ≤ 5 ppb						
Naphthalene	-	Fluoranthene	-	Dibenzo(a,h)anthracene		-
Acenaphthylene	-	Pyrene	-	Indo (1,2,3-cd)pyrene		-
Acenaphthene	-	Benz(a)anthracene	-	Benzo(g,h,i)perylene		-
Fluorene	-	Chrysene	-	Benzo-a-pyrene (BaP)		-
Phenanthrene	-	Benzo(b)fluoranthene	-			
Anthracene	-	Benzo(k)fluoranthene	-	Total		-
Sterility Test (external accredited laboratory), Part 5					not conducted	
Results: Passed parts: 1,2,3,4; not conducted: part 5 Overall: passed						

Additional information:

Result of metal aluminium, perspiration solution: < 5 ppm
During the testing of amines after reduction aniline was detected. According to annex II of EU Regulation 1223/2009 cosmetic products must not contain free aniline. This is also true for tattoo colors and PMUs. We recommend to test for free aniline.

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