

PRODUCT RESTRICTED SUBSTANCES LIST (PRSL)

ASEN Leather Ind. & Trade Inc. — LWG Gold Certified Bovine Tannery

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Prepared By	Quality / R&D Department
Approved By	Export Director
Scope	All finished leather articles (FA) and Wet-Blue (WB) produced by ASEN Leather Ind. & Trade Inc.
Reference Standard	LWG Protocol 7.2.2 ZDHC MRSL v3.1 REACH Regulation (EU) 1907/2006

Purpose: This document specifies the control criteria for restricted and banned substances hazardous to consumer health and the environment. It is compiled in accordance with LWG Protocol 7.2.2, ZDHC MRSL v3.1, REACH Regulation (EU) 1907/2006, and applicable global quality standards. Limits apply to all finished leather articles (FA) and Wet-Blue (WB) manufactured by ASEN Leather Ind. & Trade Inc. This consolidated revision merges the LWG internal RSL (ASN.LWG.DK.9.1 Rev.3) and the previous PRSL (PR.12), resolving limit discrepancies by adopting the stricter value in each case.

Column Legend:

FA	WB	Finished Article	Wet-Blue
✓	✓	Applies	Applies
–	–	Not applicable	Not applicable

1. Alkylphenol (APs) & Alkylphenol Ethoxylates (APEOs)

Found in detergents, scouring agents, wetting agents, softeners, and emulsifying agents. APs are intermediates in APEO manufacture and polymer stabilisers.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
Nonylphenol Group						
1	Various	Nonylphenol (NP)	100	EN ISO 18218-2:2015	✓	–
2	Various	Nonylphenol Ethoxylates (NPEOs)	100	EN ISO 18218-2:2015	✓	–
Octylphenol Group						
3	Various	Octylphenol (OP)	100	EN ISO 18218-1:2015	✓	–
4	Various	Octylphenol Ethoxylates (OPEOs)	100	EN ISO 18218-1:2015	✓	–

2. Azo Dyes & Arylamine Salts

Azo dyes restricted where they degrade to release the listed cleavable amines. Each amine is individually limited at 20 mg/kg. 28 amines listed per EN ISO 17234-2:2011.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
1	92-67-1	4-Aminodiphenyl	20 (each amine)	EN ISO 17234-2:2011	✓	–
2	92-87-5	Benzidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
3	95-69-2	4-Chloro-o-toluidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
4	91-59-8	2-Naphthylamine	20 (each amine)	EN ISO 17234-2:2011	✓	–
5	97-56-3	o-Aminoazotoluene	20 (each amine)	EN ISO 17234-2:2011	✓	–
6	99-55-8	5-Nitro-o-toluidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
7	106-47-8	4-Chloroaniline	20 (each amine)	EN ISO 17234-2:2011	✓	–
8	615-05-4	4-Methoxy-m-phenylenediamine	20 (each amine)	EN ISO 17234-2:2011	✓	–
9	101-77-9	4,4'-Methylenedianiline	20 (each amine)	EN ISO 17234-2:2011	✓	–
10	91-94-1	3,3'-Dichlorobenzidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
11	119-90-4	3,3'-Dimethoxybenzidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
12	119-93-7	3,3'-Dimethylbenzidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
13	838-88-0	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	20 (each amine)	EN ISO 17234-2:2011	✓	–
14	120-71-8	p-Cresidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
15	101-14-4	4,4'-Methylene-bis(2-chloroaniline)	20 (each amine)	EN ISO 17234-2:2011	✓	–
16	101-80-4	4,4'-Oxydianiline	20 (each amine)	EN ISO 17234-2:2011	✓	–
17	139-65-1	4,4'-Thiodianiline	20 (each amine)	EN ISO 17234-2:2011	✓	–
18	95-53-4	o-Toluidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
19	95-80-7	2,4-Toluenediamine	20 (each amine)	EN ISO 17234-2:2011	✓	–
20	137-17-7	2,4,5-Trimethylaniline	20 (each amine)	EN ISO 17234-2:2011	✓	–
21	90-04-0	o-Anisidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
22	60-09-3	4-Aminoazobenzene	20 (each amine)	EN ISO 17234-2:2011	✓	–

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
23	95-68-1	2,4-Xylidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
24	87-62-7	2,6-Xylidine	20 (each amine)	EN ISO 17234-2:2011	✓	–
25	3165-93-3	4-Chloro-o-toluidinium chloride	20 (each amine)	EN ISO 17234-2:2011	✓	–
26	553-00-4	2-Naphthylammonium acetate	20 (each amine)	EN ISO 17234-2:2011	✓	–
27	39156-41-7	4-Methoxy-m-phenylenediammonium sulphate	20 (each amine)	EN ISO 17234-2:2011	✓	–
28	21436-97-5	2,4,5-Trimethylaniline hydrochloride	20 (each amine)	EN ISO 17234-2:2011	✓	–

3. Chlorinated Paraffins

Short-chain chlorinated paraffins (SCCPs, C10-C13) are persistent, bioaccumulative and toxic. Regulated under REACH Annex XVII and referenced in LWG Protocol 7.2.2.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
1	Various	Short Chain Chlorinated Paraffins (SCCPs, C10-C13)	1000	EN ISO 18219-2:2021	✓	✓

4. Dimethylfumarate (DMFu)

Anti-mould agent used in packaging sachets. Restricted due to risk of contact sensitisation and allergic reactions on skin contact with leather.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
1	624-49-7	Dimethylfumarate (DMFu)	0.1	CEN ISO/TS 16186:2012	✓	✓

5. Formaldehyde

Used as anti-creasing/anti-shrinking agent and in polymeric resins. Can be released slowly from leather products during end use.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
1	50-00-0	Formaldehyde	75	EN ISO 17226-1:2017	✓	✓

6. Heavy Metals (Extractable & Total)

Cr(VI) may form from tanning Cr(III) under oxidative conditions. Where the two source RSLs specified different limits for the same metal, the stricter (lower) value has been adopted in this consolidated document.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
1	18540-29-9	Chromium VI – Cr(VI) [with ageing]	3	EN ISO 17075-1/2:2017 + Ageing: ISO 10195:2018	✓	✓
2	7440-43-9	Cadmium (Cd) – Extractable	0.1	DIN EN ISO 17072-1:2017	✓	✓
3	7439-92-1	Lead (Pb) – Extractable	0.2	DIN EN ISO 17072-1:2017	✓	✓
4	7439-97-6	Mercury (Hg) – Extractable	0.02	DIN EN ISO 17072-1:2017	✓	✓
5	7440-38-2	Arsenic (As) – Extractable	0.2	DIN EN ISO 17072-1:2017	✓	✓
6	7440-36-0	Antimony (Sb) – Extractable	20	DIN EN ISO 17072-1:2017	✓	✓
7	7440-39-3	Barium (Ba) – Extractable	1000	DIN EN ISO 17072-1:2017	✓	✓
8	7782-49-2	Selenium (Se) – Extractable	500	DIN EN ISO 17072-1:2017	✓	✓
9	7440-48-4	Cobalt (Co) – Extractable	4	DIN EN ISO 17072-1:2017	✓	✓
10	7440-47-3	Chromium Total (Cr)	200	DIN EN ISO 17072-1:2017	✓	✓
11	7440-02-0	Nickel (Ni) – Extractable	1	DIN EN ISO 17072-1:2017	✓	✓
12	7440-50-8	Copper (Cu) – Extractable	50	DIN EN ISO 17072-1:2017	✓	✓

7. Organotin Compounds

Used as biocides, catalysts in plastic/adhesive production, and heat stabilisers in PVC. Associated with polyurethane coatings and metallic glitter on leather goods.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
1	Various	Tributyltin (TBT)	0.025	CEN ISO/TS 16179:2012	✓	–
2	Various	Trimethyltin (TMT)	1	CEN ISO/TS 16179:2012	✓	–
3	Various	Triphenyltin (TPHT)	0.5	CEN ISO/TS 16179:2012	✓	–
4	Various	Tetrabutyltin (TeBT)	1	CEN ISO/TS 16179:2012	✓	–
5	Various	Tricyclohexyltin (TCyHT)	1	CEN ISO/TS 16179:2012	✓	–
6	Various	Trioctyltin (TOT)	1	CEN ISO/TS 16179:2012	✓	–
7	Various	Tripropyltin (TPT)	1	CEN ISO/TS 16179:2012	✓	–
8	Various	Dimethyltin (DMT)	1	CEN ISO/TS 16179:2012	✓	–
9	Various	Dibutyltin (DBT)	0.2	CEN ISO/TS 16179:2012	✓	–
10	Various	Monobutyltin (MBT)	1	CEN ISO/TS 16179:2012	✓	–
11	Various	Monooctyltin (MOT)	1	CEN ISO/TS 16179:2012	✓	–
12	Various	Diocetyl tin (DOT)	1	CEN ISO/TS 16179:2012	✓	–

8. Ortho-phenylphenol (OPP)

Preservative used in leather finishing and as a carrier agent in polyester dyeing processes.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
1	90-43-7	Ortho-phenylphenol (OPP)	500	DIN EN ISO 17070:2015	✓	–

9. Phthalates

Plasticisers added to flexible polymers. May be present in PVC coatings, adhesives, buttons, and plastic trims on leather articles. The 1000 mg/kg limit applies to the total sum of all listed phthalates.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
1	28553-12-0 / 68515-48-0	Di-isononylphthalate (DINP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
2	26761-40-0 / 68515-49-1	Di-isodecylphthalate (DIDP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
3	117-84-0	Di-n-octylphthalate (DNOP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
4	117-81-7	Di(2-ethylhexyl)phthalate (DEHP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
5	84-74-2	Dibutylphthalate (DBP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
6	85-68-7	Butylbenzylphthalate (BBP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
7	84-69-5	Di-isobutylphthalate (DIBP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
8	131-11-3	Dimethylphthalate (DMP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
9	110-33-8	Di-n-hexylphthalate (DnHP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
10	68515-42-4	DHNUP	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
11	71888-89-6	DIHP	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
12	117-82-8	Bis(2-methoxyethyl)phthalate (BMEP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
13	605-50-5	Diisopentylphthalate (DIPP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
14	776297-69-9	N-pentyl-isopentylphthalate (NPIPP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
15	27554-26-3	Di-isooctylphthalate (DIOP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–
16	133-18-0	Dipentylphthalate (DPP)	1000 (total sum)	GC/MS CPSC-CH-C1001-09.4	✓	–

10. Polychlorophenols

Used as pesticides, textile preservatives, and print paste preservatives. May also arise as dye impurities.

#	CAS No.	Restricted Substance	Limit (mg/kg)	Test Method	FA	WB
1	87-86-5	Pentachlorophenol (PCP)	0.5	DIN EN ISO 17070:2015	✓	–
2	25167-83-3	Tetrachlorophenol (TeCP)	0.5	DIN EN ISO 17070:2015	✓	–
3	88-06-2	Trichlorophenols (TrCPs)	0.5	DIN EN ISO 17070:2015	✓	–

Document Approval

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