

NATURLEDER IVN certified
(IVN Leather Standard)
Version 3.0



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of Natural Textile Industry (IVN)
March 2012

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advice: This analogous translation of IVN NATURLEDER
standard is to serve as a support for non German
speaking users.
The binding version is the German original version.

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1. Principles

1.1. Aim of the standard

The aim of this standard is to achieve high product quality in technical and ecological terms, comparable to the IVN certificate for textiles. The relevant objectives are:

- Implication of all production stages along the processing chain from the raw material to the sale and use of the finished leather (not the leather final product)
- Reasonable minimization of resources consumption
- Protection of environment and health, both in production and during the use
- Consumer-friendly quality of the final product
- Practicability of the criteria into products with good use- and care characteristics
- Global applicability

1.2. Scope and structure

Chemical auxiliaries and processing aids as well as the whole procedures are documented and evaluated for each processing step. All substances and materials used shall be evaluated from gaining the raw material up to waste disposal as long this is practicable and justifiable in effort. Particularly recommendable processes or chemicals will be developed or are already indicated as such.

1.2.1. Commentary on use

In principle, the standard is to be viewed as a binding directive. *Recommendations* that are part of the standard are marked as such mentioned and should be interpreted as “desirable” but non-binding.

The expression „*criteria*“ defines obligatory minimum requirements for leather or leather production.

The symbol „ ↓ “ signals an intended increase in stringency of this requirement (see chapter 4.0).

The phrase „*further recommendation*“ expresses the ambition towards a more comprehensive process ecology. The requirements listed in this context possibly cannot be verified with the final product and often demand a certification of individual process steps.

1.2.2. Further development

At this stage, some aspects of leather production cannot be ultimately and satisfactorily regulated. This concerns in particular the aspects of leather preservation, auxiliary agents for tanning and side dressing. For these aspects, the standard has defined progressive limit values and requirements, which do however not yet correspond to the IVN philosophy. These aspects are to be investigated deeper and shall be adapted in the course of a revision.

The following focal areas for further substantiated research and development of the IVN standard NATURLEDER are seen at present:

- preservative agents:
 - Minimization and elimination strategies
 - Toxicological evaluation of the preservatives and their effects on humans in garment leathers
- tanning agents:
 - in-depth review of how synthetic auxiliary agents for tanning are to be dealt with
- Aromatic amines from group MAK III3 and III4:
 - avoidance of aniline und p-phenylendiamin
- Side dressing:
 - Optimization of use-properties and ecological characteristics
 - Olfactory parameters (solvents)
 - Colour fixing and colour fastnesses (mainly in terms of formaldehyde-free auxiliaries)
 - AOX-free dyeing

1.2. Scope and structure

Version 3.0 of IVN NATURLEDER standard (from February, 29th 2012).

2. Criteria

2.1 Basic requirements

Enterprises of all processing levels - as direct or indirect discharger – must dispose of a two-step waste water plant, which demonstrably complies with the local requirements.

- Substances gained or altered by use of genetically modified organisms (GMOs) have to be avoided. Due to the lack of verification possibilities, total exclusion of these substances is not possible. In the standard the different processes were compared and balanced out against each other. In case of new developments with clear ecological improvements these will be considered in the revision of the standard.
- All assigned chemicals correspond to the following defaults, unless otherwise explicitly specified:
 - Eco toxicity
 - Human toxicity during the periods of production and usage
 - Biodegradability / eliminability of inputs
 - Individual parameters (AOX, heavy metals, pesticides)
 - Recyclability or disposal effects.

Chemicals will be approved on the basis of an assessment of the Material Safety Data Sheets (MSDS).

2.1.1. Basic requirements to the raw skins:

Criteria

Allowed are skins fulfilling the following criteria:

- The place of slaughter must be documented.
- The animals are primarily kept with the aim to produce meat.
- Savage and threatened animal species are explicitly excluded.
- The slaughterhouse respects (as a minimum) the national laws and requirements for slaughter.

Further recommendations

- The animal's place of origin is documented.
- The transport of the animals to the slaughterhouse does not exceed the distance of 400 km.
- The use of skins from certified organic husbandry (according to EC Bio-VO Nr. 2092/91) is aspired.

2.2. Process related criteria

2.2.1. General requirements for chemical inputs in all processing stages

Substance group	prohibited substance / restraint
APEO (i.e. nonylphenol, octylphenol and their derivatives) and EDTA	prohibited. exception: EDTA for tanning agents
halogenated organic compounds	Allowed are colorants and pigments, that contribute < 1% <i>permanent</i> AOX to primary effluent. Other substances are not allowed (except preservative agents provided the requirements for the final product are met).
preservative agents	The use of preservative agents is undesirable. It should be avoided whenever possible (see chapter 1.3 and 4; these requirement apply for all processing stages).

Substance group	prohibited substance / restraint
chlorphenols (PCP, TCP, TeCP)	Prohibited
formaldehyde	Prohibited as auxiliary agent. Processing chemicals with free - or cleavable formaldehyde are allowed, provided that all IVN limits are met.
heavy metals	Prohibited. Inputs must be heavy metal free (according to ETAD). Preparations may not exceed the defined limits. Exception for dyes and pigments: copper and iron are permitted.
aromatic amines according to RL67/548/EWG (European Directive), category C1 and C2	Prohibited.
halogenated solvents	Prohibited.
aromatic solvents	Prohibited.
chromium salts	Prohibited.
glyoxal	Prohibited.
PCB, biocides	Prohibited.
PVC	Prohibited.
organotin compounds (e.g.. TBT, DBT, MBT)	Prohibited.
dimethyl fumarate	Prohibited.
fluorinated compounds e.g. perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA)	Prohibited.
Other toxic substances	<p>Prohibited are substances that</p> <ul style="list-style-type: none"> • are listed in regulation EC 552/2009 (amending regulation EC 1907/2006 (REACH), annex XVII • have been entered to the <i>candidate list of substances of very high concern</i> of the European Chemicals Agency (ECHA) • classified according to the <i>Global Harmonized System</i> (GHS), EG 1272/2008 by the following H-sentences: <ul style="list-style-type: none"> - cancerogenic, mutagenic and teratogenic substances: H 340 (cat. M 1B), H341(Cat. M 2), H350 (Cat. K 1A, K 1B), H350i (Cat. K 1A, K 1B), H351 (Cat. K 2), H360F (Cat. R 1A, R 1B), H360D (Cat. R 1A, R 1B), H360FD (Cat. R 1A, R 1B), H360Fd (Cat. R 1A, R 1B), H360Df (Cat. R 1A, R 1B), H361f (Cat. R 2), H361d (Cat. R 2), H361fd (Cat. R 2), H362 - toxic substances: H300, H301, H304, H310, H311, H330, H331, H370, H371, H372, H373 except preservative agents provided the requirements for the final product are met (s. Kap. 1.3 und 4). - substances hazardous to aquatic environment: H400, H410, H411 - Substances dangerous to the ozon layer: EUH059 • are classified as sensitizing according to DFG MAK IV and list BgVV Cat. A and B ¹⁾. (see TRGS 907 und TRGS 540) <p>¹⁾ The requirement applies to the final product. The use of dyes containing aniline or. p-phenylenediamine is temporarily permitted during a transitional period, as long as the requirements for the final product are met.</p>
Other explicitly prohibited substances	all substances that are prohibited by recognized national or international law are not allowed.

2.2.2 Toxicity / degradability / eliminability of the used inputs

parameter (according to MSDS)	basic chemicals: 1. buffer salts 2. acids 3. glutardialdehyde 4. vegetable tanning agents	colouring & tanning agents: 1. dyes 2. pigments 3. Syntane 4. polymers 5. resin tanning agents	fat-liquoring substances, processing chemicals
oral toxicity ¹⁾ (basic requirements)	LD ₅₀ : not applicable ²⁾	LD ₅₀ > 2,000 mg/kg	LD ₅₀ > 2,000 mg/kg
Aquatic Toxicity (basic requirements)	LC ₅₀ / EC ₅₀ : not applicable	LC ₅₀ / EC ₅₀ > 100 mg/l if biodegradability > 60% > 10 mg/l	LC ₅₀ / EC ₅₀ / IC ₅₀ > 1 mg/kg <i>for bacteria, fishes, daphnia, algae</i>
releation of biodegradability (%) / eliminability (mg/l) (OECD 301, 302A, 302B/303A) ²⁾ to aquatic toxicity (LC ₅₀ or EC ₅₀ or IC ₅₀ ; OECD 201, 202, 203) ³⁾	not applicable	not applicable	only allowed if: <70% und > 100 mg/l >70% und 10-100 mg/l >95% und 1-10 mg/l
bio-accumulative substances	Substances, known to be bio-accumulative ⁴⁾ and not biodegradable (70% 28d OECD 302A) are prohibited (=> TEGEWA classification III = high waste water impact).		

1) Performing new animal tests to determine unknown LD50 values is prohibited. Instead alternative methods (such as conclusions on analogy, calculation from available data of *substances* contained, in vitro test) may be used to determine unknown values

2) Testing methods / [testing duration]: LC50 fish, OECD 203, [96hr]; EC50 daphnia, OECD 202 [48hr]; algae IC50, OECD 201 [72hr] If data for bacteria are available, the evaluation is preferentially based on this data.

3) A substance is considered as (potentially) bio-accumulative, if BCF (= bio-concentration factor) > 100 or if log Pow (= logarithm of the n-octanol-water partition coefficient) > 3

4) L. Noll, Gewässerökologisch orientierte Klassifizierung von Textilhilfsmitteln, Melliland 9/1998, 633-635

Substances with TEGEWA classification ARS III (high relevance for waters) are prohibited.

TEGEWA classification ARS II (relevance for waters) are allowed, if bacteria toxicity EC ≥100 and biodegradability or die eliminability in a effluent treatment plant is granted.

Readily biodegradable: OECD-testing method 301 A F≥60 % BOD/COD or CO₂-formation or ≥70 % DOC-reduction in 28 days.

Biodegradable / eliminable: OECD-testing method 302 B ≥70 % reduction in 28 days or OECD-testing method 302 C ≥60 % O₂-absorbtion or evidence for a reduction of 70 % in precipitation typical for effluent treatment plants.

Aquatic toxicity: formulation of the auxiliary = LC 50 daphnia, alternatively fish

comment: the evaluation regarding „readily biodegradable“, „aquatic toxicity“ and „biodegradable/ eliminable“ cannot solely be made on basis of test data for the preparation but also on the basis of valid data on the single-substance. For preparations of reactive dyes the final product must meet the requirement.

2.2.3. Further recommendation

- The final piece of leather should be decomposable in its whole.
- Separation and identification
- All stages through the processing chain must be established so as to ensure that *IVN Naturleder goods* and conventional products are not commingled and that *IVN Naturleder goods* are not contaminated by contact with prohibited *substances*.
- All *IVN Naturleder goods* must be clearly labeled and identified as such at all stages of the processing chain.

2.2.4. Process related criteria

Preservation of skins and semi finished products

Criteria

The following methods of conservation are allowed:

- cooling with water/ice
- Salting, without addition of further preserving agents

Not allowed are:

- drying of the skins
- all synthetic preserving agents, especially
 - use of PCP, Chloro-phenoles and Naphthalene
 - Formaldehyde (FA) and FA-cleaving agents as a preservation agent

Transitionally the use of preserving agents according to chapter 1.2. „Basic requirements“ and chapter 4 “Requirements for the final product“ is permitted.

Further Recommendations

Transport from slaughterhouse to tannery and transport of non tanned skins or tanned semi finished products should be kept as short as possible, to minimize the need of conservation.

Soaking

Criteria

- Surfactants and detergents meet the requirements mentioned under 1.1 and 1.2 and are biologically degradable.
- Surfactants must not belong to the group of nonylphenoles
- Additives used for the alkaline hydrolysis meet the requirements mentioned under and 1.2.
- Preferably readily degradable alkaline is used.

Further Recommendations

- Soaking enzymes: no genetically won or modified substances
- Early fleshing in order to decrease organic load in waste water
- Re-use or continued use of generated waste

Greyling / splitting

Criteria

- All substances used meet the requirements mentioned under 1.2.

Further Recommendations

- greylings are sulphide-free or low-sulphide
- enzymatic greylings (no use of genetically won or modified substances)

Scaling and bating

Criteria

- All substances used meet the requirements mentioned under 1.2

Further recommendations

- scaling with carbon dioxide
- use of light organic acid

the use of ammonium salts should be minimized

Tanning and after-tanning

Criteria

- All substances used meet the requirements mentioned under 1.1 and 1.2.
- The following tanning methods are permitted:
 - non-mineral and vegetable tanning methods, provided the requirements for the final product are met.
 - Wet white pre-tanning with glutardialdehyde, but no other aldehyde tanning agents; the glutardialdehyde must not enter the tannery's ambient air.
 - traditional Sámi tanning. It is proven, that the protection of species is guaranteed during blubber (oil) production.
 - New Sámi tanning. Only glutardialdehyd can be used for pre-tanning. (no formaldehyde).
 - aluminum-, zirconium- and titanium tanning are permitted provided the requirements for the final product are met.
- Forbidden are:
 - chromium tanning
 - syntane and resin tanning agents with a high formaldehyde content (> 500ppm)

Further recommendations

- Among the plant-based tanning agents those made from fruit are preferred.
- Plant-based tanning agents have been grown in sustainably (e.g. reforestation programme)
- Their production does not threaten any endangered species or put at risk the ecological balance.

Colouring

Criteria

- all substances used meet the requirements mentioned under 1.1 and 1.2.
- colorants must meet the following conditions:
 - heavy metal free according to ETAD with the exception of Cu and Fe in metal-complex dyes.
 - allowed are colorants and pigments that contribute > 1% *permanent* AOX to primary effluent.
- with regard to aromatic amines, azo dyes must comply with the version of EC-Directive 67/548/ECC that is in effect. Colorants may not contain or otherwise release the following aromatic amines (according to the requirements for the final product):

anilin	CAS-Nr. 62-53-3
5-chlor-o-toluidin	CAS-Nr. 95-79-4
p-phenylendiamin	CAS-Nr. 106-50-3
n.n-dimethylanilin	CAS-Nr. 121-69-7
2,4-Xylidin	CAS-Nr. 95-68-1

Greasing

Criteria

- All substances used meet the requirements mentioned under 1.2.
- halogenated organic solvents are prohibited
- short-chained chloroparaffines (C10–C13) are prohibited

Further recommendations

- Regarding greasing agents it should be aimed for high exhaustion rates.
- The use of greasing agents from renewable resources should be aimed, bearing in mind the protection of species.

Finishing

Criteria

- Finishing methods improve the visual appearance and use-properties of leather and support its breathability.
- Desired are mechanical methods like ie. Milling, Staking, Buffing etc.
 - Permitted are waxing and pigment waxing. All substances used meet the requirements mentioned in 1.1 and 1.2.

- Pigments meet the requirements for colouring (see above)
- Explicitly prohibited are:
 - Finishes using Nitro-cellulose
 - Finishes based on Casein
 - Coating
- Allowed is a light finishing on the basis of polyurethane (PU) and acrylates.

Further recommendations

- Preference should be given to water-based finishes
- Total refrain from solvent-containing finishes

2.2.5. Environmental management and waste water treatment

Operators must have a written environmental policy. Depending on the processing stages performed, the policy should include:

- person responsible;
- procedures to minimize waste and discharges;
- the monitoring of waste and discharges;
- procedures to follow in case of waste and pollution incidents;
- documentation of staff training in the conservation of water and energy, the proper and minimal use of chemicals and their correct disposal;
- programme for improvement.

Wet processing units must keep full records of the use of chemicals, energy, water consumption and waste water treatment, including the disposal of sludge.

Wastewater from all units discharging directly or indirectly must be treated in an internal or external functional wastewater treatment plant before discharged to surface waters. In particular they must continuously measure and monitor waste water temperature, waste water pH and sediment quantities.

Wastewater analyses must be performed and documented periodically at normal operating capacity.

2.2.6. Storage, packaging and transport

- Storage: The contamination of storage areas and storerooms by biocides must be avoided. Products must be stored and transported in such a manner as to prevent contamination by prohibited *substances* and commingling with conventional products or substitution of the contents.
- Conservation: the use of biocides is only allowed according to EU-Regulation 2092 /91.
- Transport Containers may not be contaminated by biocides
- Packaging material must not contain PVC.

2.2.7. Record keeping & internal quality assurance

All operational procedures and practices must be supported by effective documented control systems and records that enable to trace:

- The origin, nature and quantities of organic products which have been delivered to the unit
- The nature, quantities and consignees of *IVN NATURLEDER Goods* which have left the unit;
- Any other information such as origin, nature and quantities of raw materials, *accessories* and chemical *inputs* delivered to the unit and the composition of manufactured products that may be required for the purposes of proper inspection of the operation.

2.2.8. Technical requirements (minimum values)

	leather for apparel	upper leather for shoes	shoe lining leather	
light fastness	2-3 (information on any non-compliance(s) must be indicated on the product)	2-3 information on any non-compliance(s) must be indicated on the product		DIN EN ISO 105x802
rubbing fastness (number of turns)	dry: 2-3 (20) wet: 2-3 (10) (information on any non-compliance(s) must be indicated on the product)	dry: 2-3 (50) wet: 2-3 (10) shoes without lining: dry: 4 (50) wet: 3 (20) perspiration: 3 (20) (information on any non-compliance(s) must be indicated on the product)	dry: 4 (50) wet: 3 (20) (information on any non-compliance(s) must be indicated on the product)	DIN EN ISO 11640 / DIN EN 17700 method A
perspiration fastness	2-3	2-3	3	DIN EN ISO 11641 /DIN EN 17700 method C.2 + C.3
tensile strength	12 N/mm ²	15 N/mm ²		DIN EN ISO 3376
tear propagation strength	15 N/mm	25 N/mm		DIN EN ISO 3377-1
bending fatigue strength	50 000 cycles dry 20 000 cycles wet	20 000 cycles dry 8 000 cycles wet		DIN 53351
vapour absorption			minimum 5 mg/cm ²	DIN EN 344-1 at 20°C
vapour permeability		minimum 5 mg/cm ² /h	minimum 10 mg/cm ² /h	DIN EN ISO 20344
odour	the odour of the goods should be product characteristic			

2.2.9. Limit values for residues in NATURLEDER Goods (maximum values)

	CAS-Nr.	Parameter	Testing method
Formaldehyde	50-00-0	↓ 50 mg/kg	DIN EN ISO 17226-1:2008
Glyoxal	107-22-2		
and other short-chain aldehydes (Ethanale to Hexanal), each	75-07-0, 123-38-6, 123-72-8, 110-62-3, 66-25-1		
Glutardialdehyde	111-30-8	↓ 100 mg/kg	DIN EN ISO 17226-1:2008
pH-value			
In general		3,5-7	DIN EN ISO 4045 2008, Extraction using water
Sámi leather		3,5-8	
Leachable substances upper/ lining leather insoles /Laufsohlen		1,5% 15/5%	DIN EN ISO 4098:2006

	CAS-Nr.	Parameter	Testing method
Preservative agents			Isothiazolinones: extraction, determination via HPLC-DAD, i.A. pr EN ISO 13365/IUC 29:2009 other preservative agents: Extraction using Methanol / Acetone, Derivatisation using Pentafluorobenzoylchloride, Determination via GC-ECD or GC-MS
Permitted preservatives:			
n-Octylisothiazolinone (OIT)	26530-20-1	Overall limit value: 100 mg/kg	
Methylisothiazolinone (MIT)	2682-20-4		
2-Thiocyanomethylthiobenzothiazol (TCMTB or also Busan)	21564-17-0		
ortho-Phenylphenol (oPP)	90-43-7		
p-Chlor-m-Kresol (CMK)	59-50-7		
Prohibited preservatives:			Isothiazolinones: extraction, determination via HPLC-DAD, i.A. pr EN ISO 13365/IUC 29:2009 other preservative agents: Extraction using Methanol / Acetone, Derivatisation using Pentafluorobenzoylchloride, Determination via GC-ECD or GC-MS
Group I - Phenole/ cresoles			
Phenole	108-95-2	Overall limit value: 25 mg/kg	
2-Methylphenole (o-cresole)	95-48-7		
4-Methylphenole (p-cresole)	106-44-5		
group II			
4-Chlorphenole,	106-48-9	Overall limit value: 5 mg/kg	
2,4-Dichlorphenole	120-83-2		
2,6-Dimethylphenole	576-26-1		
p-Phenylphenole	92-69-3		
2,3,4,5-Tetrachlorphenole	4901-51-3		
2,3,4,6-Tetrachlorphenole	58-90-2		
2,3,5,6-Tetrachlorphenole	935-95-5		
Tribromphenole	118-79-6		
Triclosan	3380-34-5		
2,4,5-Trichlorphenole	95-95-4		
2,4,6-Trichlorphenole	88-06-2		
Pentachlorphenole	87-86-5	0,5 mg/kg	
Biocides α-, β-, δ-, ε-Chlorocyclohexan, Chlorothalonil, DDT, DDD, DDE, Dichlofluamid, Dieldrine, Endosulfane, Heptachlor, Heptachloroepoxid, Lindane, Malathione, Methoxychlor, Parathion(ethylene), PCB, Pentachloroanisol, Permethrin, Pyrethrum, Tolyfluandil	542-18-7, 1897-45-6, 50-29-3, 789-02-6, 53-19-0, 72-54-8, 3424-82-6, 72-55-9, 1085-98-9, 60-57-1, 115-29-7, 33213-65-9, 76-44-8, 1024-57-3, 58-89-9, 121-75-7, 72-43-5, 56-38-2, 1336-36-3, 1825-21-4, 52645-53-1, 8003-34-7, 731-27-1	Overall limit value: < 1 mg/kg	
AOX (halogenated organic compounds)		5 mg/kg *	Soxhlet-extraction using dest. water. Preparation according to DIN EN 1485.
Aromatic Amines according to currently valid EC regulation 67/548/EWG		n.d.	
Additionally according to MAK III 2; III 3			DIN EN ISO17234 §64 LFBG 82.02-3 (V): Hinweis auf-Aminoazobenzol über p-Phenylendiamin und Anilin; Nachweis Aminoazobenzol über DIN EN ISO 17294-2:2009;
2,4-Xylidine	95-68-1	n.d.	
N,N-Dimethylaniline	121-69-7		
5-Chlor-o-toluidine	95-79-4		
p-Phenylendiamine	106-50-3		
Additionally according to MAK III 4: Anilin	62-53-3	↓ 60 mg/kg	

	CAS-Nr.	Parameter	Testing method
Organo-tin compounds: Tributyltin (TBT), Dibutyltin (DBT), Monobutyltin(MBT), Tetrabutyltin, Tricyclohexyltin, Triphenyltin		n.d.	E ISO 19744: 2003-08 DIN EN ISO 17353:2005 Beilstein-method, if needed scanning electron microscopy
PVC (Polyvinylchloride)	9002-86-2	500,0 mg/kg	Ronen-mikroskopy
Heavy metals			Disintegration by micro-waves ; Quantative determination using ICP-MS following to DIN 38406-E29
Al (Aluminium)		500,0 mg/kg	
As (Arsenic)		1,0 mg/kg	
Cd (Cadmium)		0,2 mg/kg	
Co (Cobalt)		5,0 mg/kg	
Cr total (Chromium)		50,0 mg/kg	
Hg (mercury)		0,2 mg/kg	
Ni (Nickel)		5,0 mg/kg	
Pb (lead)		1,0 mg/kg	
Ti (Titanium)		500,0 mg/kg*(1)	
Zr (Zirconium)		500,0 mg/kg	
Sb (Antimony)		1,0 mg/kg	
Cr VI (Chromium VI)		3,0 mg/kg	DIN EN ISO 17075:2008
Phosphorous organic compounds Diphenylkresylphosphate (DPK), Triisobutylphosphate (TiBP), Tributylphosphate (TBP), Triphenylphosphate (TPP), Tricresylphosphate (TKP), Tris(2-ethylhexyl)phosphate (TEHP), Tris(2-butoxyethyl)phosphate (TBEP), Tris(2-chloroethyl)phosphate (TCEP), Tris(2-chloroisopropyl)phosphate (TCPP), Tris(1,3-dichloroisopropyl)phosphate(TDCPP)	26444-49-5, 126-71-6, 126-73-8, 115-86-6, 1330-78-5, 78-42-2, 78-51-3, 115-96-8, 13674-84-5, 13674-87-8	Overall limit value: 5 mg/kg	Extraction, determination using GC-MS
PACs (Polycyclic aromatic carbons) and PCN (Polychlorinated Naphthalene) including Naphtaline		Overall limit value: 5 mg/kg Davon höchstens: Anthracen: 0.1 mg/kg Benzo(a)pyren Benzo(a)anthrace Benzo(b)fluoranthen Benzo(k)fluoranthen Chrysen, Dibenzo(a,h)anthracen je 0,2 mg/kg	Soxhleth- xtraction using Toluene, increasing purification using mini-silicia-gel column, separation, identification and quantification using GC-MS
Alkylphenoles/Alkylphenoethoxilates, Nonylphenole/Nonylphenoethoxylate, Oktylophenole/Oktylphenoethoxylate		Overall limit value: 100 mg/kg davon höchstens 50 mg/kg Nonylphenol	Extraction, determination using GC-MS or LC-MS
Chlorparaffins (C₁₀-C₁₃)	624-49-7	100 mg/kg	Extraction, clean up, separation, identification and quantification using GC-ECD
Dimethylfumarat		0,1 mg/kg	Extraction, separation, identifica- tion and quantification using GC- MS
Phthalates (DEP, BBP, DEHP, DnPP, DiPP)		100 mg/kg	Extraction, separation, identifica- tion and quantification using GC-MS/GC-ECD i.A. (VDI 4301 Blatt 6:2010, DIN EN 15777: 2009
Odour		3-4	VDA 270, acc. SNV 195651

- Exemption: In case of use of permissible Chloro-cresoles as preservative agent, AOX may be detected in the corresponding relation.
- n.d. = not detectable
- wenn bei einer Überschreitung des Grenzwertes eindeutig nachgewiesen wird, dass das Titan aus der Färbung stammt, gilt der Grenwert als eingehalten.

2.3. Minimum social criteria

2.3.1. Employment is freely chosen

There is no forced or bonded labour.

Workers are not required to lodge "deposits" or their identity papers with their employer and are free to leave their employer after reasonable notice.

2.3.2. Freedom of association and the right to collective bargaining are respected

Workers, without distinction, have the right to join or form trade unions of their own choosing and to bargain collectively.

The employer adopts an open attitude towards the activities of trade unions and their organisational activities.

Workers representatives are not discriminated against and have access to carry out their representative functions in the workplace.

Where the right to freedom of association and collective bargaining is restricted under law, the employer facilitates, and does not hinder, the development of parallel means for independent and free association and bargaining.

2.3.3. Working conditions are safe and hygienic

A safe and hygienic working environment must be provided, bearing in mind the prevailing knowledge of the industry and of any specific hazards. Adequate steps must be taken to prevent accidents and injury to health arising from, associated with, or occurring in the course of work, by minimising, so far as is reasonably practicable, the causes of hazards inherent in the working environment.

Workers must receive regular and recorded health and safety training, and such training must be repeated for new or reassigned workers.

Access to clean toilet facilities and to potable water, and, if appropriate, to rest areas, food consuming areas and sanitary facilities for food storage must be provided.

Accommodation, where provided, must be clean, safe, and meet the basic needs of the workers.

The company observing the code must assign responsibility for health and safety to a senior management representative.

2.3.4. Child labour must not be used

There must be no new recruitment of child labour.

Companies must develop or participate in and contribute to policies and programmes which provide for the transition of any child found to be performing child labour to enable her or him to attend and remain in quality education until no longer a child.

Children and young persons under 18 must not be employed at night or in hazardous conditions.

These policies and procedures including the interpretation of the terms "child" and "child labour" must conform to the provisions of the relevant ILO conventions C138 and C182.

2.3.5. Living wages

Wages and benefits paid for a standard working week meet, at a minimum, national legal standards or industry benchmark standards, whichever is higher. In any event wages should always be enough to meet basic needs and to provide some discretionary income.

All workers must be provided with written and understandable information about their employment conditions including wages before they enter employment and about the particulars of their wages for the pay period concerned each time that they are paid.

Deductions from wages as a disciplinary measure are not permitted nor must any deductions from wages unless provided for by national law without the express permission of the worker concerned. All disciplinary measures should be recorded.

2.3.6. Working hours are not excessive

Working hours must at least comply with national laws and benchmark industry standards, whichever affords greater protection.

In any event, workers must not be required to work in excess of 48 hours per week on a regular basis, and must be provided with at least one day off for every 7 day period on average. Overtime must be voluntary, must not exceed 12 hours per week, must not be demanded on a regular basis and must always be compensated at a premium rate.

2.3.7. No discrimination is practised

There is no discrimination in hiring, compensation, access to training, promotion, termination or retirement based on race, caste, national origin, religion, age, disability, gender, marital status, sexual orientation, union membership or political affiliation.

2.3.8. Regular employment is provided

To every extent possible work performed must be on the basis of recognised employment relationship established through national law and practice.

Obligations to employees under labour or social security laws and regulations arising from the regular employment relationship must not be avoided through the use of labour-only contracting, sub- contracting, or home-working arrangements, or through apprenticeship schemes where there is no real intent to impart skills or provide regular employment, nor must any such obligations be avoided through the excessive use of fixed-term contracts of employment.

2.3.9. Harsh or inhumane treatment is prohibited

Physical abuse or discipline, the threat of physical abuse, sexual or other harassment and verbal abuse or other forms of intimidation must be prohibited.

2.3.10. Social Compliance Management

Operators must have a policy for social accountability to ensure that the social criteria can be met. They must support the implementation and monitoring of the social criteria by:

nominating a person responsible for social accountability

monitoring compliance with the social criteria and implementing necessary improvements at its facilities

informing its workers about the content of the minimum social criteria

maintaining records of the name, age, working hours and the wages paid for each worker

maintaining and providing appropriate safety equipment and materials to its workers

allowing workers to nominate a representative for social accountability that is able to provide feedback to the management regarding implementation status of and compliance with social criteria

recording and investigating complaints from workers or third parties related to the adherence to the social criteria and maintaining records about any necessary corrective measures arising from them

refraining from disciplinary measures, dismissals or other forms of discrimination against workers for providing information concerning observance of the social criteria

3. Quality assurance system

3.1. Certification of production and processing stages

On basis of the standards of International Association of Natural Textile Industry, the varification programme NATURLEDER serves as a quality assurance for the production of sustainable leather products

Including an audit (on-site inspection) and also random residue testings of the processed goods along the production chain, it is the aim of the NATURLEDER varification system to guarantee an objective and competent survey of the resource processing on each production or trading stage.

The process and single steps of the inspections leading to a final scope certification are listed in the manual.

Licence holders of the final product are responsible for the sustainable integrity of his products throughout the production chain.

For certification bodies a general precondition to execute a certification according to this standard, certification is a valid ISO 65 accreditation of the applicant. This ISO 65 accreditation must include a leather certification or it must be applied for the approval for the leather segment at the accreditation body and granted after at least 18 months, in order to begin with the certification. Additionally, the certifiers must become approved by IVN.

3.2. Testing of Technical Quality Parameters and Residues

Certified Entities are expected to undertake testing in accordance with a risk assessment in order to assure compliance with this standard and in specific with the criteria of chapter 2.4.14 (Technical Quality Parameters) as well as 2.4.15 and 2.4.16 (Limit Values for Residues in IVN BEST Goods, additional materials and accessories). All IVN BEST Goods and the components of these products should be included in this risk assessment and therefore potentially subject to testing. The testing frequency and the number of samples should be established according to this risk assessment.

Samples for residue testing may also be taken by the inspector during the required on-site inspection, either as back-up to the inspection process or in case of suspicion of contamination or non-compliance. Additional samples of goods may be taken from the supply chain at any time without advance notice.

Laboratories that are accredited according to ISO/IEC 17025 and that have appropriate experience in textile residue testing are approved to perform residue testing under this standard.

Further instructions can be found in the IVN NATURLEDER manual for certification bodies.

4. Annex:

A) Definitions

Term	Definition for the purpose of this standard
Permanent AOX	AOX is <i>permanent</i> , if the molecular structure of the <i>input</i> contributes halogenated organic compounds to wastewater generated during fiber processing.
Heavy metal free	An <i>input</i> is considered as ' <i>heavy metal free</i> ' if it does not contain heavy metals as a functional constituent and any impurities contained do not exceed the following limit values as set by ETAD: Antimony: 50ppm, Arsenic: 50ppm, Barium: 100ppm, Cadmium: 20ppm, Cobalt: 500ppm, Copper: 250ppm, Chrome: 100ppm, Iron: 2500ppm, Lead: 100ppm, Manganese: 1000ppm, Nickel: 200ppm, Mercury: 4ppm, Selenium: 20ppm, Silver: 100ppm, Zinc: 1500ppm, Tin: 250ppm)
Bio-accumulative	A <i>substance</i> is considered as (potentially) bio-accumulative, if BCF (= bio-concentration factor) > 100 or if log Pow (= logarithm of the n-octanol-water partition coefficient) >3.

B) List of abbreviations

Organisations / Standards:

IVN	International Association Natural Textile Industry, Germany
ETAD	Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers
OECD	Organisation of Economic Cooperation and Development
TEGEWA	Association of producers of textile, paper, leather and fur auxiliaries and colorants

Other:

EC50	Effect concentration (50%)
IC50	Inhibition concentration (50% inhibition)
LC50	Lethal concentration (50% mortality)
a-MES	a-methyl ester sulphonate (C16/18)
AOX	Absorbable halogenated hydrocarbons and substances that can cause their formation.
APEO	Alkylphenoethoxylate
BBP	Benzylbutyl phthalate
BOD	Biological Oxygen Demand
COD	Chemical Oxygen Demand
DBP	Dibutyl phthalate
DBT	Dibutyltin
DEHP	Diethylhexyl phthalate
DTPA	Diethylenetriaminpentaacetat
EDTA	Ethylendiamintetraacetat
GMO	Genetically modified organisms
HMBT	2-Hydrazono-2,3-dihydro-3-methylbenzothiazole-hydrochloride
MAC	Maximum Allowable Concentration (of a substance at the working place)
MBT	Monobutyltin
NTA	Nitrioltriacetic acid

LAS	Linear alkyl benzene sulphonate
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated Biphenyls
PCP	Pentachlorophenol
PFOA	Perfluorooctanoic acid
PFOS	Perflurooctane sulfonate
PVC	Polyvinyl chloride
TBT	Tributyltin
TeCP	Tetrachlorophenol
TCP	Tetrachlorphenol
TOC	Total Organic Carbon
TPhT	Triphenyltin