CTL® GmbH
CHEMICAL-TECHNOLOGICAL LABORATORY

we assist, advise and test

CTL® no	395424/1
[Material]	PMU colour sample
[Colour]	Wood
[Batch/Lot no]	201906

													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						not detctable							
Biphenyl-4-arylamine	-		4-Methoxy-m-phenylenediamine	-		4,4'-Methylenebis-(2-chloroaniline)	-						yes
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						not detctable							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						not detectable							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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							passed
Heavy metals, Part 3 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.			**Limit** (limit of quantitation below limit respectively; 0.5 ppm for Nickel)		**Amount**		yes
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 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							yes
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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