bluesign® CRITERIA for production sites

ANNEX: Chemical Supplier

Version 3.0 | 2020-03

Contents

1 Scope

Comprehensive requirements for companies with production sites are determined in the *bluesign® CRITERIA for production sites*. This document defines additional provisions for chemical suppliers.

2 Definitions

2.1 Chemical supplier

A company that under its own trade name markets chemical products, such as auxiliaries, dyestuffs or other chemical products, for the production of textiles, leather and/or accessories. A chemical supplier may be a manufacturer, a formulator or a rebrander of chemical products. A producer of chemical products that directly uses the produced chemicals for downstream processing of articles is also considered to be a chemical supplier.

2.2 Rebranding/Rebrander

A company that (amongst other activities) purchases finished chemical products from a chemical supplier and distributes them under its own brand name. and on own responsibility..

2.3 Toll manufacturing

Producing chemical products on behalf of a chemical supplier. Specifications regarding purchase of raw materials and/or formulation recipes are set by the chemical supplier.

For a comprehensive list of terms and abbreviations, please refer to the document *bluesign® glossary*.

3 Industry specific requirements

3.1 General

The following general requirements shall be considered:

- Follow input stream management
- Use water saving technologies
- Re-use water and install closed water circuits
- Use indirect cooling instead of injection cooling
- Prefer processes for off-gas cleaning and vacuum generation that generate no wastewater
- Retain mother liquors and recycle mother liquors in an optimized way
- Avoid air emission of harmful substances wherever possible; install efficient air emission treatment systems, if relevant
- Re-use solvents
- Treat highly concentrated wastewater streams separately

3.2 Green and circular chemistry

Green chemistry stands for sustainable chemistry and supports cleaner products and processes. The United States Environmental Protection Agency (U.S. EPA) defined *The twelve principles of Green Chemistry*, which can be used to incorporate inherently less hazardous chemicals into the manufacturing process, to increase energy efficiency and to avoid waste. They illustrate the appropriate basis for the design of chemical products and processes for system partners..

In addition, system partner are encouraged to research and develop chemistry that can circulate in biological or technical cycles.

3.3 Best Available Techniques

A chemical supplier shall be aware of Best Available Techniques (BAT) that are relevant for the industry (see for example: http://eippcb.jrc.ec.europa.eu/reference/; e.g. production of specialty inorganic chemicals, production of polymers, manufacture of organic fine chemicals, etc.).

3.4 Product Stewardship

Product Stewardship means taking responsibility for the manufactured products with the aim of minimizing any negative impact they may exert on the health and safety of workers or consumers or on the environment.

An overview of all areas related to Product Stewardship is shown in

Figure 3.1.

Figure 3.1: Product Stewardship tasks in the chemical industry

Effective Product Stewardship is only achieved by means of an accurate understanding of the chemistry of the products and their hazard potentials, followed by communicating

- relevant information internally and considering when establishing different procedures at the production site (e.g. storage concept, production processes, work instructions, emergency procedures);
- relevant information to customers and suppliers / upstream and downstream all information necessary for responsible handling of the product.

These tasks require effective collaboration among different departments of a chemical company and external stakeholders along the product life cycle, as shown in Figure 3.2.

Figure 3.2: Product Stewardship network

To keep track of all procedures (and changes in them), and to ensure management commitment, the system partner should have a management system which includes Product Stewardship procedures. The management system should follow the principles of ISO 9001 and 14001 as well as ISO 45001.

In addition, system partners should consider joining the *Responsible Care* initiative through their national chemical associations. *Responsible Care* is the chemical industry's global voluntary initiative, under which companies commit to continually improve their health, safety and environmental performance, and communicate with stakeholders about their products and processes.

For more details see the *bluesign® GUIDELINE – Product Stewardship for chemical supplier*s.

3.4.1 Input stream management

One of the main challenges/complexities of the textile supply chain is that each raw material (substance or mixture) has its generic profile of impurities and related ranges of variation. Only intelligent input stream management concerning chemical raw materials and intermediates that considers the upstream components can help avoid impurities and byproducts in purchased raw materials from the beginning.

The aim of input stream management at the chemical supplier is to

- carefully select raw material suppliers;
- have sufficient knowledge about raw materials and to be able to provide adequate information on composition, byproducts, impurities and restricted substances with relevance to humans and the environment;
- establish specifications for raw materials for the sake of the desired quality and lowest contamination with impurities;
- be able track a contamination back from a finished product batch sold to a customer to the corresponding raw material batches
  - Good traceability is also important for a chemical company as a protection against customer claims, since contamination of the final textile may originate from various sources;
- install appropriate lab capacities
  - Lab management shall follow the ISO 17025 principle. If testing is sub-contracted, ISO 17025 certified laboratories shall be assigned;
- have a systematic and documented monitoring program for restricted substances in place.

Suppliers of raw materials shall be able to provide suitable information on impurities that clarifies whether the BLUESIGN requirements concerning restricted and banned substances can be met. If data gaps exist (e.g. by obtaining information from suppliers, conclusions of analogy, etc.), suitable tests for critical parameters shall be carried out on raw materials.

3.4.2 Hazard assessment and communication

For the safe use of chemicals and for avoiding negative environmental impact, it is necessary that hazards associated with each product are communicated properly, both internally (to possibly affected workers) and externally (to customers). System partners shall provide exemplary hazard and safety information to their customers.

3.4.2.1 Globally Harmonized System for the Evaluation and Communication of Chemical Hazards (GHS)

To facilitate hazard communication on the global chemical market, the United Nations developed the *"Globally Harmonized System for the Evaluation and Communication of Chemical Hazards" (GHS)*. GHS defines criteria for how chemicals should be classified based on their hazards, and for how the hazards should be communicated. The hazards relevant to a substance or mixture are determined through classification. Based on the classification, necessary label elements are defined and displayed on the package label. Both classification and label elements are entered in the SDS (Figure 3.3).

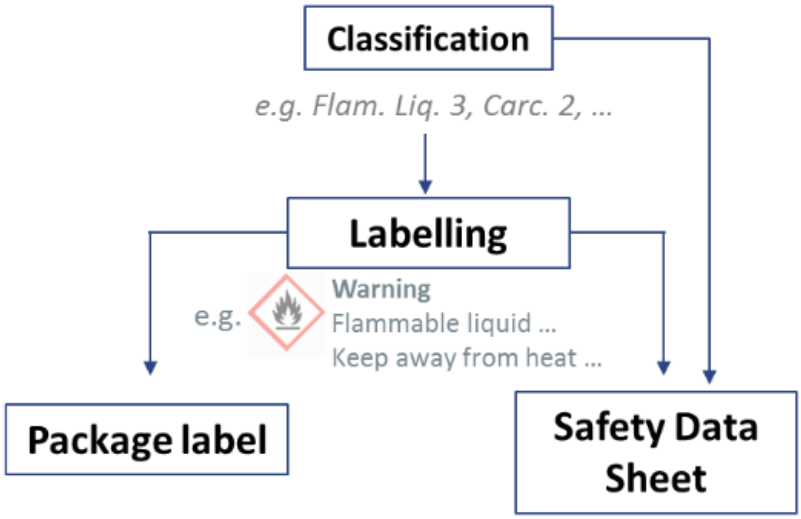

Figure 3.3: Hazard communication according to GHS

3.4.2.2 Safety Data Sheet (SDS) and labeling

The bluesign® SYSTEM requires that system partners have a functioning procedure for GHS classification and for the preparation, updating and delivery of SDS.

The bluesign® SYSTEM PARTNER shall

- be able to provide correct GHS classifications, and SDS complying with the relevant GHS rules for all their finished products;
- deliver SDS to all customers at product delivery at the latest (preferably in advance) and in case of significant changes;
- label all finished products according to GHS
  - ☐ All finished products shall have a clearly visible hazard label, according to GHS criteria and national regulations. The label elements (signal word, pictogram, H-statements and P-statements) should be identical to the ones given in the SDS;
- ensure that SDS are kept up to date, considering changes in product composition, new substance classifications and regulatory changes;
- ensure that the person in charge of SDS authoring has in depth knowledge about the GHS and relevant local regulations.

Further – and especially for tasks not being completed by Product Stewardship employees – procedures shall be defined that ensure:

- The person(s) responsible for GHS classification and SDS are informed about changes in the product and new test results

- All customers who purchased a product within the last 12 months have an up-to-date SDS. This means that customers shall receive the SDS with the product delivery at the latest, and an update shall be sent if there are significant changes
- Packaging is correctly labelled according to GHS

3.4.3 Data for chemical assessment with the bluesign® TOOL

In addition to SDS, GHS classifications and TDS (Technical Data Sheet), a comprehensive data set is required for the chemical assessment with the bluesign® TOOL. This includes e.g. the full chemical composition, environmental data (biodegradability, COD, etc.), toxicological data, and the content of restricted substances.

For details, see bluesign® CRITERIA for chemical assessment.

3.4.4 Compliance management of finished products

A system to verify that finished products comply with relevant restricted substances limits shall be installed. It shall include:

- Specifications for relevant restricted substances in the finished product
- A procedure for compliance monitoring, including regular analytical testing (especially for products manufactured by synthesis)
- Evaluation of the risk of cross contamination and suitable verification procedures

Analytical data is reported via the bluesign® TOOL

For dyestuffs, the requirements and limits prescribed in the ETAD Code of Ethics Annex A, https://etad.com/en/about-etad/code-of-ethics.html, shall be fulfilled.

3.5 Occupational Health & Safety

Considering the hazards of (reactive) chemicals and processes involved in the production of chemical products, management of Occupational Health and Safety shall have a high priority. A certified OH&S management system according to ISO 45001 or equivalent is strongly recommended.

3.6 Water emissions

To keep water emissions at the lowest possible level, the following shall be ensured:

- Residual chemicals shall be not discharged to wastewater but disposed as (hazardous) waste in a controlled manner
- Water from wastewater treatment plants at chemical production sites shall not be used for irrigation

The following limit values for direct discharge to the aquatic body shall be met. To control efficiency of the wastewater treatment plant, it is recommended that the relevant parameters are measured not only in the treated (clean) stream but also in the untreated (raw) wastewater.

Parameter	Method	Unit	Limit Value	Measuring/ Sampling interval
COD	DIN 38409-41 ISO 6060, USEPA 410.4 APHA 5220D, GB/T 11914 validated cuvette methods (e.g. according to ISO 15705) can be used alternatively		Efficiency of wastewater treatment: > 90 %	daily
Total-N (Nitrogen total)	DIN EN 12260	mg/L	50	weekly
Total-P (Phosphorus total)	ISO 11885, ISO 6878 USEPA 365.4, APHA 4500 P-J GB/T 11893	mg/L	2	6 months
Fish egg toxicity	DIN EN ISO 15088	LID (Lowest Ineffective Dilution)	2	6 months

Parameter	Method	Unit	Limit Value	Measuring/ Sampling interval
Mercury	ISO 12846 / ISO 17852 EN ISO 18412 , ISO 17852 USEPA 200.7, USEPA 200.8. USEPA 6010c. USEPA 6020a	mg/L	0.05	6 months
Cadmium	ISO 11885 USEPA 200.7, USEPA 200.8 USEPA 6010c, USEPA 6020a GB 7475, HJ 700	mg/L	0.2	6 months
Copper	ISO 11885 USEPA 200.7, USEPA 200.8 USEPA 6010c, USEPA 6020a GB 7475, HJ 700	mg/L	0.5	6 months
Nickel	ISO 11885 USEPA 200.7, USEPA 200.8 USEPA 6010c, USEPA 6020a GB 11907, HJ 700	mg/L	0.5	6 months
Lead	ISO 11885 USEPA 200.7, USEPA 200.8 USEPA 6010c, USEPA 6020a GB 7475, HJ 700	mg/L	0.5	6 months
Chromium Total	ISO 11885 USEPA 200.7, USEPA 200.8 USEPA 6010c, USEPA 6020a GB 7475, HJ 700	mg/L	0.5	6 months
Chromium (VI)	DIN 38405-D24 ISO 18412 USEPA 218.6 GB 7467	mg/L	0.1	6 months
Zinc	ISO 11885 USEPA 200.7, USEPA 200.8 USEPA 6010c, USEPA 6020a	mg/L	2	6 months
Tin	ISO 11885	mg/L	2	6 months

Table 3.1: Limit values for direct discharge to the aquatic body. The measuring point is after wastewater treatment, before discharge to the aquatic body.

National or local requirements that are stronger or more detailed than the bluesign® CRITERIA will supersede the limit values specified in Table 3.1.

In addition, the following shall be considered for sampling and testing:

- Sampling shall be conducted according to *ISO 5667-13:2011 (Parts 1, 3, 10, 13 and 15)*, *"Water Quality Sampling Guidance for the preservation and handling of water samples,"* either by qualified lab personnel or by the external lab which conducts the related analysis under representative conditions (i.e. not after production breaks, heavy rainfall, etc.)
- The system partner shall define a sampling/measuring plan to ensure analyses are conducted at regular intervals
- Sampling intervals as listed in Table 3.1 shall be observed; sampling intervals depend on the dimensions and complexity of the plant as well as on the findings. The sampling plan shall include regular third-party measurements by an accredited laboratory
- A full measuring campaign shall be conducted at least two times per year with one of the following sampling methods:
  - ☐ Composite sampling (preferred): composite sampling should be performed for no less than six hours, with no more than one hour between discrete samples. Each discrete sample shall be of equal volume. Sampling using calibrated autosamplers is preferred.
  - ☐ Qualified spot sampling should be performed over two hours with samples taken at regular intervals of fifteen minutes using an automatic composite sampler;
    or
  - ☐ a minimum of five samples should be taken during a maximum of two hours, with at least two minutes between discrete samples.
- Compliance is present if four out of the five last measurements meet the above listed limits.

3.6.1 Indirect wastewater discharge

See *bluesign® CRITERIA for production sites*.

3.7 Air emissions

For solvents that are used and stored at the production site, VOC relevance shall be checked (see *bluesign® CRITERIA for production sites / Annex: VOC management).*

3.8 Sludge

Sludge from wastewater treatment shall be disposed of via certified and officially accredited disposal companies. Disposal to landfill shall be avoided, and options for recycling shall be evaluated.

4 Verification of compliance

BLUESIGN verifies compliance with the bluesign® CRITERIA by means of a bluesign® COMPANY ASSESSMENT including an on-site inspection.

Re-assessments shall be carried out no later than every three years.

4.1 Company with multiple production sites

The goal is to physically assess all production sites of the system partner. It is at the discretion of BLUESIGN to define a specific assessment approach and site selection, considering relevancy regarding impact on people and/or the environment.

The department(s) responsible for Product Stewardship for the chemical products intended for certification will be assessed physically in any case. A system partner has to ensure by means of an appropriate corporate policy that all site(s) follow the three guiding principles for production sites (see *bluesign® CRITERIA for production sites*), and that delivered products comply with the relevant bluesign® CRITERIA, by maintaining a suitable Product Stewardship program and company policies.

4.2 Toll manufacturing

By means of an appropriate corporate policy and Product Stewardship, a bluesign® SYSTEM PARTNER shall ensure that toll manufacturing site(s) follow the guiding principles for production sites (see *bluesign® CRITERIA for production sites*), and that delivered products comply with the relevant bluesign® CRITERIA, by maintaining a suitable Product Stewardship program and company policies.

It is at the discretion of BLUESIGN to inspect the site(s) or even to request a system partnership of the toll manufacturing companies, especially if processes and/or chemicals used at the toll manufacturing site(s) are of high risk regarding impact on people and/or the environment.

5 Validity

This document comes into effect from 2020-03. It replaces the *bluesign® CRITERIA for production sites - ANNEX: Chemical Supplier* version 2.0.
For all companies that signed an agreement for an assessment or for a bluesign® SYSTEM PARTNERSHIP before 2020-03, the adapted and newly introduced requirements are binding after a transition period of one year from the date of release.
This document is subject to revisions. Details on the revision procedure for regular and unscheduled revisions are compiled in the *bluesign® SYSTEM* document.

6 Other applicable documents

The following documents complement the document at hand:

- *bluesign® SYSTEM*
- *bluesign® glossary*
- *bluesign® CRITERIA for production sites*
- *bluesign® CRITERIA for production sites – Annex: Rating of production sites*
- *bluesign® CRITERIA for production sites – ANNEX: Exclusion criteria*
- *bluesign® CRITERIA for production sites – ANNEX: VOC management*
- *bluesign® CRITERIA for chemical assessment*
- *bluesign® SYSTEM BLACK LIMITS (BSBL) - Threshold limits for chemical substances in chemical products*
- *bluesign® SYSTEM SUBSTANCES LIST (BSSL) - Consumer safety limits*
- *bluesign® GUIDELINE – Product Stewardship for chemical supplier*

Current versions are available for download at www.bluesign.com/criteria.