

bluesign® criteria for production sites

Annex: Leather processing

Version 1.0 | April 01, 2014

Content

1	Scope	2
2	Definitions	2
3	Best available techniques	2
4	Industry specific requirements	2
4.1	General	2
4.2	Water emissions	2
4.2.1	Direct wastewater discharge	2
4.2.2	Indirect wastewater discharge	3
4.3	Air emissions	3
5	Verification of compliance	4
6	Validity	4
7	Other applicable documents	4

1 Scope

Comprehensive requirements for companies with production sites are determined in the *bluesign® criteria for production sites*. This document defines additional provisions for processing of leather.

2 Definitions

Leather manufacturing encompasses following processes: washing, unhairing, liming, deliming, bateing, pickling, tanning, retanning and finishing.

3 Best available techniques

A manufacturer of leather shall be aware of best available techniques that are relevant for leather production and tanning processes (see for example: <http://eippcb.jrc.ec.europa.eu/reference/>; tanning of hides and skins - BREF and BATC document).

4 Industry specific requirements

4.1 General

Following measures can help keep the contamination load during preservation of skins and hides as low as possible:

- Cold storage of hides and skins
- Strict control of pH in chromium containing liquors and effluent
- Use of denatured salt
- Stoichiometric dosage of chromium salts for tanning purposes
- Retention of brine from skin curing by suitable methods such as dry disposal or reuse
- Selection and usage of the appropriate cleaning and disinfection products

4.2 Water emissions

In order to reduce water emissions, the BAT shall be installed that applies a waste water treatment consisting of an appropriate on-site and/or off-site combination of the following techniques:

- Mechanical treatment
- Physico-chemical treatment
- Biological treatment
- Biological nitrogen elimination

4.2.1 Direct wastewater discharge

The limit values and sampling requirements for the direct wastewater discharge are compiled in Table 1.

In order to control the efficiency of the wastewater treatment plant, it is strongly recommended that the following parameters are measured not only in the treated (clean) stream but also in the untreated (raw) wastewater:

- Wastewater volume
- pH
- Conductivity
- Temperature
- COD
- BOD₅

Parameter	Method	Qualified Random Sample or 2-hour Composite Sample		
		Unit	Limit Value	Interval
pH	DIN 38404-C5		6-9	continuous
Temperature	DIN 38404-C4	°C	<35	continuous
TSS	DIN EN 872	mg/l	<35	week or month
COD	DIN 38409-41 or DIN ISO 15705	mg/l	250*	week or month
BOD ₅	DIN EN 1899-1	mg/l	25**	week or month
NH ₄ -N	DIN 38406-5	mg/l	10	week or month
Phosphor Total	DIN EN ISO 11885	mg/l	2	6 months
AOX	DIN EN ISO 9562	mg/l	0.5	on regular basis
Fish egg toxicity	DIN EN ISO 15088	LID	2	6 months
Chromium Total	DIN EN ISO 11885-E22	mg/l	1	week or month
Chromium (VI)	DIN 38405-D24	mg/l	0.1	week or month
Sulfide	DIN 38405-26	mg/l	1	week or month

Table 1: Limit values for direct discharge to the aquatic body. The measuring point is after the wastewater treatment, before discharge to the aquatic body.

* If COD monthly average exceeds 2500 mg/l then a reduction by at least 90 % in a qualified random sample or 2-hour composite sample is required.

** If BOD₅ monthly average exceeds 1000 mg/l then a reduction by at least 97.5 % in a qualified random sample or 2-hour composite sample is required.

National or local requirements that are stronger or more detailed than the bluesign® criteria will supersede the limit values specified above.

The measurements shall be performed in regular intervals according to the above mentioned (Table 1) or similar standard methods. A sampling interval depends on the dimensions and the complexity of the plant as well as on the findings. Third party measurements must be at hand.

Mixed samples (two-hour) are preferred.

4.2.2 Indirect wastewater discharge

The limit values for the indirect wastewater discharge are compiled in Table 2.

The removal efficiency is higher when chromium- and sulfide-bearing streams are separated.

Parameter	24-hour representative composite sample*		
	Unit	Limit Value	Interval
Chromium Total	mg/l	1	week or month
Sulfide	mg/l	1	week or month

Table 2: Limit values for indirect discharge of waste water from the production site into public waste water treatment plant.

*Monthly average values based on the average of the 24-hour representative composite samples taken over a month.

4.3 Air emissions

Several sources of air emissions may exist in the leather tanning and finishing process. Thus, if relevant, the following parameters shall be monitored:

- Ammonia (NH₃)
- Hydrogen sulfide (H₂S)
- Dust
- TOC off-gas

Depending on the solvent consumption levels in tones per year, the following total VOC emission limit values (fugitive and sum of stack) expressed in grams of solvent emitted per m² of finished leather shall apply:

- 85 g/m² for more than 10 t/year solvent consumption
- 150 g/m² for more than 10 t/year solvent consumption in case of leather coating activities in furnishing and particularly leather goods used as small consumer goods like bags, belts, wallets, etc.

In any case, a VOC-relevant production site, i.e. where more than 5 tons of solvents per year are being used, must meet the relevant air emission limits (compare *bluesign® criteria for production sites*).

If relevant, in order to reduce the emission of odors from process step and effluent treatment, ammonia and hydrogen sulfide shall be abated by the scrubbing and/or biofiltration of extracted air in which odor of these gases are noticeable.

If relevant, in order to reduce the airborne emissions of halogenated organic compounds, halogenated volatile organic compounds used in the process shall be replaced with the substances that are not halogenated.

Moreover, it is strongly recommended that the following actions are considered:

- Implementation of water-based coatings instead of organic solvents to reduce VOC emissions
- Installation of dust collectors and scrubbers to control particulate emissions

5 Verification of compliance

bluesign technologies verifies the compliance with the criteria at hand by means of a screening including an on-site inspection. Re-screenings have to be carried out no later than every three years.

6 Validity

This document comes into effect from April 01, 2014.

This document is subject to changes. Changes will come into effect after prior notice and defined transition time.

7 Other applicable documents

- bluesign® system (effective version)
- bluesign® criteria for production sites (effective version)
- bluesign® system substances list (effective version)