

 ASSOCIATION POUR L'ASSURANCE QUALITÉ DES FABRICANTS DE BRACELETS CUIR		DOC nb LIS006_07
		Replace LIS006_06
AQC RESTRICTED SUBSTANCES LIST FOR EDGE TINCTURES		
Application date: 12Apr23		Page 1/10
Written by	Quality review (signature/date)	Process owner (signature/date)
	 Apr 5, 2023	 Apr 5, 2023
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Change log

Version	Date	Modification
06	01Sep21	Revision ✓ MCCP from no limit to 1'000 mg/kg (new entry SVHC list – 08Jul21) and update of CAS numbers for this chemical family ✓ Addition of Bisphenol B (new entry SVHC list – 08Jul21)
07	12Apr23	Revision Decision TWG by mail 31Mar23 – Action CQI-23-081b ✓ Correction of references to EU POP (no more annex A) ✓ Bisphenols - limit 1'000 mg/kg for BPB and BPS ✓ Flame retardants - add of 2 SVHCs ✓ Flame retardants - new limit for TBBPA at 1'000 mg/kg (SVHC entry) ✓ Organotins – transferred into an option in case of total Tin above quantification limit ✓ Phenols - Precision of CAS number for isononylphenol and isononylphenol ethoxylated ✓ PAHs - update of method version ✓ PFAS - Complete review of poly- and per-fluorinated substances ✓ Carcinogenic & allergenic dyes – complete reorganization and review of the list ✓ Aromatic Amines - Add of aniline and PPD ✓ Aromatic Amines – Correction of substance name for CAS 90-04-0 ✓ Aromatic Amines – Add of note for the equivalence of certain aromatic amines with the ones of entry 72 of REACH Annex XVII ✓ Metals – Chromium (VI) - add of related substances and change of method requested by AQC ✓ Metals - Suppression of Nickel and Cobalt extractable ✓ Metals - limit moved to “for information” for REACH SVHC and note about for AQC calculation in case of result above quantification limit (LOQ) ✓ Metals - Add of Barium, Boron, Nickel and Tin ✓ Metals - complete review of notes ✓ VOCs – suppression of SVHC EGEE Suppression of allergens table in the last page

Associated document (level 1)

Document	Title
MAQ016	Chemical Compliance Process

Associated document (level 2)

Document	Title
PRO008	Management of AQC Quality Control for edge tinctures

Associated document (level 3)*

Document	Title
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* Internal documents – not disclosed.

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Scope of the document

This document defines the list of restricted chemical substances and testing requirements for edge tinctures in the context of leather bracelet as specified by AQC.

To define the limits present in this Restricted Substances list (RSL), AQC takes into consideration all the current international regulations for dangerous substances available and select the strictest limit. The list of chemicals present in this document has been selected on the basis of a risk-based approach completed by AQC experience and knowledge.

International regulations mentioned in this document are

Abbreviation	Regulation	Country	Comment
16CFR1303	Ban of lead-containing paint and certain consumer products bearing lead-containing paint	USA	-
EU POP	Regulation (EU) 2019/1021 of the European Parliament and of the Council on persistent organic pollutants	European Union	
GB 20400-2006	Leather and fur—Limit of harmful matter	China	-
JP 112	Law on Control of Household Products Containing Harmful Substances	Japan	-
OChim	Ordinance on Protection against Dangerous Substances and Preparations	Switzerland	-
ORRChim	Ordinance on the Reduction of Risks relating to the Use of Certain Particularly Dangerous Substances, Preparations and Articles	Switzerland	-
Proposition 65	Safe Drinking Water and Toxic Enforcement Act	USA (California)	-
REACH XIV	Regulation (EC) no 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)	European Union	Annex XIV Substances subject to authorisation
REACH XVII			Annex XVII Substances subject to restriction
REACH SVHC			Substances of Very High Concern

Specific AQC consideration

In the column for regulation, “AQC” stands for extra-regulatory requirement set by AQC in a pro-active way:

- “AQC” alone is applied for substances without known regulation.
For some substances, AQC performs testing without limit (for information) or with a limit concentration.
- (AQC) after a regulation indicate that the scope has been enlarged to glues by AQC or that the limit applied by AQC is lower than requested by the more stringent regulation.

AQC limit for REACH SVHCs

Article 33(1) of REACH requires that a supplier of articles containing a SVHC included in the Candidate List for authorization in a concentration above 0.1% (w/w) has to provide relevant safety information to the recipients of these articles (Watch Brands). Upon request of a consumer, Watch Brands have to provide relevant safety information about the SVHC to this consumer (Article 33(2) of REACH). This requirement is also present in Swiss ordinance OChim, article 71.

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There is no regulatory requirement to limit SVHC content in articles to 1'000 mg/kg. Nevertheless, AQC Bracelet manufacturers limit all SVHC listed substances to 1'000 mg/kg in leather bracelet and in all components before manufacturing.

AQC limit for Proposition 65

For substances listed in the Proposition 65 California, AQC limits take into account the limit in articles present in the case law of Proposition 65 and more precisely the limits indicated in the reformulation injunctions of settlements and judgements.

AQC considers in case law: leather articles and related articles to the watch bracelet but also any other article with a related exposure scenario (skin contact).

For substances without any indication of a limit in articles, AQC performs testing of a risk-based selection of substances potentially used for leather production and keeps available for Watch Brands all the data as a support for labelling decision.

AQC limit for EU POP

AQC limits for substances present in EU POP regulation are in full accordance with the terms detailed for each substance.

General requirements for laboratory testing

- Sample picture

Picture of tincture samples received by the laboratory must be taken **without** plastic bag.

- Sample preparation

Edge tincture samples are packaged in airtight tubes provided by AQC.

Edge tincture samples are shipped unpolymerized.

For dye/pigment related substances testing, pools of 6 tinctures are prepared by AQC.

In case of substance detection considered as critical by AQC or in case of non-compliance, AQC manages the individual samples constituent of the pool of 6 tinctures.

Polymerization of edge tinctures is performed by the laboratory.

Safety data Sheets and Technical sheets are available upon request at AQC.

TESTING PACK FOR NATIVE TINCTURE

Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Test Method	
Aldehyde	Formaldehyde	-	50-00-0	75 mg/kg	GB 20400-2006	ISO 17226-1 adapted	
Anti-UV	2-benzotriazol-2-yl-4,6-di-tert-butylphenol	UV-320	3846-71-7	not detected	REACH XIV	Solvent extraction GC-MS detection	
	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol	UV-327	3864-99-1				
	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	UV-328	25973-55-1				
	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol	UV-350	36437-37-3				
Bisphenols	4,4'-isopropylidenediphenol (bisphenol A)	BPA	80-05-7	1'000 mg/kg	REACH SVHC	internal method	
	4,4'-(1-methylpropylidene)bisphenol (bisphenol B)	BPB	77-40-7	1'000 mg/kg			
	4,4'-sulphonyldiphenol (bisphenol S)	BPS	80-09-1	1'000 mg/kg			
	2,2'-methylene-diphenol (bisphenol F)	BPF	620-92-8	for information	REACH restriction intention		
	4,4'-[2,2,2-trifluoro-1 (trifluoromethyl)ethylidene]diphenol (bisphenol AF)	BPAF	1478-61-1				
Chlorine compounds	Alkanes, C10-13, chloro	SCCP	85535-84-8	1'000 mg/kg	REACH SVHC ORRChim EU POP. Annex A	Solvent extraction GC-MS detection	
	Alkanes, C14-17, chloro	MCCP	85535-85-9 198840-65-2 1372804-76-6	1'000 mg/kg	AQC		
Halogenated compounds	Bromine (for brominated flame retardants)	Br	7726-95-6	not detected ¹	Various regulations	EDX	
	Fluorine (for pro- and per-fluorinated substances)	F	7782-41-4	not detected ²			
Phenols	Octylphenols - 4-(1,1,3,3-tetramethylbutyl)phenol	OP PTOP	- 140-66-9	100 mg/kg (sum OP+OPEO)	REACH SVHC OChim Annex XIV (AQC)	ISO 18218 adapted	
	Octylphenol ethoxylates - 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	OPEO -	- 9002-93-1 2497-59-8 2315-67-5 2315-61-9				
	Nonylphenols - 4-Nonylphenol, branched and linear - Isononylphenol	NP 4-NP -	25154-52-3 several CAS 11066-49-2				100 mg/kg (sum NP+NPEO)
	Nonylphenol Ethoxylates - 4-Nonylphenol, branched and linear, ethoxylated Incl. isononylphenol ethoxylated	NPEO (4-NPEO) -	- several CAS 37205-87-2				
	p-(1,1-dimethylpropyl)phenol	PTPP PTAP	80-46-6	1'000 mg/kg each	REACH SVHC		internal method
	4-heptylphenol, branched and linear	4-HP	1987-50-4 72624-02-3				
	para-tert-butylphenol	PTBP	98-54-4				

¹ In case of detection of Bromine, please perform complementary testing of Brominated flame retardants (page 6/11)

² In case of detection of Fluorine, please perform complementary testing of pro- and per-fluorinated substances (page 7/11)

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Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Testing Method
Phthalates	Diisobutyl phthalate	DIBP	84-69-5	1'000 mg/kg (sum)	REACH XVII entry 51	ISO 16181
	Dibutyl phthalate	DBP	84-74-2			
	Benzyl butyl phthalate	BBP	85-68-7			
	Bis(2-ethylhexyl) phthalate	DEHP	117-81-7			
	Bis(2-methoxyethyl) phthalate	DMEP	117-82-8	1'000 mg/kg (each)	REACH SVHC	
	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	DHNUP (L&R)	68515-42-4			
	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	-	71888-89-6			
	Di-isopentyl phthalate	DIPP	605-50-5			
	Di-n-pentyl phthalate	DnPP	131-18-0			
	N-pentyl-isopentylphthalate	nPIPP	776297-69-9			
	1,2-Benzenedicarboxylic acid, dipentyl ester, branched and linear	DNiPP (L&R)	84777-06-0			
	Di-n-hexyl phthalate	DnHP	84-75-3			
	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	DIHxP (L&R)	68515-50-4			
	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters	-	68648-93-1 68515-51-5			
	Dicyclohexyl phthalate	DHCP	84-61-7			
	Diisohexyl phthalate	DIHP	71850-09-4			
	Di-n-octyl phthalate	DNOP	117-84-0			
Di-"isononyl" phthalate	DINP	28553-12-0 68515-48-0	REACH XVII entry 52 (AQC)			
Di-"iso-decyl" phthalate	DIDP	26761-40-0 68515-49-1				
Polycyclic Aromatic Hydrocarbons (PAHs)	Benzo(a)pyrene	BaP	50-32-8	1 mg/kg	REACH XVII entry 50 ORRChim	AfPS-GS-2019-01-PAK
	Benzo(a)anthracene	BaA	56-55-3	1 mg/kg		
	Benzo(b)fluoranthene	BbF	205-99-2	1 mg/kg		
	Benzo(e)pyrene	BeP	192-97-2	1 mg/kg		
	Benzo(j)fluoranthene	BjF	205-82-3	1 mg/kg		
	Benzo(k)fluoranthene	BkF	207-08-9	1 mg/kg		
	Chrysene	CHR	218-01-9	1 mg/kg		
	Dibenzo(a,h)anthracene	DBA	53-70-3	1 mg/kg		
Volatile Organic Compounds (VOCs)	Hexachlorobuta-1,3-diene	-	87-68-3	not detected	EU POP Annex A	EPA 5021A EPA 8260C or internal Headspace GC-MS
	1,1,1-Trichloroethane	-	71-55-6	not detected	ORRChim	
	1,1,2-Trichloroethane	-	79-00-5	not detected		
	Trichloroethylene	-	79-01-6	not detected		
	N,N-dimethylformamide	DMFo	68-12-2	1'000 mg/kg	REACH SVHC Ochim	
	Formamide	-	75-12-7	1'000 mg/kg		
	N,N-Dimethylacetamide	DMAC	127-19-5	1'000 mg/kg		
	2-(2-butoxyethoxy)ethanol	DEGBE	112-34-5	for information	REACH XVII entries 54 & 55 ORRChim (AQC)	
	2-(2-methoxyethoxy)ethanol	DEGME	111-77-3			
	n-hexane	-	110-54-3			
	Tetrachloroethylene	-	127-18-4		Prop65	
	Benzene	BTEX	71-43-2			
	Toluene	-	108-88-3			
	Ethylbenzene	-	100-41-4			
	Meta-Xylene	-	108-38-3			
	Ortho-Xylene	-	95-47-6			
	Para-Xylene	-	106-42-3			



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¹ In case of Bromine detection by EDX, the following testing is performed

Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Testing Method
Flame retardant	Polybromobiphenyls	PBB	59536-65-1	not detected	REACH XVII entry 8 (AQC)	ISO 17881
	Diphenyl ether, pentabromo derivative	PentaBDE	32534-81-9	not detected	EU POP annex A	
	Diphenyl ether, octabromo derivative	OctaBDE	32536-52-0	not detected	EU POP annex A	
	Diphenyl ether, decabromo derivative	DecaBDE	1163-19-5	not detected	EU POP Annex A	
	Diphenyl ether, tetrabromo derivative	TetraBDE	40088-47-9	not detected	EU POP Annex A	
	Diphenyl ether, heptabromo derivative	HeptaBDE	68928-80-3	not detected	EU POP annex A	
	Diphenyl ether, hexabromo derivative	HexaBDE	36483-60-0	not detected	EU POP annex A	
	Diphenyl ether, nonabromo derivative	NonaBDE	63936-56-1	not detected	AQC	
	Hexabromocyclododecane and isomers	HBCDD	Several CAS	25 mg/kg	Prop 65	
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (Tetrabromobisphenol A)	TBBPA	79-94-7	1'000 mg/kg	REACH SVHC	internal method
	Bis(2-ethylhexyl) tetrabromophthalate	-	26040-51-7	1'000 mg/kg		
	1,1'-[ethane-1,2-diylbis(oxy)]bis[2,4,6-tribromobenzene]	-	37853-59-1	1'000 mg/kg		

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² In case of Fluorine detection by EDX, the following testing is performed

Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Test Method
PFOS and related substances	Perfluorooctanesulfonic acid	PFOS	1763-23-1	0.2 mg/kg (sum)	ORRChim EU POP	ISO 23702-1
	Perfluorooctanesulfonic acid, potassium salt	PFOS-K	2795-39-3			
	Perfluorooctanesulfonic acid, lithium salt	PFOS-Li	29457-72-5			
	Perfluorooctanesulfonic acid, ammonium salt	PFOS-NH ₄	29081-56-9			
	Perfluorooctane sulfonate diethanolamine salt	PFOS-NH(OH) ₂	70225-14-8			
	Perfluorooctanesulfonic acid, tetraethylammonium salt	PFOS-N(C ₂ H ₅) ₄	56773-42-3			
	N-Ethylperfluoro-1-octanesulfonamide	N-Et-FOSA	4151-50-2			
	N-Methylperfluoro-1-octanesulfonamide	N-Me-FOSA	31506-32-8			
	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol	N-Et-FOSE	1691-99-2			
	2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol	N-Me-FOSE	24448-09-7			
	Perfluoro-1-octanesulfonyl fluoride	POSF	307-35-7			
	Perfluorooctane sulfonamide	PFOSA	754-91-6			
	1-Decanaminium, N-decyl-N,N-dimethyl-, salt with heptadecafluorooctane-1-sulfonic acid (1:1)	-	251099-16-8			
PFOA and its salts	Perfluorooctanoic acid	PFOA	335-67-1	0.025 mg/kg (sum)	EU POP	ISO 23702-1
	Sodium perfluorooctanoate	PFOA-Na	335-95-5			
	Potassium perfluorooctanoate	PFOA-K	2395-00-8			
	Silver perfluorooctanoate	PFOA-Ag	335-93-3			
	Perfluorooctanoyl fluoride	PFOA-F	335-66-0			
	Ammonium pentadecafluorooctanoate	APFO	3825-26-1			
	Chromium(3+) perfluorooctanoate	-	68141-02-6			
	Ethanaminium, N,N,N-triethyl-, salt with pentadecafluorooctanoic acid (1:1)	-	98241-25-9			
PFOA related substances	1H,1H,2H,2H-Perfluorodecanesulfonic acid	8:2 FTS	39108-34-4	1 mg/kg (sum)	EU POP	ISO 23702-1
	Methyl perfluorooctanoate (Me-PFOA)	Me-PFOA	376-27-2			
	Ethyl perfluorooctanoate (Et-PFOA)	Et-PFOA	3108-24-5			
	2-Perfluorooctylethanol (8:2 FTOH)	8:2 FTOH	678-39-7			
	1H,1H,2H,2H-Perfluorodecyl acrylate	8:2 FTA	27905-45-9			
	1H,1H,2H,2H-Perfluorodecyl methacrylate	8:2 FTMA	1996-88-9			
	2H,2H,3H,3H-Perfluoroundecanoic acid	4HPFuNA	34598-33-9			
	Perfluoro-3,7-dimethyloctanoic acid	PF3,7 DMOA	172155-07-6			
	1H,1H,2H,2H-Perfluorododecyl acrylate	10:2 FTA	17741-60-5			
	1H,1H,2H,2H-Perfluorododecan-1-ol	10:2 FTOH	865-86-1			
C9-C14 PFCAs, their salts and related substances	Henicosafuoroundecanoic acid	PFUnA	2058-94-8	0.025 mg/kg (sum)	REACH XVII Entry 68 (AQC)	ISO 23702-1
	Heptacosafuorotetradecanoic acid	PFTDA	376-06-7			
	Pentacosafuorotridecanoic acid	PFTrDA	72629-94-8			
	Tricosafuorododecanoic acid	PFDoDA	307-55-1			
	Perfluorononanoic acid and its sodium and ammonium salts	PFNA	375-95-1			
	Nonadecafluorodecanoic acid and its sodium and ammonium salts	PFDA	3108-42-7 3830-45-3 335-76-2			
	C9-C14 PFCAs related substances	-	several	0.260 mg/kg (sum)		
C4-C6 PFAS	Perfluorohexane-1-sulphonic acid	PFHxS	355-46-4	1'000 mg/kg	REACH SVHC	ISO 23702-1
	Perfluorobutane sulfonic acid and its salts	PFBS	375-73-5 375-72-4 25628-08-4 34454-97-2	1'000 mg/kg		
	Perfluoroheptanoic acid and its ammonium, sodium and potassium salts	PFHpA	375-85-9 6130-43-4 20109-59-5 21049-36-5	1'000 mg/kg	REACH SVHC	
	Undecafluorohexanoic acid, its salts and related substances	PFHxA	several	for information	REACH restriction intention	



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TESTING PLAN FOR DYES/PIGMENTS RELATED SUBSTANCES (POOL OF 6 TINCTURES)

Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Test Method		
Carcinogenic and allergenic dyes	Navy blue 018112	-	118685-33-9	1000 mg/kg	REACH XVII Entry 43 (appx 9)	DIN 54231		
	C.I. Pigment Red 104 ¹	-	12656-85-8	500 mg/kg each	REACH XVII entry 63			
	C.I. Pigment Yellow 34 ¹	-	1344-37-2					
	C.I. Solvent Violet 8	-	561-41-1	1000 mg/kg each	REACH SVHC			
	C.I. Solvent Blue 4	Victoria blue B base	6786-83-0					
	C.I. Direct Red 28 ²	Congo Red	573-58-0					
	C.I. Direct Black 38 ²	Chlorazole Black E	1937-37-7					
	C.I. Basic Blue 26	Victoria Blue B	2580-56-5					
	C.I. Basic Red 9	Basic Fuschin	569-61-9	50 mg/kg each	REACH XVII entry 72			
	C.I. Basic Violet 3 with ≥ 0,1 % of Michler's ketone	Crystal Violet Gentian Violet	548-62-9					
	C.I. Disperse Blue 1	-	2475-45-8	for information	REACH XVII Proposal for allergens (AQC)			
	C.I Disperse Blue 3	-	2475-46-9					
	C.I Disperse Blue 7	-	3179-90-6					
	C.I Disperse Blue 26	-	3860-63-7					
	C.I Disperse Blue 35	-	12222-75-2					
	C.I Disperse Blue 102	-	12222-97-8					
	C.I Disperse Blue 106	-	68516-81-4					
	C.I Disperse Blue 124	-	15141-18-1					
	C.I Disperse Blue 291	-	56548-64-2					
	C.I Disperse Brown 1	-	23355-64-8					
	C.I Disperse Orange 1	-	2581-69-3					
	C.I Disperse Orange 3	-	730-40-5					
	C.I Disperse Orange 37/59/76	-	13301-61-6 12223-33-5 51811-42-8					
	C.I Disperse Red 1	-	2872-52-8					
	C.I Disperse Red 11	-	2872-48-2					
	C.I Disperse Red 17	-	3179-89-3					
	C.I Disperse Yellow 1	-	119-15-3					
	C.I Disperse Yellow 9	-	6373-73-5					
	C.I Disperse Yellow 23	-	6250-23-3					
	C.I Disperse Yellow 39	-	12236-29-2					
	C.I Disperse Yellow 49	-	54824-37-2					
	C.I Disperse Yellow 64	-	10319-14-9					
	C.I Disperse Orange 149	-	85136-74-9					
	C.I Disperse Violet 1	-	128-95-0					
	C.I Disperse Violet 93	-	122463-28-9					
	C.I Disperse Yellow 3	-	2832-40-8				for information	Prop65
	C.I Disperse Orange 11	-	82-28-00					
	C.I. Acid Red 26	Ponceau Red	3761-53-3					
	C.I. Acid Red 114	-	6459-94-5					
	C.I. Acid Violet 49	Benzyl violet 4B	1694-09-3					
C.I. Direct blue 6 ²	-	2602-46-2						
C.I. Direct Blue 15	-	2429-74-5						
C.I. Direct Blue 218	-	28407-37-6						
C.I. Direct Brown 95 ²	-	16071-86-6						
C.I. Pigment Red 53	D&C Red No.8	2092-56-0						
C.I. Pigment Red 53:1	D&C Red No.9	5160-02-1						
C.I. Pigment Violet 1(or Basic violet 10)	D&C Red No.19	81-88-9						
C.I. Solvent Yellow 14	-	842-07-9						
C.I. Solvent Yellow 34	-	492-80-8						

¹ Limit expressed as Lead metal content (entry 63) - Compliance ensured by total Lead testing with the limit of 90 mg/kg.

² Compliance ensured by aromatic amines testing with the limit of 30 mg/kg (REACH annex XVII entry 43)

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Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Test Method			
Aromatic amines	Biphenyl-4-ylamine	-	92-67-1	30 mg/kg each	REACH XVII entry 43	ISO 17234 adapted			
	Benzidine	-	92-87-5						
	4-chloro-o-toluidine ³	-	95-69-2						
	2-naphthylamine ³	-	91-59-8						
	4-o-tolylazo-o-toluidine	-	97-56-3						
	5-nitro-o-toluidine	-	99-55-8						
	4-chloroaniline	-	106-47-8						
	4-methoxy-m-phenylenediamine ³	-	615-05-4						
	4,4'-methylenedianiline	MDA	101-77-9						
	3,3'-dichlorobenzidine	-	91-94-1						
	3,3'-dimethoxybenzidine	-	119-90-4						
	4,4'-bi-o-toluidine	-	119-93-7						
	4,4'-methylenedi-o-toluidine	-	838-88-0						
	6-methoxy-m-toluidine	-	120-71-8						
	4,4'-methylenebis[2-chloroaniline]	MOCA	101-14-4						
	4,4'-oxydianiline	-	101-80-4						
	4,4'-thiodianiline	-	139-65-1						
	o-toluidine	-	95-53-4						
	4-methyl-m-phenylenediamine	-	95-80-7						
	2,4,5-trimethylaniline ³	-	137-17-7	for information	AQC				
o-anisidine	-	90-04-0	Prop 65						
4-aminoazobenzene	-	60-09-3							
2,6-xylydine	-	87-62-7	for information	REACH XVII entry 47 (AQC)	ISO 17075-2 adapted				
2,4-xylydine	-	95-68-1							
p-phenylenediamine	PPD	106-50-3							
Aniline	-	62-53-3							
Metals	Chromium (VI) and its related substances ⁴	Cr(VI)				18540-29-9	3 mg/kg of dry matter	REACH SVHC	ISO 17072-2 adapted
	Chromium	Cr				7440-47-3	for information		
	Cadmium	Cd				7440-43-9	100 mg/kg		
	Lead	Pb				7439-92-1	90 mg/kg		
	Mercury	Hg				7439-97-6	1 mg/kg		
	Barium ⁵	Ba				7440-39-3	for information		
	Boron ⁵	B	7440-42-8						
	Arsenic ⁶	As	7440-38-2						
	Strontium ⁷	Sr	7440-24-6						
	Cobalt ⁸	Co	7440-48-4	for information					
	Nickel ⁹	Ni	7440-02-0		AQC				
	Tin ¹⁰	Sn	7740-31-5		1000 mg/kg	REACH XVII entry 20			

Notes³ to¹⁰ : cf next page

³ Analytical equivalence between aromatic amines listed in entry 43 and entry 72 of REACH Annex XVII

Entry 43			Entry 72		
Substance name	CAS number	Formula	Substance name	CAS number	Formula
4-chloro-o-toluidine	95-69-2		4-chloro-o-toluidinium chloride	3165-93-3	
2-naphthylamine	91-59-8		2-naphthylammoniumacetate	553-00-4	
4-methoxy-m-phenylenediamine	615-05-4		4-methoxy-m-phenylenediammonium sulphate	39146-41-7	
2,4,5-trimethylaniline	137-17-7		2,4,5-trimethylaniline hydrochloride	21436-97-5	

⁴ Chromium (VI) is not tested if total Chromium is not detected (LOD should be below or equal to 3 mg/kg)

Chromium (VI) related substances stands for the following substances:

- Sodium chromate (CAS 7775-11-3)
- Sodium dichromate (CAS 7789-12-0, CAS 10588-01-9)
- Potassium chromate (CAS 7789-00-6)
- Potassium dichromate (CAS 7778-50-9)
- Ammonium dichromate (CAS 7789-09-5)
- Chromium trioxide (CAS 1333-82-0)
- Chromic acid (CAS 7738-94-5)
- Oligomers of chromic acid and dichromic acid and strontium chromate (CAS 7789-06-2)
- Potassium hydroxyoctaoxodizincatedichromate (1-) (CAS 11103-86-9)
- Pentazinc chromate octahydroxide (CAS 49663-84-5)
- Dichromium tris(chromate) (CAS 24613-89-6)

⁵ Screening for Barium diboron tetraoxide (CAS 13701-59-2). In case of result > LOQ for barium or boron, a stoichiometric calculation is performed by AQC based on the molar mass of the SVHC and barium and boron elements.

⁶ Screening for diarsenic pentaoxide (CAS 1303-28-2) and diarsenic trioxide (CAS 1327-53-3). In case of result > LOQ, a stoichiometric calculation is done by AQC based on the molar mass of the 2 SVHCs and arsenic element.

⁷ Screening for Strontium chromate (CAS 7789-06-2). In case of result > LOQ, a stoichiometric calculation is done by AQC based on the molar mass of the SVHC and strontium element.

⁸ Screening for Cobalt dichloride (CAS 7646-79-9), Cobalt(II) sulphate (CAS 10124-43-3), Cobalt(II) dinitrate (CAS 10141-05-6), Cobalt(II) carbonate (CAS 513-79-1), Cobalt(II) diacetate (CAS 71-48-7). In case of result > LOQ, a stoichiometric calculation is done by AQC based on the molar mass of the 4 SVHCs and cobalt element.

⁹ In case of Nickel detection > 5 mg/kg, Nickel release is performed per EN ISO 1811+A1 and limited to 0.5 µg/cm²/week (in a separate report)

¹⁰ upon request only, AQC could go further in the characterization of Tin related substances by the specific testing of organo-tins below

Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Test Method
Organotins	Tributyltin and related compounds Incl. TBT metacrylate	TBT	several CAS incl. 2155-70-6	1'000 mg/kg each	REACH XVII entry 20 & REACH SVHC	ISO 16179 adapted
	Triphenyltin and related compounds Incl. TPT hydroxide	TPT	several CAS incl. 76-87-9			
	All other tri-substituted tin compounds	-	Several CAS			
	Dibutyltin and related compounds	DBT	several CAS incl. 683-18-1			
	Diocetyl tin and related compounds	DOT	several CAS			
	di-µ-oxo-di-n-butylstanniohydroxyborane	DBB	75113-37-0		ORRChim REACH XVII entry 21	









LIS006_07 draft_AQC RSL for edge tinctures

Final Audit Report

2023-04-05

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