AQC ASSOCIATION POUR L´ASSURANCE QUALITÉ DES FABRICANTS DE BRACELETS CUIR	**DOC nb**	LIS010_08
	Replace	LIS010_07

RESTRICTED SUBSTANCES LIST FOR LEATHER BRACELET

Application date: 26Aug25		Page 1/7
Written by	Quality review (signature/date) 26/08/2025	Process owner (signature/date) 26/08/2025
Tibaud Cardis Technical and Quality Assistant	David Astier Technical and Quality Officer	Charles-Henri Solioz Technical and Quality Manager

Change log

Version	Date	Modification
07	27May24	Revision – Decision TWG 16May24 (action CQI-24-143) • Complete review of the document • Add of procedure for quality control of leather bracelets (PRO044) • Scope of the document: based on a literal interpretation of regulations • Limit for SVHCs: add of AGEC law • Limits for phthalates: Add of rules of entry 72 of annex XVII of REACH • Limits for EU POP: Add of conditions for PFOS and related substances • Sample preparation: Request of no conditioning before Cr(VI) testing (action CQI-23-100) • Option for bi-component and textile bracelet – Compliance with entry 72 (decision TWG 27Oct22 – action CQI-22-059B)

08	26Aug25	Revision – Validation TWG 22Aug25
		• Addition of PRO051 as Level 2 document
		• Bisphenol : Precision of CAS numbers to cover all isomers of BPS
		• Metal: reduction of limit for
		  ○ Cadmium to 75 mg7kg and Lead to 90 mg/kg as per Minnesota 325E.3892
		  ○ Mercury to 1mg/kg as per JP112
		• PFOS : change of limit
		  ○ PFOS and its salts 0.025 mg/kg (sum)
		  ○ PFOS related substances 1 mg/kg (sum)
		• PFHxS & PFHxA : addition of compound & its salts and compounds related substances
		• C4-C7 : simplification and addition of note 2
		• SVHC : addition of
		  ○ UV-328 (2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol, 25793-55-1)
		• Miscellaneous typo correction:
		  ○ C4-C7 : correction of carbon number
		  ○ split of PFAS compound & its salts and compounds related substance (PFOS, PFOA)
		  ○ Correction of note numbering

Associated document (level 1)

Document	Title
MAQ016	Process sheet – Chemical Compliance Components & Bracelets

Associated document (level 2)

Document	Title
PRO044	Management of Quality Control for leather bracelets
PRO051	Veille réglementaire et normative

Associated document (level 3)*

Document	Title
LIS007	AQC RSL for metallic parts

* Some internal documents are not disclosed.

Scope of the document

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

For the definition of the limit present in this Restricted Substances list (RSL), AQC takes into consideration all the current international regulations for dangerous substances strictly applicable to articles, leather articles, leather accessories and leather watch bracelet and select the strictest limit for the parameters which are mandatory for the placing of the leather bracelet on the market.

The list of chemicals present in this document has been selected on a risk-based approach completed by AQC experience and knowledge.

International regulations mentioned in this document are:

Abbreviation	Regulation	Country	Comment
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	-
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	-
QB/T 2540	Leather Bracelets	China	Voluntary norm
REACH XIV	Regulation (EC) no 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation 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

International norm mentioned in this document is:

Abbreviation	Regulation	Country	Comment
EN ISO 14931	Leather – Leather for apparel (excluding furs) Specifications and sampling procedures	Worldwide	AQC requirement

Limit for 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)

In article L451-9-1 of AGEC law, it is requested to inform consumers through a labelling of the product, any presence of dangerous substance (also called SVHCs in this document for practical reasons).
Limit concentration for information of the consumer is 0.1% (w/w).

The strategy adopted by AQC is to select and test SVHC listed substances in the different materials which are used in leather bracelet manufacturing.

In this RSL dedicated to leather bracelet, only SVHC substances with known presence in materials parts of leather bracelet manufacturing are present.

SVHCs are pro-actively limited at 1'000 mg/kg in the leather bracelet by AQC members but the presence above 1'000 mg/kg is not an obstacle for placing on the market if the legal duties of information are correctly completed.

Limit for phthalates in REACH restriction – entry 72

List of phthalates for entry 72 of REACH has been built on the basis of the rules given in the ECHA Q&A ID 1806 Version 1.0 of June 2nd, 2021.

Following Q&A 1806, the phthalates included in the scope of entry 72 originate from:
- Appendix 12 mentioned in the entry 72
- Another entry of annex XVII of REACH and classified as carcinogenic, mutagenic or toxic to reproduction (CMR), category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 (CLP).

The sum of all the phthalates identified above shall comply with the entry 72 limit of 1'000 mg/kg

AQC limits 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 and more precisely the limits indicated in the reformulation injunctions present in 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 present in the materials used for leather bracelet production and keeps available for Watch Brands all the data as a support for labelling decision.

AQC limits for EU POP

AQC limits for substances present in EU POP regulation are in full accordance with the terms detailed for each substance. Nevertheless, leather bracelet is a multi-material complex object and limits of EU POP for PFOS & related substances could not be applied and absence of detectable PFOS per ISO 23702-1 limit of quantification (0.01 mg/kg) has been selected to prove legal compliance.

For EU POP compliance of leather materials used for the manufacturing of the bracelet tested, please refer to testing of native leather materials.

AQC requirements for laboratory testing

- Sample picture

Picture of leather bracelet samples received by the laboratory have to be taken **without** plastic bag.

- Sample preparation

Leather bracelet samples are prepared as followed:

- Chromium (VI) : 1 bracelet strand is entirely cut and homogenized as described in ISO 4044. AQC requires no conditioning of the sample before testing.
- All other methods: bracelets are grinded as described in ISO 4044

Metallic inserts should be removed from the bracelet before grinding.
They could be tested per AQC RSL for metals (LIS007) if indicated in the testing request form

Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Test Method
Aldehyde	Formaldehyde	-	50-00-0	75 mg/kg	GB 20400-2006 REACH XVII (entry 72)	ISO 17226-1
Aromatic amines	Biphenyl-4-ylamine	-	92-67-1	< 30 mg/kg each	REACH XVII (entry 43) & GB 20400-2006	ISO 17234
	Benzidine	-	92-87-5			
	4-chloro-o-toluidine	-	95-69-2			
	2-naphthylamine	-	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	-	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	-	137-17-7			
	4-methyl-m-phenylenediamine	-	90-04-0			
	4-aminoazobenzene	-	60-09-3			
	2,6-xylidine	-	87-62-7			
	2,4-xylidine	-	95-68-1			
Biocides	Dimethylfumarate	DMFu	624-49-7	0.1 mg/kg	REACH XVII (entry 61) ORRChim	ISO 16186
Bisphenols	Sulphonyldiphenol (bisphenol S)	BPS	80-09-1 (4,4') 5397-34-2 (2,4')	1000 mg/kg	REACH SVHC OChim	ISO 11936
Chlorophenols	Pentachlorophenols	PCP	87-86-5	0.5 mg/kg	ORRChim Annex 1. Chap 3.b	ISO 17070
	Tetrachlorophenols 2,3,4,5- 2,3,4,6- 2,3,5,6-	TeCP	25167-83-3 4901-51-3 58-90-2 935-95-5	0.5 mg/kg	ORRChim Annex 1.2 Chap 3.d	
Chlorine compounds	Alkanes, C10-13, chloro	SCCP	85535-84-8	1'500 mg/kg	EU POP ORRChim	ISO 18219
Metals	Chromium (VI)	Cr(VI)	18540-29-9	3 mg/kg of dry matter	REACH XVII entry 47	ISO 17075-2 No conditioning
	Cadmium	Cd	7440-43-9	75 mg/kg	Minnesota 325E.3892	ISO 17072-2
	Lead	Pb	7439-92-1	90 mg/kg		
	Mercury	Hg	7439-97-6	1 mg/kg	JP 112 (AQC)	
	Antimony extractable	Sb	7440-36-0	30 mg/kg	QB/T 2540	ISO 17072-1
	Arsenic extractable	As	7440-38-2	1 mg/kg	REACH XVII Entry 72	
	Cadmium extractable	Cd	7440-43-9	1 mg/kg		
	Lead extractable	Pb	7439-92-1	1 mg/kg		

Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Test Method
PFOS and its salts	Perfluorooctanesulfonic acid	PFOS	1763-23-1	0.025 mg/kg (sum)	EU POP ORRChim	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-$N(C_2H_5)_4$	56773-42-3			
PFOS related substances	N-Ethylperfluoro-1-octanesulfonamide	N-Et-FOSA	4151-50-2	1 mg/kg (sum)		
	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			
PFOA and its salts	Perfluorooctanoic acid	PFOA	335-67-1	0.025 mg/kg (sum)	EU POP ORRChim	
	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			
PFOA related substances	1H,1H,2H,2H-Perfluorodecanesulfonic acid	8:2 FTS	39108-34-4	1 mg/kg (sum)		
	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			
PFHxS and its salts	Perfluorohexane-1-sulphonic acid	PFHxS	355-46-4	0.025 mg/kg (sum)	EU POP ORRChim	
	Perfluorohexane-1-sulphonic acid, potassium salt	PFHxS-K	3871-99-6			
	Perfluorohexane-1-sulphonic acid, lithium salt	PFHxS-Li	55120-77-9			
	Perfluorohexane-1-sulphonic acid, ammonium salt	PFHxS-NH4	68259-08-5			
	Perfluorohexane-1-sulphonic acid, sodium salt	PFHxS-Na	82382-12-5			
	Perfluorohexane sulfonyl fluoride	PFHxSF	423-50-7			
PFHxS related substances	Potassium N-ethyl-N-[(tridecafluorohexyl)sulphonyl]glycinate	-	67584-53-6	1 mg/kg (sum)		
	Tridecafluoro-N-methylhexanesulphonamide	-	68259-15-4			
	Perfluorohexanesulfonamide	-	41997-13-1			
PFHxA and its salts	Undecafluorohexanoic acid	PFHxA	307-24-4	0.025 mg/kg (sum)	EU POP ORRChim	
	Undecafluorohexanoic acid, ammonium salt	APFHx	21615-47-4			
	Undecafluorohexanoic acid, sodium salt	-	2923-26-4			
PFHxA related substances	1 H,1H,2H,2H-Perfluorooctane sulfonic acid	6:2 FTS	27619-97-2	1 mg/kg (sum)		
	1H,1H,2H,2H-Perfluoro-1-octanol	6:2 FTOH	647-42-7			
	1H,1H,2H,2H-Perfluorooctyl methacrylate	6:2 FTMA	2144-53-8			
	1H,1H,2H,2H-Perfluorooctyl acrylate	6 :2 FTA	17527-29-6			

Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Strictest Regulation	Test Method
Phthalates	Bis(2-methoxyethyl) phthalate	DMEP	117-82-8	1000 mg/kg (sum)	REACH XVII entry 72	ISO 16181
	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			
	Di-n-hexyl phthalate	DnHP	84-75-3			
	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	DIHxP (L&R)	68515-50-4		REACH XVII entry 72 indirectly through entry 30 (appendix 6) & CMR classification in CLP*	
	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	DHNUP (L&R)	68515-42-4			
	1,2-Benzenedicarboxylic acid, dipentyl ester, branched and linear	DNiPP (L&R)	84777-06-0			
	Dicyclohexyl phthalate	DHCP	84-61-7			
	Di-isohexyl phthalate	DIHP	71850-09-4			
	Di-n-octyl phthalate**	DNOP	117-84-0		REACH XVII entry 72 indirectly through entry 52 & CMR classification in CLP*	
	Di-isononyl phthalate**	DINP	28553-12-0 68515-48-0			
	Di-isobutyl phthalate	DIBP	84-69-5		REACH XVII entry 72 indirectly through entry 51 & CMR classification in CLP*	
	Dibutyl phthalate	DBP	84-74-2			
	Benzyl butyl phthalate	BBP	85-68-7			
	Bis(2-ethylhexyl) phthalate	DEHP	117-81-7			
Physical	Hydrogen ion	pH	-	≥ 3.5	EN ISO 14931 (AQC)	ISO 4045
(organo) Stannic compounds	Tributyltin and related compounds incl. TBT metacrylate	TBT	several CAS incl. 2155-70-6	1000 mg/kg	REACH XVII entry 20	ISO 16179
	Triphenyltin and related compounds incl. TPT hydroxide	TPT	several CAS incl. 76-87-9	1000 mg/kg		
	All other tri-substitued tin compounds	-	Several CAS	1000 mg/kg		
	Dibutyltin and related compounds	DBT	several CAS incl. 683-18-1	1000 mg/kg		
	Dioctyltin and related compounds	DOT	several CAS	1000 mg/kg		
	Di-μ-oxo-di-n-butylstanniohydroxyboran (Dibutyltin hydrogen borate)	DBB	75113-37-0	1000 mg/kg	REACH XVII entry 21	
Anti-UV	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	UV-328	25973-55-1	10 mg/kg	EU POP (2027) (AQC)	Internal method

* per requirements of ECHA Q&A ID 1806 Version 1.0 of June 2nd 2021
**no harmonized classification – few classification as reprotoxic – included by caution.

OPTION FOR BI-COMPONENTS RUBBER/LEATHER BRACELET

Substance family	Substance Name	Abbr.	CAS Number	AQC limit	Regulation	Testing Method
Brominated flame retardants	Diphenyl ether, octabromo derivative	OctaBDE	32536-52-0	1'000 mg/kg	REACH XVII entry 45	ISO 17881
	Diphenyl ether, decabromo derivative	DecaBDE	1163-19-5	10 mg/kg (sum)	EU POP ORRChim	
	Diphenyl ether, pentabromo derivative	PentaBDE	32534-81-9			
	Diphenyl ether, tetrabromo derivative	TetraBDE	40088-47-9			
	Diphenyl ether, heptabromo derivative	HeptaBDE	68928-80-3			
	Diphenyl ether, hexabromo derivative	HexaBDE	36483-60-0			
	Diphenyl ether, nonabromo derivative*	NonaBDE	63936-56-1			
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		
SVHC	6,6'-di-tert-butyl-2,2'- methylenedi-p-cresol	-	119-47-1	1'000 mg/kg	REACH SVHC OChim	Internal method

* not listed *per se* but indicated on EU POP website as present in commercial decaBDE mixture.

LIS010_08 AQC RSL for bracelet

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