



CTL® GmbH  
Chemical Technological Laboratory

CTL® GmbH | Chemical-Technological Laboratory  
Krackser Straße 12 | 33659 Bielefeld | Germany

Perma Blend  
460A Greenway Industrial Drive  
Fort Mill, SC 29708  
USA

CTL® no 385573+385792+386993

[Order date] —

[Date received] —

[Service date] 03.12.2018

tattoo@lab.eu

## Certificate

[Article] Permanent cosmetic pigment  
[Brand] Perma Blend  
[Colour/product code] Mallard / PBMD  
[Test] Aromatic amines and carcinogens acc. to CoE Resolution ResAP(2008)1: Part 1a, Part 1b

**Part 1a**  
Testing of aromatic amines with carcinogenic, mutagenic, reprotoxic and sensitising properties according to CoE Resolution ResAP(2008)1  
Detection limit: 1 ppm; limit: as low as technically avoidable

**DIN EN 14362, § 64 LFGB 82.02-2,3,4,9**  
GC/MS analysis  
HPLC analysis

Amount (ppm)	Amine	EC no	CAS no	Amount (ppm)	Amine	EC no	CAS no
—	Biphenyl-4-ylamine	202-177-1	92-67-1	—	3,3'-Dimethoxybenzidine	204-365-4	119-90-4
—	Benzidine	202-199-1	92-87-5	—	3,3'-Dimethylbenzidine	204-358-0	119-93-7
—	4-Chloro-o-toluidine	202-411-6	95-69-2	—	4,4'-Methylenedl-o-toluidine	212-668-8	838-88-0
—	2-Naphthylamine	202-080-4	91-59-8	—	6-Methoxy-m-toluidine	204-419-1	120-71-8
—	o-Aminoazotoluene	202-591-2	97-56-3	—	4,4'-Methylenbis-(2-chloroaniline)	202-918-9	101-14-4
—	5-Nitro-o-toluidine	202-765-8	98-55-8	—	4-Methyl-m-phenylenediamine	202-463-1	95-80-7
—	4-Chloroaniline	203-401-0	108-47-8	—	o-Anisidine	201-963-1	90-04-0
—	4-Methoxy-m-phenylenediamine	210-406-1	615-05-4	—	4-Aminozobenzene	200-453-6	60-09-3
—	4,4'-Methylenediamine	202-974-4	101-77-9	—	6-Amino-2-ethoxynaphthalene	—	293733-21-8
—	3,3'-Dichlorobenzidine	202-109-0	91-94-1	—	4-Amino-3-fluorophenol	418-230-9	399-95-1

**Part 1b**  
Testing 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  
Detection limit: 1 ppm

**DIN EN 14362, § 64 LFGB 82.02-2,3,4,9**  
GC/MS analysis  
HPLC analysis

Amount (ppm)	Amine	EC no	CAS no	Amount (ppm)	Amine	EC no	CAS no
—	4,4'-Oxydianiline	202-977-0	101-80-4	—	Para-phenylenediamine	2003-404-7	106-50-3
—	4,4'-Thiodianiline	205-370-9	139-65-1	—	2,4 Xyldine	—	95-88-1
—	o-Toluidine	202-429-0	95-53-4	—	2,6 Xyldine	—	87-82-7
—	2,4,5-Trimethylaniline	205-282-0	137-17-7				

BIELEFELD, 03. DECEMBER 2018

Helmut Meyer (Lab manager)

(\*) = taken definition limit

[RE] The devoted results are only valid for the tested sample. Without written consent no single part of this report is allowed to be forwarded to third parties.

The validity of the certificate is 2 years.

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## Certificate

[Article]

Permanent cosmetic pigment

[Brand]

Perma Blend

[Colour/product code]

Mallard / PBMD

[Test]

Dyes/ufis acc. to CoE Resolution ResAP(2008)1: Part 2

**Part 2**  
Testing of dyes/ufis according to CoE Resolution ResAP(2008)1  
Detection limit: 5 mg/l

**DIN 54231 in the up-to-date legislation**  
GC/MS analysis  
HPLC analysis  
TLC analysis

Amount (ppm)	Colourant	CI no	CAS no	Amount (ppm)	Colourant	CI no	CAS no
--	Acid Green 16	44025	12768-78-4	--	Disperse Orange 37	--	12223-33-5
--	Acid Red 26	16150	3761-53-3	--	Disperse Red 1	11110	2872-52-8
--	Acid Violet 17	42650	4129-84-4	--	Disperse Red 17	11210	3179-89-3
--	Acid Violet 49	42640	1694-09-3	--	Disperse Yellow 3	11855	2832-40-8
--	Acid Yellow 36	13065	587-98-4	--	Disperse Yellow 9	10375	6373-73-5
--	Basic Blue 7	42595	2390-60-5	--	Pigment Orange 5	12075	3466-63-1
--	Basic Green 1	42040	633-03-4	--	Pigment Red 53	15585	2092-66-0
--	Basic Red 1	45160	989-38-8	--	Pigment Violet 3	42535:2	1325-82-2
--	Basic Red 9	42500	569-61-9	--	Pigment Violet 39	42555:2	64070-98-0
--	Basic Violet 1	42535	8004-87-3	--	Solvent Blue 35	61554	17354-14-2
--	Basic Violet 10	45170	81-88-9	--	Solvent Orange 7	12140	318-97-6
--	Basic Violet 3	42555	548-62-9	--	Solvent Red 24	26105	85-83-6
--	Disperse Blue 1	64500	2475-45-8	--	Solvent Red 49	45170:1	509-34-2
--	Disperse Blue 106	--	12223-01-7	--	Solvent Violet 9	42555:1	467-63-0
--	Disperse Blue 124	--	61951-51-7	--	Solvent Yellow 1	11000	60-09-3
--	Disperse Blue 3	61505	2475-46-9	--	Solvent Yellow 2	11020	60-11-7
--	Disperse Blue 35	--	12222-75-2	--	Solvent Yellow 3	11160	97-56-3
--	Disperse Orange 3	11005	730-40-5	--	--	--	--

**BIELEFELD, 03. DECEMBER 2018**

**Helmuth Meyer (lab manager)**

(--)= below detection limit

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The validity of the certificate is 3 years.

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## Certificate

[Article]

Permanent cosmetic pigment

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[Colour/product code]

Mallard / PBMD

[Test]

Heavy Metals acc. to CoE Resolution ResAP(2008)1: Part 3

**Part 3**  
**Testing of heavy metals according to CoE Resolution**  
**ResAP(2008)1**

**Method: Prior, G. (2014). Tattoo Inks: Analysis, Pigments,**  
**Legislation.**  
**Berlin: epubli. CTL method 2, p. 83.**

Amount (ppm)	Elements or compound	Limit (ppm)	Detection limit (ppm)	Amount (ppm)	Elements or compound	Limit (ppm)	Detection limit (ppm)
< 1	Arsenic (As)	≤ 2	1	< 0.1	Nickel (Ni)	As low as technically achievable	0.1
< 5	Barium (Ba)	≤ 50	5	< 1	Lead (Pb)	≤ 2	1
< 0.1	Cadmium (Cd)	≤ 0.2	0.1	< 1	Selenium (Se)	≤ 2	1
< 5	Cobalt (Co)	≤ 25	5	< 1	Antimony (Sb)	≤ 2	1
< 0.1	Chromium (Cr), VI	≤ 0.2	0.1	< 5	Tin (Sn)	≤ 50	5
< 5	Copper (Cu), soluble	≤ 25	5	< 5	Zinc (Zn)	≤ 50	5
< 0.1	Mercury (Hg)	≤ 0.2	0.1				

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.....  
**Helmuth Meyer (lab manager)**

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## Certificate

[Article] Permanent cosmetic pigment  
[Brand] Perma Blend  
[Colour/product code] Mallard / PBMD  
[Test] Sterility acc. to CoE Resolution ResAP(2008)1; ASU §64 LFGB L59.00-4; L06.00-18: Part 5  
*tested on a single representative sample*

<b>Part 5</b> Testing of sterility Detection limit: $1.0 \times 10^1$ CFU/g	
Results	
Microbiological test: pseudomonads = King A, King B, Oxidase test acc. to CoE ResAP(2008)1	$< 1.0 \times 10^1$ CFU/g
Anaerobes sulfite-reducing sporulating bacteria acc. to ASU §64 LFGB L59.00-4	$< 1.0 \times 10^1$ CFU/g
Aerobes mesophilic sporulating bacteria acc. to ASU §64 LFGB L06.00-18	$< 1.0 \times 10^1$ CFU/g

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## Certificate

[Article]

Permanent cosmetic pigment

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Mallard / PBMD

[Test]

PAH and BaP acc. to CoE Resolution ResAP(2008)1: Part 4

### Part 4

Testing of Polycyclic Aromatic Hydrocarbons (PAH) and Benzo-a-Pyrene (BaP) according to CoE Resolution ResAP(2008)1  
Detection limit: PAH: 0.05 ppm as total; Benzo-a-pyrene: 0.5 ppb  
Limit: PAH: 0.5 ppm as total; Benzo-a-pyrene: 5 ppb

**EPA, ZEK 2008-01**

Amount (ppm)	Elements or compound	Amount (ppm)	Elements or compound
---	Naphtalene	---	Benz(a)anthracene
---	Acenaphthylene	---	Chrysene
---	Acenaphthene	---	Benzo(b)fluoranthene
---	Fluorene	---	Benzo(k)fluoranthene
---	Phenanthrene	---	Dibenzo(a,h)anthracene
---	Anthracene	---	Indo (1,2,3-cd)pyrene
---	Fluoranthene	---	Benzo(g,h,i)perylene
---	Pyrene	---	Benzo-a-pyrene (BaP)

**Result as total: all below detection limit**

**BIELEFELD, 03. DECEMBER 2018**

.....  
**Helmut Meyer (lab manager)**  
.....

(--)= below detection limit

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