

Guidance sheet

Input stream management of non-chemical raw materials/intermediates at manufacturers

1 Scope

This guidance sheet summarizes the requirements for input stream management at manufacturers regarding non-chemical raw materials and intermediates.

Chemical suppliers are not in the scope of this guidance sheet.

In cases where the manufacturer is not responsible for the choice of appropriate raw materials/intermediates (e.g. commission finisher) the responsibility for input stream management of raw materials/intermediates will be transferred to the respective party.

Measures are valid for bluesign® APPROVED materials and in some cases for the whole production site.

Special aspects for recycled materials are compiled in Chapter 3.

2 Measures

The following table presents the measures and consequences for system partners when handling non-chemical raw materials or intermediates.

Note 1:

If testing is required, it is a responsibility of the manufacturer to organize random testing or to request meaningful and complete test results from the supplier.

Note 2:

Special aspects of recycled materials are compiled in Chapter 3.

Note 3:

Grey marked measures:

valid for all materials used at the production site.

Blue marked measures:

valid for all bluesign® APPROVED materials.

Orange marked measures (valid for all bluesign® APPROVED materials):

on discretion of bluesign technologies materials can be tolerated if bluesign® APPROVED materials are not available; PSF/SDS check by bluesign technologies is necessary.

Substrate	Impurities	Measure/Consequence
All substrates (PES, CO, PA etc.) and all textiles (fibers, yarns, fabrics, non-woven, etc.)	APEO (OP, NP, OPEO, NPEO)	<ul style="list-style-type: none"> ■ Use APEO free textiles (APEO might be contained in spinning oils, sizing agents etc.) ■ Adapt purchasing specifications (supplier shall confirm that textiles (yarns, fibers etc.) are APEO free ■ Random testing of main Non-EU raw material qualities necessary. ■ Regard BSSL restrictions
Raw textile intermediates (esp. fibers, yarns) that are not further treated in wet processes (scouring, dyeing etc.)	Several	<p>If processed in bluesign® APPROVED material:</p> <ul style="list-style-type: none"> ■ On discretion of bluesign technologies intermediates can be tolerated if bluesign® APPROVED materials are not available; PSF/SDS check by bluesign technologies necessary
All textiles which had been already processed in an aqueous or solvent based	Several	<ul style="list-style-type: none"> ■ Textile intermediates ending up in bluesign® APPROVED materials have to be bluesign® APPROVED

Substrate	Impurities	Measure/Consequence
process (pre-treated, dyed, printed, finished, coated, laminated or bonded textile)		
Dope dyed textiles (Dye/pigment is added as master batch during primary spinning)	Banned dyes and pigments; impurities from pigments and dyes	<p>If processed in bluesign® APPROVED material:</p> <ul style="list-style-type: none"> On discretion of bluesign technologies dope dyed fibers/yarns can be tolerated if bluesign® APPROVED materials are not available; PSF/SDS check by bluesign technologies necessary
Materials (fibers, yarns, membranes etc.) with biocidal or flame retardant or nano-properties		<ul style="list-style-type: none"> Only bluesign® APPROVED intermediates can be used for manufacturing bluesign® APPROVED materials
Materials with other added functionalities		<p>If processed in bluesign® APPROVED material:</p> <ul style="list-style-type: none"> On discretion of bluesign technologies materials can be tolerated if bluesign® APPROVED materials are not available; PSF/SDS check by bluesign technologies necessary
Polyester (PES, PET)	Catalysts (antimony)	<ul style="list-style-type: none"> Obtain information on antimony content in PES fiber by purchase specification (if not reported in SDS) Try to use PES with low antimony content Random testing of raw materials with unknown antimony content and finished products recommended
Recycled polyester (RPET)	See Chapter 3	
Polyamide 6	Residual monomers (ε-caprolactam)	<ul style="list-style-type: none"> Obtain SDS with declaration of caprolactam content Check air emission situation especially when raw fixation is carried out
Polyamide 6.6	-	-
Polyacrylonitrile	Residual fiber solvents (N,N-DMAC, N,N-DMF)	<ul style="list-style-type: none"> Obtain SDS with declaration of solvent content Try to use PAN with low solvent content Check air emission situation especially when raw fixation is carried out Regard BSSL restrictions at least for bluesign® APPROVED materials Random testing of finished product recommended
Modacrylic	Residual fiber solvents (N,N-DMAC, N,N-DMF)	<ul style="list-style-type: none"> Obtain SDS with declaration of solvent content and co-monomers Try to use modacrylic with low solvent content Check air emission situation especially when raw fixation is carried out Regard BSSL restrictions at least for bluesign® APPROVED materials Random testing of finished product recommended

Substrate	Impurities	Measure/Consequence
	Co-Monomer (e.g. Vinyl – or Vinylidenchloride)	<p>Additionally, if processed in bluesign® APPROVED materials:</p> <ul style="list-style-type: none"> ■ On discretion of bluesign technologies modacrylic can be tolerated if bluesign® APPROVED materials are not available; PSF/SDS check by bluesign technologies necessary
	Antimony containing modacrylic fibers	<ul style="list-style-type: none"> ■ Modacrylic raw fiber must be bluesign® APPROVED
m-Aramid	Residual fiber solvents (N-Methylpyrrolidone, N,N-Dimethylacetamide))	<ul style="list-style-type: none"> ■ Obtain SDS with declaration of solvent content ■ Try to use a fiber with low solvent content ■ Check air emission situation especially when raw fixation is carried out ■ Regard BSSL restrictions at least for bluesign® APPROVED materials ■ Random testing of finished product necessary
Cotton	Pesticides	<ul style="list-style-type: none"> ■ Obtain a certificate of approval for pesticide contents ■ Regard BSSL restrictions at least for bluesign® APPROVED materials ■ Random testing of main raw material types recommended
MMCF (man-made cellulosic fibers; viscose, lyocell, acetate, etc.)		<ul style="list-style-type: none"> ■ Try to achieve supply chain transparency for pulp and wood ■ Pulp and wood should be from sustainable sources (preferably certified)
Viscose (incl. Modal)	CS ₂	<ul style="list-style-type: none"> ■ Ask for SDS with declaration of solvent content. ■ Try to use a fiber with low solvent content. ■ Pay attention to BSSL restriction at least for bluesign® APPROVED materials. ■ Random testing of main raw material types recommended.
Rubber	Vulcanization accelerators (e.g. Mercaptobenzothiazole), sensitizing proteins in natural rubber	<p>If processed in bluesign® APPROVED materials:</p> <ul style="list-style-type: none"> ■ On discretion of bluesign technologies materials can be tolerated if bluesign® APPROVED materials are not available; PSF/SDS check by bluesign technologies necessary ■ Regard BSSL restrictions at least for bluesign® APPROVED materials ■ Random testing of finished product necessary
Solvent based PU fibers (e.g. Elastane)	Residual fiber solvents (N,N-DMAC)	<ul style="list-style-type: none"> ■ Obtain SDS with declaration of solvent content ■ Try to use solvent free fiber types or fibers with low solvent content ■ Check air emission situation especially when raw fixation is carried out

Substrate	Impurities	Measure/Consequence
		<ul style="list-style-type: none"> ■ Regard BSSL restrictions at least for bluesign® APPROVED materials ■ Random testing of finished product recommended
PU fibers (non-solvent based)	Tin-organics	<p>If processed in bluesign® APPROVED materials:</p> <ul style="list-style-type: none"> ■ On discretion of bluesign technologies materials can be tolerated if bluesign® APPROVED materials are not available; PSF/SDS check by bluesign technologies necessary ■ Tin-organic free fibers have to be used
Membranes, films, tapes	Several	<p>If processed in bluesign® APPROVED materials:</p> <ul style="list-style-type: none"> ■ On discretion of bluesign technologies materials can be tolerated if bluesign® APPROVED materials are not available; PSF/SDS check by bluesign technologies check necessary ■ Random testing on parameters specified by bluesign technologies may be necessary (e.g. testing PU membranes on tin-organics) ■ Materials containing PFC (PTFE or fluorocarbon finishing) cannot be tolerated; a bluesign approval is mandatory
Wool	Chlorinated wool	<ul style="list-style-type: none"> ■ Usage ban for processing in bluesign® APPROVED articles ■ Pre-conditions at the production site have to be followed if chlorine treatment is carried out
	Permethrin (biocides)	<ul style="list-style-type: none"> ■ Regard BSSL restrictions (Permethrin is not allowed for usage range A or B) ■ Follow relevant guidance sheet
	Scoured wool (APEO)	<ul style="list-style-type: none"> ■ Use APEO free wool (APEO might be contained in scouring agent used for raw wool scouring) ■ Adapt purchasing specifications (supplier shall confirm that raw wool is washed APEO free) ■ Random testing of main Non-EU raw material qualities necessary. ■ Regard BSSL restrictions at least for bluesign® APPROVED materials
	After Chrome dyed wool	<ul style="list-style-type: none"> ■ Usage ban at the site. ■ Short term phase out necessary
Silk	weighted/loaded	<p>If processed in bluesign® APPROVED materials:</p> <ul style="list-style-type: none"> ■ PSF check by bluesign technologies check necessary
	degummed	<p>If processed in bluesign® APPROVED materials:</p> <ul style="list-style-type: none"> ■ APEO free confirmation required

Substrate	Impurities	Measure/Consequence
Linen	Pesticides	<ul style="list-style-type: none"> ■ Obtain a certificate of approval on pesticide contents. ■ Regard BSSL restrictions at least for bluesign® APPROVED materials ■ Random testing of main raw material types recommended
Down and feathers	Pre-washed down and feathers/APEO; sterilized materials/preservatives	<ul style="list-style-type: none"> ■ Use APEO free down/feathers (APEO might be contained in detergent used for pre-washing) ■ Adapt purchasing specifications (supplier shall confirm that down and feathers are washed APEO free) ■ Random testing of main raw material qualities necessary. ■ Regard BSSL restrictions at least for bluesign® APPROVED materials. ■ Obtain information on sterilization procedure and, if relevant, chemicals used for sterilization (if BSSL substance is involved (e.g. formaldehyde) testing results are required) ■ Assure by means of an appropriate input control, as for example supplier evaluation and supplier selection, purchase conditions as well by reliable certificates or confirmations that live plucking is avoided
		<p>If processed in bluesign® APPROVED materials:</p> <ul style="list-style-type: none"> ■ Downs and feathers must be bluesign® APPROVED
Metal (pure metals and alloys); raw metal and metal parts (e.g. springs, rings)	Heavy metals (Cd, Pb, etc.), Ni	<ul style="list-style-type: none"> ■ Install an appropriate input stream management (supplier declaration, testing program, appropriate testing) ■ BSSL limits must be kept.
Coated, painted, surface treated metal parts	Several	<p>If processed in bluesign® APPROVED materials:</p> <ul style="list-style-type: none"> ■ Only bluesign® APPROVED materials can be used. Exception: parts are not accessible; these parts shall be controlled by appropriate input stream management
Plastic parts	Several	Only bluesign® APPROVED plastic parts can be used for bluesign® APPROVED materials

Table 2.1: Handling of non-chemical raw materials and intermediates by manufacturers

3 Special aspects regarding recycled materials

Recycling materials can be grouped into two main groups based on the origin of the material:

- Post-Production Recycled (PPR)
- Post-Consumer Recycled (PCR)

Depending on the source of the recycling materials different types and levels of impurities can be expected. While PPR material, especially if it is collected and used in one factory can be relatively easy characterized for its materials properties, PCR material poses greater difficulties in characterization of material.

Another influence on the material properties comes from the recycling process itself.

Starting with the preparation step of sorting, where different levels of purity of variety can be obtained.

While mechanical recycling does not remove significant amounts of impurities (except water soluble impurities during washing), thermal recycling may remove some volatile compounds, while having low influence on non-volatile compounds. Chemical recycling, where the materials are recycled on the molecular level brings the highest level of control for impurities, since typically several cleaning steps are necessary as a basic process requirement.

This – in comparison to virgin materials – comparatively vague data situation results in the necessity of higher input stream management efforts.

The following measures shall be applied (in addition to ascertaining the physical and mechanical properties required for the process):

Substrate	Impurities	Measure/Consequence
Recycled materials (general)		<ul style="list-style-type: none"> ■ Obtain Information on the sources of recycling material (PPR/PCR, description of origin(s)) ■ Request information on the type of recycling process applied for the material: <ul style="list-style-type: none"> ○ Chemical recycling ○ Mechanical recycling ○ Thermal recycling ■ Obtain a confirmation of RSL compliance by the material supplier ■ Apply all measures applicable for the respective material from Chapter 2 ■ Conduct spot tests for relevant parameters of the bluesign® RSL, selected regarding type and amount of material (Testing matrix can support parameter selection); Testing for heavy metals is strongly recommended (in case of material that has been subject to wet processing also APEO tests are strongly recommended) ■ Get further information from the material supplier (e.g. COA, test results, traceability system) and apply supplier evaluation and rating
Recycled polyester	PVC residuals or other impurities from blend materials	<p>If recycled polyester is processed in bluesign® APPROVED materials:</p> <ul style="list-style-type: none"> ■ Obtain information on antimony content in PES fiber by purchase specification (if not reported in SDS) ■ Try to use PES with low antimony content ■ Random testing of raw materials with unknown antimony content and finished products recommended ■ Usage ban for recycled PES fibers blended with unknown other raw materials ■ Max. content of PVC residuals: <0.05% ■ Ask in purchase conditions for PVC content and purity of recycled fiber ■ Random testing of raw material on PVC content necessary

Table 3.1: Handling of recycled materials by manufacturers