BLUE ANGEL

The German Ecolabel

Nappies, feminine hygiene and incontinence products (absorbent hygiene products, AHP)

DE-UZ 208

Basic Award Criteria

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Version 4

The Environmental Label is supported by the following four institutions:

Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.

Umwelt Bundesamt

The German Environmental Agency with its specialist department for "Ecodesign, Eco-Labelling and Environmentally friendly Procurement" acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Criteria for Award of the Blue Angel.

Jury Umweltzeichen

The Environmental Label Jury is the independent, decision-making body for the Blue Angel and includes representatives from environmental and consumer associations, trade unions, industry, the trade, crafts, local authorities, academia, the media, churches, young people and the German federal states.

RAL gGmbH

The RAL gGmbH is the awarding body for the Environmental Label. It organises the process for developing the relevant award criteria in independent expert hearings – which involve all relevant interest groups.

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This document is a translation of a German original. In case of dispute, the original document should be taken as authoritative.

1 Introduction

1.1 Preface

In cooperation with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the German Environmental Agency and considering the results of the expert hearings conducted by RAL gGmbH, the Environmental Label Jury has set up these Basic Criteria for the Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.

Upon application to RAL gGmbH and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH, the permission to use the Environmental Label may be granted to all products, provided that they comply with the requirements as specified hereinafter.

The product must comply with all the legal requirements in the country in which it is to be marketed. The applicant shall declare that the product meets this requirement.

1.2 Background

The proportion of children in Germany who wear disposable nappies in their first years of life is estimated to be 95%. This means that around ten million nappies are used and thrown away every day. In addition, there are approximately 46,100 tonnes of feminine hygiene products sold every year[1]. Around 5 million people are affected by incontinence in Germany. In outpatient care alone, statutory health and nursing care insurance providers use about 4.9 million incontinence products every day[2].

This high number is especially relevant because a large amount of raw materials are used in their production and the hygiene products create a corresponding amount of waste after their use. According to projections based on these figures, 154,680 tonnes of waste nappies are produced annually in Germany alone. This was proceeded by the use of large quantities of plastics, fluff pulp and chemical components, not to mention the energy consumed during their production and the emissions generated.

In addition, the wearing of absorbent hygiene products means that these products are in regular contact with the skin or mucous membranes and thus even the smallest quantities of chemicals harmful to health could have a negative impact. Against this background, special care must be taken when selecting the raw materials.

Those products labelled with the Blue Angel environmental label face up to these challenges by exclusively using cellulose fibres (e.g. fluff pulp, cotton, reclaimed cellulose) sourced from forests that have been verifiably managed according to the guidelines for sustainable forestry. The relevant forestry business must work in accordance with a high ecological and social standard and be certified accordingly. A comprehensive range of criteria are designed to ensure energy efficient and low emission fluff pulp production. In the further development of the environmental label, the possibility of unbleached fluff pulp or completely chlorine free bleaching processes (TCF) will be examined.

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[1] Source: https://de.statista.com/outlook/80040000/137/damenhygiene/deutschland#market-volume last accessed on 22\09\2020

[2] Source: Own calculations based on the "Aufsaugende Inkontinenzhilfsmittel Zahlen, Daten, Fakten" (Absorbent incontinence products – figures, data and facts) brochure from the German Medical Technology Association. 2015

In the production of other biogenic raw materials, which may possibly be used in the products, only certified biomass is approved. One example is the requirement for 100% organic cotton.
There are strict requirements placed on all of the approved materials in the certified products and a detailed exclusion list for hazardous substances and those harmful to health.
Furthermore, the use of lotions, fragrances and odour absorbers is prohibited in the products awarded with the environmental label. Individual components of these additives could be allergenic and thus should not be used.
In an application test, the products must also achieve a minimum level of satisfaction with respect to their fitness for use and quality from 80% of the test subjects.

1.3 Objectives of the Environmental Label

Climate protection, a reduction in power consumption, increased use of sustainable resources and the avoidance of pollutants and waste are key objectives of environmental protection.
The Blue Angel ecolabel for nappies, feminine hygiene and incontinence products (absorbent hygiene products, AHP) may be awarded to products featuring the following environmental properties:

- Avoidance of hazardous substances or those harmful to health
- Use of fluff pulp from certified sustainable sources, as well as from paper mills that utilise particularly energy efficient and low emission production technologies
- Use of organic cotton
- Avoidance of cosmetic additives (such as e.g. lotions and fragrances)

Therefore, following benefits for the environment and health are stated in the explanatory box:

1.4 Definitions

- **Degradation product**: Degradation products are transformation products that are created in the degradation of substances and mixtures (according to the REACH Regulation).
- **Feminine hygiene product**: The term feminine hygiene product covers the following products: sanitary towels, tampons, panty liners and nursing pads.
- **Incontinence product**: Incontinence products are used by people with uncontrolled bladder or bowel movements in order to make their everyday lives easier. They are often used in care homes and hospitals. Different versions exits, such as e.g. pads, disposable underwear, incontinence slips or anal tampons.

- **Superabsorbent polymers**: Superabsorbent polymers are synthetic polymers designed for absorbing and retaining large amounts of liquid compared to their own mass[3]. Other names are suberabsorbers or SAPs.
- **Sales packaging**: Packaging that is typically offered to the end consumer with the goods as a sales unit (§3 (1) No.1 German Packaging Law - VerpackG);
- **Repackaging**: Packaging that contains a certain number of sales units (consisting of the goods and their sales packaging) and which is typically offered to the end consumer as a "bulk pack" (§3 (1) No. 2 VerpackG)
- **Transport packaging**: Packaging that facilitates the handling and transport of goods to avoid direct contact with the goods and any transport damage. This packaging is typically not passed on to the end consumer (§3 (1) No. 3 VerpackG)
- **Composite packaging**: Composite packaging is packaging that consists of two or more different materials that cannot be separated by hand (§3 (5) VerpackG). If the main material component accounts for more than 95% by mass of the total composite packaging, the […] composite packaging can be fully assigned to the recycling quota for the main type of material (§16 (3) VerpackG).
- **Segregation (supply chain management)**: The raw material from a certified production location is kept separate from other non-certified raw materials along the entire supply chain.
- **Mass balance (supply chain management)**: The raw material from a certified production location is monitored administratively in the supply chain based on its weight. The raw material can be mixed with non-certified raw materials and then separated from the mixture using a mass balance.
- **Book & Claim (supply chain management)**: Manufacturers purchase certificates via a trading platform based on the quantity of raw materials added to their product. There is no physical relationship between the added raw materials and the production promoted by the certificate.
- **Air dry tonne [ADt]** is the unit of measurement for wood with a moisture content of around 15–20 % that has to be stored (acclimatised) in dry conditions for several years.

2 Scope

These Basic Award Criteria apply to disposable hygiene products with an absorbent function for bodily excretions that remain on or in the body for a certain period of time. The scope covers nappies (e.g. disposable nappies, nappy liners, swim nappies and pants), incontinence products (e.g. incontinence pads, disposable pants, incontinence slips and anal tampons) and feminine hygiene products (panty liners, sanitary towels, tampons and nursing pads).

[3] Definition according to (2014/763/EU) (establishing the ecological criteria for the award of the EU Ecolabel for absorbent hygiene products).

The following products are not covered by the scope of these Basic Award Criteria:

- Face masks
- Bandage dressings
- Wet wipes
- Handkerchiefs and facial tissues
- Nappy changing mats
- Cotton wool pads

3 Requirements

3.1 Product description

A precise product description and a description of the packaging is required when applying for the environmental label. The following information is required: the name of the manufacturer, the product name, a classification of the size (e.g. body weight for nappies) or absorption category (e.g. light, medium or heavy incontinence for incontinence products), functions of the hygiene product, the suppliers of the added components and a list of the functional materials used.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract and submit a product description based on the preprinted form in Annex 2. If the composition of the product changes during the term of a Contract on the Use of the Environmental Label, the applicant shall comply with the requirements in Appendix F.

3.2 General exclusion of substances with certain properties

To protect the environment and health, substances and mixtures with certain properties are not permitted in the product or parts of the product.

The following substances may not be a constituent component of the hygiene product[4] or parts thereof[5]:

a) The use of substances of very high concern (SVHC) that have been identified as being particularly alarming in accordance with Article 57 of Regulation (EC) No 1907/2006 (REACH) and added to the so-called "candidate list"[6] according to Article 59 Paragraph 1 of the same regulation is prohibited in the end products.
   The version of the list of candidates at the time of application is valid.

[4] Constituent components are substances or mixtures added to the product or the intermediate product and remain there unchanged in order to achieve or influence certain product properties and those required as chemical cleavage products for achieving the product properties. This does not include, for example, residual monomers that have been reduced to a minimum and unavoidable impurities. If necessary, these substances are covered by their own requirements.

[5] This does not include process chemicals. The dimethylacetamide (DMAc) used in the production of elastic fibres is considered a process chemical.

[6] The list of candidates in its currently valid version can be found at: http://echa.europa.eu/web/guest/candidate-list-table

b) Substances and mixtures which according to the criteria of Regulation (EC) No 1272/2008 (CLP)[7] are assigned the following H Phrases named in the table or which meet the criteria for such classification.[8]

Table 1: H Phrases and associated wording

H Phrases	Wording
Toxic substances	
H300	Fatal if swallowed
H301	Toxic if swallowed
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H310	Fatal in contact with skin
H311	Toxic in contact with skin
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H330	Fatal if inhaled
H331	Toxic if inhaled
H332	Harmful if inhaled
H370	Causes damage to organs
H371	May cause damage to organs
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
Sensitizing substances	
H317	May cause an allergic skin reaction
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogenic, mutagenic and reprotoxic substances	
H340	May cause genetic defects.
H341	Suspected of causing genetic defects
H350	May cause cancer.
H351[9]	Suspected of causing cancer.
H360	May damage fertility or the unborn child
H361	Suspected of damaging fertility or the unborn child.
H362	May cause harm to breast fed children
Environmental hazards	
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long-lasting effects
H411	Toxic to aquatic organisms with long-lasting effects
H412	Harmful to aquatic organisms with long lasting effects
H413	May cause long lasting harmful effects to aquatic life

Source: H Phrases according to the CLP Regulation

[7] Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures.

[8] The harmonized classifications and labellings of dangerous substances can be found in Annex VI, Part 3 of the CLP Regulation. Furthermore, a comprehensive classification and labelling inventory, which also includes all of the self-classifications of hazardous substances made by manufacturers, has been made available to the public on the website of the European Chemicals Agency: ECHA classification and labelling inventory.

[9] An exception is made for titanium dioxide because its classification is only based on the respirable dust.

c) Substances whose degradation products have properties that are carcinogenic, mutagenic or reprotoxic. No dyes that contain azo dyes that could release aromatic amines classified as carcinogens (see Appendix A "Carcinogenic aromatic amines") are permitted. These dyes are named in the REACH Regulation (1907/2006/EC), Annex XVII, Entry 43.
d) Substances classified as carcinogenic, mutagenic or reprotoxic substances in categories 1, 2 and 3 in the currently valid version of TRGS 905[10].

The following exemption to the general exclusion of substances with certain properties applies to dipropylene glycol dibenzoate (CAS 27138-31-4) in hot melt adhesives that are used to indicate wetness.

Table 2: The following substance is exempt from this criterion

Substance	H Phrases	Wording
Dipropylene glycol dibenzoate (CAS 27138-31-4)	H412	Harmful to aquatic organisms with long lasting effects

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract. If the substances or mixtures require safety data sheets according to the legal regulations, these shall also be enclosed as Annex 24. The verification can also be directly supplied to the awarding body for the environmental label by the suppliers of the functional materials if desired.

3.3 Testing for certain chemical substances in the end product

Laboratory tests must be carried out for the following chemical substances to verify that the products do not contain these pollutants. Based on the measurements on the end product (hygiene product) or individual components, referred to under "Test objects", it must be verified that the concentrations of the relevant chemical substances do not exceed the concentrations stated under "Requirement".

The sample for the test object "Product without absorbent core" must be prepared in accordance with the standard test method NWSP 351[11] from EDANA.

[10] TRGS 905, Directory of carcinogenic, mutagenic or teratogenic substances from the Committee for Hazardous Substances (AGS). The current version at the time of application is valid. The TRGS lists such CMR substances that have not received harmonised classifications up to now or where the AGS has come to a different classification.

[11] Nonwovens Standard Procedures NWSP 351.0.R0 (15) Determination of Ethanol- Extractable Organotin Species in Absorbent Hygiene Products and Materials; Absorbent Hygiene Products – Organotin l

Table 3: Requirements for the test objects

Substance	Text object	Requirement
Formaldehyde in water extract	Product without absorbent core	< 1 mg/dm^2 or < 16 mg/kg
Glyoxal in water extract	Product without absorbent core	< 1.5 mg/dm^2 or < 5 mg/kg (detection limit)
Extractable heavy metals		
Antimony	Product without absorbent core	< 5 mg/kg
Lead	Product without absorbent core	< 0.2 mg/kg
Cadmium	Product without absorbent core	< 0.1 mg/kg
Total chromium	Product without absorbent core	< 1 mg/kg
Mercury	Product without absorbent core	< 0.02 mg/kg
1,3 DCP (1,3-dichloro-2-propanol) in water extract	Product without absorbent core	< 2 µg/l
3 MCPD (3-monochloro-1,2-propandiol) in water extract	Product without absorbent core	< 12 µg/l
Nonylphenol	Product without absorbent core	< 5 mg/kg
Phthalates (See Appendix B for the list of substances)	Product without absorbent core	Total: < 250 mg/kg[12]
Organotin compounds: TBT, TPT, DBT, DOT, MBT	Product without absorbent core	- Tributyltin compounds (TBT): < 0.025 mg/kg - Triphenyltin (TPT): < 0.05 mg/kg - Dibutyltin compounds (DBT): < 0.1 mg/kg - Dioctyltin compounds (DOT): < 0.1 mg/kg - Monobutyltin compounds (MBT): < 0.1 mg/kg
Polycyclic aromatic hydrocarbons (15 PAHs[13])	Product without absorbent core	Total <1 mg/kg[12] For carcinogenic PAHs <0.2 mg/kg
Chlorophenols trichlorphenole TCP; tetrachlorphenole TeCP; pentachlorphenol PCP	Fluff pulp/absorbent core	- TCP: < 0.1 mg/kg - TeCP: < 0.05 mg/kg - PCP: < 0.05 mg/kg
Polychlorinated biphenyls (PCB 28, PCB 52, PCB 101, PCB 138, PCB 153, PCB 180)	Fluff pulp/absorbent core	Total < 2 mg/kg
Dimethylacetamide (DMAc)	Elastic threads	< 200 mg/kg
Carcinogenic aromatic amines (Appendix A)	Coloured parts of the product	Total: < 20 mg/kg

[12] For calculating the total sum, only those components in the material that are measured above the detection limit are taken into account.

[13] According to: Testing and assessment of polycyclic aromatic hydrocarbons (PAHs) in the course of awarding the GS mark; https://www.baua.de/DE/Aufgaben/Geschaeftsfuehrung-von-Ausschuessen/AfPS/pdf/AfPS-GS-2019-01-PAK.pdf

Substance	Text object	Requirement
Resistance to saliva and perspiration	Coloured parts of the product	Level 4 or better of the grey scale

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a test report as Annex 3.
The test must be carried out on a representative product. In the case of identically produced products (e.g. hygiene products of different sizes), it is sufficient to carry out tests on one of the product sizes.
The test report must be produced by a testing laboratory accredited according to DIN EN ISO/IEC 17025 (general requirements for the competence of testing and calibration laboratories) or with official accreditation as a GLP laboratory[14]. In-house laboratories are recognised as being of an equivalent standard when they have been accredited by an independent body as an SMT laboratory (supervised manufacturer testing laboratory).
The method used for preparing the samples shall be stated in the test report.
In Appendix C "Analysis methods for testing for certain chemical substances in the end product", there is a list of analysis methods that have been approved for carrying out the measurements. If other analysis methods are used, the equivalence of these methods must be verified.

3.4 Fluff pulp

3.4.1 Origin of the fluff pulp

The wood used for the production of the fluff pulp must be sourced 100% from certified forests that can verify that they are managed in accordance with the principles of ecological and socially responsible forestry management.

Verification for the fluff pulp used in the product

- must be provided in the form of one of the following certificates:
  - Forest Stewardship Council (FSC): *FSC Mix Credit or FSC 100%,*
  - Programme for the Endorsement of Forest Certification Schemes (PEFC): 100% *PEFC certified,*
- or by submitting a comparable certificate whose scope and requirement standards is equivalent to one of the named certification systems. The equivalence of the certification system must be confirmed by an independent environmental verifier.
- Alternatively, individual verifications in accordance with the criteria and verification requirements of one of the named certification systems may be presented if an equivalent level of protection can be achieved. The equivalence of the individual verifications must be confirmed by an independent environmental verifier.

For the wood used in the production of the fluff pulp, the tree species including their scientific names (e.g. *Pinus elliottii* for pine) and the geographical location of the forest (country) must be stated.

[14] http://www.oecd.org/chemicalsafety/testing/oecdseriesonprinciplesofgoodlaboratorypracticeglpandcompliancemonitoring.htm

The following information must be provided about the fluff pulp used for manufacturing the product:

- The trading name of the fluff pulp
- The technical data sheet
- The certification system used to verify the origin of the wood.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1.
The following information shall be entered in Annex 1:

- *the name of the wood used for the production of the fluff pulp, the geographical location of the forest and the trading names of the fluff pulp*
- *The name of the certification system used for the fluff pulp and the sales documents (usually the invoice or delivery note) verifying delivery of legitimately certified raw materials. Verification is based on two data points:*
  - *A valid certification number and an appropriate scope of certification (e.g. tested via the FSC certificate database [15]) and*
  - *A certification statement on the material.*

FSC, PEFC or systems whose equivalence has been proven will be accepted as verification.

3.4.2 Production of the fluff pulp

3.4.2.1 Auditor for examining the criteria for the production of the fluff pulp

To verify compliance with the criteria on the production of the fluff pulp stated in Paragraph 3.4.2, the applicant shall submit a report completed by an auditor from

- a certification body for ISO 14001 accredited by the German Accreditation Body (DAkkS) or an international accreditation body for the scope of paper manufacturers (NACE 17.12) or
- an environmental verifier approved for this scope (NACE 17.12) by the German Society for the Accreditation and Registration of Environmental Verifiers (DAU) in accordance with the Environmental Audit Act or
- an expert in this field recognised by the UBA.

The evaluation of compliance with the criteria will be carried out in each case based on the stated verifications.

Compliance verification

The applicant shall declare compliance with all of the criteria in Paragraph 3.4.2 in Annex 1 to the contract. To verify compliance with the criteria in Paragraph 3.4.2, a report shall be submitted to RAL GmbH as Annex 4 to the contract that confirms compliance with the criteria based on the stated verifications in each case.

[15] https://info.fsc.org/index.php?lang=GER

3.4.2.2 Waste water emissions

There are strict requirements for the emissions to waste water during the production of the fluff pulp used in the hygiene products. The applicant must determine the levels of the following chemical substances in the emissions to waste water at the fluff pulp plant (measurement specifications, see Appendix D "Measurement of emissions to waste water"):

- *Chemical oxygen demand* (COD) in kg O[16] per air dry tonne[17]
  Proportion of chemically oxidising organic compounds in the waste water (usually based on analyses using dichromate oxidation) given as O
- *Total nitrogen content* in kg N per air dry tonne
  Total-N (Total nitrogen, Tot-N), given as N. This includes organic nitrogen, free ammonia and ammonium (NH4+-N), nitrites (NO2--N) and nitrates (NO3--N).
- *Total phosphorous content* in kg P per air dry tonne
  Total-P (Tot-P), given as P. This includes both dissolved phosphorous and also undissolved phosphorous which enters the waste water in the form of precipitates or microorganisms.

The following reference values apply to the named substances:

- *Chemical oxygen demand*: $COD_{Reference}$ = 18.00 kg O/air dry tonne
- *Total nitrogen content*: $N_{Reference}$ = 0.25 kg N/air dry tonne
- *Total phosphorous content*: $P_{Reference}$ = 0.03 kg P/air dry tonne

Based on the measurement values, the applicant must calculate so-called emission points (P) for each of the measured substances as a ratio between the measurement value and the reference value as follows:

- $P_{CSB} = \frac{CSB_{Messwert}}{CSB_{Referenz}}$

- $P_N = \frac{N_{Messwert}}{N_{Referenz}}$

- $P_P = \frac{P_{Messwert}}{P_{Referenz}}$

The following requirements apply:

a) For each of the emission points P_{COD}, P_N, P_P, a value of 1.5 must not be exceed in each case and
b) The sum of the emission points for emissions to waste water and air (P_{COD}, P_N, P_P, $P_{Sulphur}$ and P_{NOx}, criteria 3.4.2.2 and 3.4.2.3) must not exceed a value of 5.0.

In addition, the AOX value in the waste water must also be determined. See Paragraph 3.4.2.4 for more details.

[16] O stands for oxygen
[17] air dry: air dried fluff pulp

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract, provide details on the auditor (according to 3.4.2.1) and enclose Annex 5 (emission values) completed by the producers of the fluff pulp, as well as the test reports in Annex 6 and the required supplementary documentation to the contract.
The supplementary documentation comprises calculations of the emission points verifying compliance with this requirement.
The test reports must comply with the measurement requirements according to the measurement specifications in Appendix D " Measurement of emissions to waste water".
The submitted test reports must be produced by a testing laboratory accredited according to DIN EN ISO/IEC 17025 (general requirements for the competence of testing and calibration laboratories) or with official accreditation as a GLP laboratory[18]. In-house laboratories are recognised as being of an equivalent standard when they have been accredited by an independent body as an SMT laboratory (supervised manufacturer testing laboratory).

3.4.2.3 Emissions to air

There are strict requirements for the emissions to air during the production of the fluff pulp used in the hygiene products. The emissions to air include those from the recovery boiler, lime kiln, steam boiler and incinerator for strong smelling gases. Diffuse emissions must also be taken into account. The applicant must determine the levels of the following chemical substances in the emissions to air at the fluff pulp plant (measurement specifications, see Appendix E "Measurements of emissions to air"):

- *Gaseous sulphur compounds* (sulphur) in kg S per air dry tonne
  Total reduced sulphur (TRS): Sum of the following reduced bad-smelling sulphur compounds released during the production of the fluff pulp: hydrogen sulphide, methyl mercaptan, dimethyl sulphide and dimethyl disulfide, given as S, plus sulphur dioxide (SO_2), given as S
- *Nitrogen oxide* (NO_x) in kg NO_x per air dry tonne
  Sum of nitrogen oxide (NO) and nitrogen dioxide (NO_2), given as NO_2
- *Dust emissions* (dust) in kg dust per air dry tonne
  Sum of the dust emissions at the recovery boiler and lime kiln, given as dust Solid particles of any form, structure or thickness that are dispersed during the gas phase and remain upstream of a defined filter after drying under specified conditions (according to DIN EN 13284 - 1).

The following reference values apply to the named substances:
- *Gaseous sulphur compounds*: $Sulphur_{Reference}$ = 0.6 kg S/air dry tonne
- *Nitrogen oxide*: $NO_{xReference}$ = 1.5 kg NO/air dry tonne

Based on the measurement values, the applicant must calculate so-called emission points (P) for each of the measured substances as a ratio between the measurement value and the reference value as follows:

[18] see footnote 14

- $P_{Schwefel} = \frac{Schwefel_{Messwert}}{Schwefel_{Referenz}}$

- $P_{NOx} = \frac{NOx_{Messwert}}{NOx_{Referenz}}$

The following requirements apply:

a) For each of the emission points $P_{Sulphur}$ and P_{NOx}, a value of 1.5 must not be exceed in each case and
b) The sum of the emission points for emissions to waste water and air (P_{COD}, P_N, P_P, $P_{Sulphur}$ and P_{NOx}, criteria 3.4.2.2 and 3.4.2.3) must not exceed a value of 5.0.

Dust emissions must not exceed the limit value of 0.33 kg dust/air dry tonne.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract, provide details on the auditor (according to 3.4.2.1) and enclose Annex 5 (emission values) completed by the producers of the fluff pulp, as well as the test reports in Annex 6 and the required supplementary documentation to the contract.
The supplementary documentation comprises calculations of the emission points verifying compliance with this requirement.
The test reports must comply with the measurement requirements according to the measurement specifications in Appendix E "Measurements of emissions to air".
The submitted test reports must be produced by a testing laboratory accredited according to DIN EN ISO/IEC 17025 (general requirements for the competence of testing and calibration laboratories) or with official accreditation as a GLP laboratory[19]. In-house laboratories are recognised as being of an equivalent standard when they have been accredited by an independent body as an SMT laboratory (supervised manufacturer testing laboratory).

3.4.2.4 Bleaching process for the fluff pulp

In the production of the fluff pulp, the following requirements apply to the bleaching process:

- The fluff pulp must not be bleached using elementary chlorine.
- The specific amounts of poorly biodegradable complexing agents (thylenediaminetetraacetic acid (EDTA) and diethylenetriaminepentaacetic acid (DTPA)) must be stated in kg per air dry tonne, expressed as an annual average.
- A total chlorine free (TCF) process is preferred for the bleaching process, although an elemental chlorine free (ECF) process is permitted. In this case, the specific amount of bleaching agent consumed, expressed as an annual average, must be stated in kilograms of ClO_2 per air dry tonne. The adsorbable organically combined halogens (AOX) must be measured in the waste water. The annual average for the measured AOX emissions to waste water must not exceed a value of 0.12 kg AOX per air dry tonne.

[19] see footnote 14

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract, provide details on the auditor (according to 3.4.2.1) and submit a declaration from the fluff pulp producer in Annex 7 verifying no elemental chlorine is used in the bleaching processes. In addition, the fluff pulp producer shall name the bleaching process, state the specific amounts of EDTA and DTPA consumed as well as the bleaching agent, and submit the corresponding test report as Annex 8. One of the test methods ISO 9562, EN1485, DIN 38409 Part 14 or the equivalent EPA 1650C must be used for measuring the AOX emissions. The measurements shall be carried out over a production period of 12 months, with measurements taken on at least a monthly basis.
The submitted test reports must be produced by a testing laboratory accredited according to DIN EN ISO/IEC 17025 (general requirements for the competence of testing and calibration laboratories) or with official accreditation as a GLP laboratory[20]. In-house laboratories are recognised as being of an equivalent standard when they have been accredited by an independent body as an SMT laboratory (supervised manufacturer testing laboratory).

3.4.2.5 Energy consumption

The specific energy consumption in fluff pulp production must not exceed the following limit values:

- Electrical energy: ≤ 1.125 kWh/air dry tonne
- Heating energy: ≤ 7.500 kWh/air dry tonne

a) Electrical energy (electricity):
The electricity consumed in the production of the fluff pulp must be measured over a period of 12 months and stated in relation to the fluff pulp produced (air dry tonnes) during this period.

The electricity consumption is calculated as follows:
Electricity consumption = electricity generated at the plant
plus the electricity purchased from outside of the plant
less the electricity sold outside of the plant
less the electricity consumed for processes not related to the fluff pulp production at the plant
less the electricity consumed at the treatment plant

b) Heating energy (fuel):
The heating energy consumed in the production of the fluff pulp must be measured over a period of 12 months and stated in relation to the fluff pulp produced (air dry tonnes) during this period. Heating energy can be in the form of gaseous, liquid or solid fuels (e.g. natural gas, heating oil, biomass) or in the form of heat transfer media (e.g. water, steam). For the energy content of the fuel, the lower heating value (LHV) for the relevant fuel is used. In the case of damp fuels (e.g. wood, biomass), the effective calorific value (after subtracting the evaporation energy of the enclosed water) is used, while the effective energy content is used for heat transfer media.

[20] see footnote 14

The heating energy consumption is calculated as follows:
Heating energy consumption = fuel produced at the plant
plus the purchased heating energy or fuel
less the heating energy or fuel sold
less 1.25 x the electricity generated at the plant
less heating energy consumed for processes not related to the fluff pulp production at the plant

Note:
The heating energy includes all fuels used (their *lower heat value*) and the heating energy recovered from the incineration of pulping liquors and waste at the production site (e.g. waste wood, sawdust, pulping liquor, waste paper, rejected paper), as well as the heating energy recovered from the plant's own electricity generation. The applicant must present the calculation for the energy consumption for the fluff pulp production in the form of an energy statement together with the calculation parameters used. If the applicant does not have their own heating values for the fuels used, the heating values documented in the Nordic ecolabel for paper products [21] may be used.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract. In addition, the applicant shall provide details on the auditor (according to 3.4.2.1) and submit an energy statement in Annex 9, which documents the energy consumption over a period of 12 months, the heating values for the relevant fuels used, the annual production of fluff pulp and the calculation of the specific energy consumption values.

3.5 Cotton

3.5.1 Origin of the cotton

The cotton fibres must be sourced 100% from controlled organic cultivation or from fibres from the conversion phase[22] and must comply with the requirements of Regulation (EC) No 834/2007 (EC Organic Regulation) or the so-called "Common Objectives and Requirements of Organic Standards"[23] from the International Federation of Organic Agriculture Movements, IFOAM; since 2015 IFOAM – Organics International. Retrieval ribbons on tampons are exempt from this requirement. At all stages of the processing chain, it must be ensured that controlled organic fibres and products are not mixed with conventional fibres and products and that the cotton is not contaminated with pollutants.

The fibres used in the products must not be sourced from genetically modified organisms (GMO).

[21] Nordic Ecolabelling of Paper Products – Basic Module, www.nordic-ecolabel.org/CmsGlobal/Criteria/Basic_module.pdf
[22] Conversion: Transition from non-organic to organic farming within a given period of time, during which the provisions concerning organic production have been applied (according to Regulation EC No 834/2007).
[23] https://www.ifoam.bio/our-work/how/standards-certification/organic-guarantee-system/coros (accessed: October 2020)

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 and submit a corresponding certificate as Annex 10.
Fibres labelled with one of the standards from the IFOAM family of standards[24] will be accepted. In addition, corresponding certificates from an internationally recognised certification body accredited by the IFOAM or in accordance with DIN EN ISO/IEC 17065 that verify compliance with recognised international or national ecological farming standards can be submitted.
The certification of products "in conversion" is only possible if the regulations on which the certification of the fibre production is based include the possibility of such certification for the fibres in question. However, they must be specially labelled in accordance with these regulations.
If requested to do so by RAL GmbH, the applicant shall submit, where relevant, a shipping or transaction certificate[25] from an accredited certification body verifying compliance with the requirement at all stages of the processing chain, as well as information on the amount of organic fibres produced and about the certification body and certification standard.
A certificate for the cotton used in the product whose criteria cover the above-mentioned requirements (e.g. GOTS) will be accepted as verification if the corresponding section of the criteria for the submitted certificate is clearly indicated.

3.5.2 Bleaching processes

Only a total chlorine free (TCF) bleaching process is permitted for the bleaching of cotton fibres.

Compliance verification

The applicant shall declare compliance with the requirement and state the bleaching process in Annex 1 to the contract.
In addition, the applicant shall submit a declaration from the cotton producers/suppliers as Annex 11 that confirms the chlorine free bleaching of the cotton. If the chlorine free bleach is part of the organic certificate for the material, a declaration from the supplier/producer is not required. Instead, the applicant shall verify compliance by submitting the organic certificate document and providing information on the certification criteria. A certificate for the cotton used in the product whose criteria cover the above-mentioned requirements (e.g. GOTS) will be accepted as verification if the corresponding section of the criteria for the submitted certificate is clearly indicated.

3.6 General requirements for plastics in the product and packaging

All plastics made from fossil or renewable raw materials that are added to the product or packaging must comply with the requirements in the following subsections.

3.6.1 Exclusion of substances with certain properties

Substances with certain properties are generally excluded, i.e. refer to Paragraph 3.2 for the requirements and compliance verifications.

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[24] Download the list: https://www.ifoam.bio/sites/default/files/2020-05/familyframe_web_0.pdf (Stand: October 2020)
[25] This is a certificate that confirms that the raw cotton was produced in accordance with the relevant standard.

The product is not permitted to contain any halogenated polymers (e.g. polyvinyl chloride) (does not apply to the packaging).

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract.

3.6.2 Origin of renewable raw materials for bio-based plastics

If renewable raw materials are used to produce bio-based plastics for the product or packaging, these must be sourced from sustainable cultivation on cultivation areas that can verify that they are managed in an ecological and socially responsible manner.
The origin of the renewable raw materials for the production of the bio-based plastics must be verified in the form of a certificate from one of the following certification systems:

- International Sustainability and Carbon Certification (ISCC+),*[26]
- Roundtable on Sustainable Biomaterials (RSB),
- Roundtable Responsible Soy (RTRS),*
- Roundtable on Sustainable Palm Oil (RSPO),*
- REDcert (EU waste) – exclusively made of bio-based waste within the EU
- Forest Stewardship Council (FSC),
- Programme for the Endorsement of Forest Certification Schemes (PEFC)
- Öko-Landbau-Siegel (German organic label or EU organic logo "Euro Leaf")
- or a comparable certification system whose scope and requirement standards is equivalent to one of the named certification systems. The equivalence of the certification system must be confirmed by an independent environmental verifier.
- Alternatively, individual verifications in accordance with the criteria and verification requirements of one of the named certification systems may be presented if an equivalent level of protection can be achieved. The equivalence of the individual verifications must be confirmed by an independent environmental verifier.

The use of purchased certificates based on the Book & Claim system is excluded so that the traceability of the raw materials is possible.
The proofs of purchase for the raw materials or semi-finished products must be based on processes according to the segregation or mass balance systems (see Paragraph **Fehler! Verweisquelle konnte nicht gefunden werden.** "**Fehler! Verweisquelle konnte nicht gefunden werden.**"). Certifications from the Rainforest Alliance (SAN), Bonsucro and REDcert EU will not be accepted.

Compliance verification

The applicant shall declare in Annex 1 to the contract whether renewable raw materials are used to produce the plastics. If this is the case, the applicant shall document the origins and

[26] Feasibility study on overarching aspects - Part 1: material utilisation of biomass (Machbarkeitsstudie zu übergreifenden Aspekten - Teil 1: Stoffliche Nutzung von Biomasse) by Henneberg et al. (2019) - download from: https://www.umweltbundesamt.de/publikationen/implementierung-von-nachhaltigkeitskriterien-fuer-.

proportions by mass of the renewable raw materials used for the plastics in Annex 12 and submit the required certificates or verifications as Annex 13.

3.7 Requirements for special plastics

If applicable, the following requirements apply in addition to the criteria in 3.6 "General requirements for plastics in the product and packaging":

3.7.1 Superabsorbent polymers

Superabsorbent polymers (in short: superabsorbers or SAPs) added to the product are subject to additional requirements described in the following subsections.

3.7.1.1 Description

The following information must be provided for the superabsorbent polymers:

- Trade name
- Technical data sheet
- Safety data sheet including the chemical composition of the superabsorbent polymers added to the product and their CAS number
- The production processes/production steps used

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit the corresponding product information (e.g. technical data sheet, safety data sheet, etc.) in Annex 24. The applicant shall enclose a description of the production process as Annex 14.

3.7.1.2 Production process for SAPs

All facilities or plants in which SAPs (bio-based and synthetic) for absorbent hygiene products are produced must be equipped with systems for

a) saving water (e.g. monitoring the water flows into the plant and the circulation of water in enclosed systems);
b) integrated waste management (plan) for the optimal avoidance, reuse, recycling, recovery and disposal of waste (e.g. separation of different fractions of the waste);
c) optimising energy efficiency and energy management (e.g. reuse of the steam generated during the production of superabsorbent polymers).

Compliance verification

The applicant shall submit a declaration from the suppliers as Annex 14 verifying compliance with this requirement. The declaration must include a report (Annex 15) with a detailed description of the process that is used by the suppliers to comply with the requirement at all of the associated production sites. If available, the suppliers shall submit the EMAS audit report (Eco-Management and Audit Scheme).

3.7.1.3 Acrylamide

Acrylamide (CAS number: 79-06-1) must not be added to the product.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit a declaration from the SAP producer (Annex 14) verifying that the substance has not been added.

3.7.1.4 Residual monomers

Superabsorbent polymers used in the product may contain a maximum of 1,000 ppm residual monomers that are classified with the H Phrases listed under Paragraph 3.2.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit a declaration from the SAP producer stating the amount of residual monomers in the superabsorbent polymers as Annex 14 to the contract.
If requested to do so by RAL gGmbH, the applicant shall submit the relevant safety data sheets.

Recommended test methods are ISO 17190 (Urine-absorbing aids for incontinence – Test methods for characterizing polymer-based absorbent materials – Part 2: Determination of amount of residual monomers) and NWSP 210.0.R2 (15) (Nonwovens Standard Procedures NWSP 210.0.R2 (15) Polyacrylate Superabsorbent Powders – Determination of the Amount of Residual Monomers). A description of the analysis method shall be provided.

3.7.1.5 Water-soluble extracts

Superabsorbent polymers used in the product may contain a maximum of 10% water-soluble extracts (≤10%) by mass. The water-soluble extracts must comply with the requirements in Paragraph 3.2. In the case of sodium polyacrilate, these represent monomers and oligomers of acrylic acid whose molecular weight is lower than the superabsorbent polymers (according to ISO 17190 – Urine-absorbing aids for incontinence – Test methods for characterizing polymer-based absorbent materials).

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit a declaration from the SAP producer stating the amount of water-soluble extracts in the superabsorbent polymers as Annex 14 to the contract and confirming compliance with the requirements in Paragraph 3.2.

Recommended test methods are ISO 17190-10:2001 (Urine-absorbing aids for incontinence – Test methods for characterizing polymer-based absorbent materials – Part 10: Determination of extractable polymer content by potentiometric titration) and NWSP 270.0.R2(15) (Polyacrylate Superabsorbent Powders- Determination of Extractable Polymer Content by Potentiometric Titration). A description of the analysis method shall be provided.

3.7.2 Polyurethane and elastane

The sum of the proportions by mass of polyurethane and elastane in the product, based on the total weight of the hygiene product, must not exceed a value of 5%.

Compliance verification

The applicant shall declare in Annex 1 to the contract whether polyurethane or elastane have been added to the product and state their proportion by mass.

3.7.3 Polyamide

If polyamide with a proportion by mass of 5% or more (≥ 5%) is added to the product, additional requirements for the manufacturing process for polyamides apply. The N_2O emissions to air during the production of the monomers, expressed as an annual average, must not exceed a value of 9 g per kg of caprolactam (for polyamide 6 fibres) or 9 g per kg of adipic acid (for polyamide 6.6 fibres).

Compliance verification

The applicant shall declare in Annex 1 to the contract whether polyamides with a proportion by mass ≥ 5% have been added to the product. If this is the case, the applicant shall submit a declaration from the plastics producer as Annex 16 to the contract verifying compliance with the requirement.

3.7.4 Natural latex

The use of natural latex in the products is prohibited.

Compliance verification

The applicant shall declare in Annex 1 to the contract that no natural latex has been added to the product.

3.7.5 Silicone

It is not permitted to add any silicone during the production of the products and their components.

The protective paper or protective film used for the adhesive strips (peel-off strips) on some feminine hygiene products (e.g. panty liners and sanitary towels) or on nappy tapes[27] are exempt from this requirement. If these materials are coated with silicone, the following requirements apply:

- Silicone coatings containing solvents must not be used.
- The chemicals used in the silicone treatment must not contain either octamethylcyclotetrasiloxane D4 (CAS 556-67-2), decamethylcyclopentasiloxane D5 (CAS 541-02-6) or

[27] These product components are required to guarantee the functionality of the product in each case and are not for packaging purposes.

dodecamethylcyclohexasiloxane D6 (CAS 540-97-6) This requirement is considered to be fulfilled if D4, D5 and D6 are not intentionally added to the material or product and the concentrations found in the silicone are less than 800 ppm (proportion by mass) of the adhesive strip.
- The use of organotin compounds as a catalyst is not permitted in the production of the silicone polymers.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract.
If silicone is added to the protective paper or protective film used for the adhesive strips (peel-off strips) or nappy tapes, the applicant shall submit a declaration from the supplier or adhesive strip manufacturer as Annex 17 to the contract verifying compliance with the requirement.

3.8 Adhesives

Alongside the chemical-based requirements in Paragraph 3.2, the adhesives used on the product are not permitted to contain any of the following substances:
- Colophony (CAS numbers 8050-09-7, 8052-10-6, 73138-82-6),
- Formaldehyde (CAS numbers 50-00-0): The maximum limit for the content of formaldehyde generated during adhesive production is 250 ppm, measured in newly produced polymer dispersion. The content of free formaldehyde in hardened adhesive must not exceed 10 ppm. Hotmelt adhesives are exempt from this requirement.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit a declaration from the supplier or adhesive strip manufacturer as Annex 18 to the contract verifying compliance with the requirements.

3.9 Optical brighteners

It is not permitted to add any optical brighteners. An exception is made for the fluorescent markings required for the production process.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract.

3.10 Dyeing and printing

The product and its components must not be dyed or printed.
Exceptions are made for:
- Packaging materials and closing systems (adhesive strip, landing zone), as well as retrieval ribbons;
- Discreet printing of materials that do not come into contact with the skin, with a low colour intensity and not printed over the full surface;
- Wetness indicators. The exemption in Paragraph 3.2 must be taken into account.

If printing inks and dyes are used in the product, the chemical-related requirements apply (see Paragraph 3.2).

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract.
Insofar as printing inks and dyes are used for the exceptions described above, the applicant shall submit a declaration from the dye manufacturer as Annex 19 to the contract verifying compliance with the chemical-related requirements.
If requested to do so by RAL gGmbH, the applicant shall submit the relevant safety data sheets.

3.11 Added substances

Except for the exemptions defined in Paragraph 3.10 "Dyeing and printing", no substances may be added to the hygiene products with the purpose of achieving other effects beyond the absorbent function, such as lotions, mineral oil components, fragrances, antibacterial agents (biocides) or substances whose primary function is to avoid, bind or bond with odours.
Odour-binding or anti-odour substances are permitted in incontinence substances under the following conditions:

- The odour-binding or anti-odour substance must be enclosed or integrated into the absorbent core.
- The odour-binding or anti-odour substance must not exceed 1.5% by mass of the absorbent core.
- The odour-binding or anti-odour substance must be named (name of substance and CAS number).

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract. If applicable, the applicant shall state which odour-binding or anti-odour substance has been added to the product.

3.12 Packaging

3.12.1 Sales packaging

[1] Bio-based plastic packaging; the criteria in Paragraph 3.6 apply to the plastics used in packaging.

Compliance verification [1]

The applicant shall declare compliance with the requirements in Annex 1 and state whether renewable raw materials are used to produce the plastics. If this is the case, the applicant shall document the origins and proportions by mass of the renewable raw materials used for the plastics in Annex 12 to the contract and submit the required certificates or verifications (Annex 13).

[2] Requirements for the recylability of the packaging

The packaging must comply with the following requirements:

a) The content of the packaging that is available for recycling must exceed 95%[28]. The recyclability of the packaging must be determined in accordance with the currently valid version of the "Minimum standard for determining the recyclability of packaging subject to system participation"[29] from the Zentrale Stelle Verpackungsregister (Central Agency Packaging Register – ZSVR); the recyclability should be expressed in percent. It can also be determined based on a method that complies with the minimum criteria in the minimum standard from the ZSVR and also verifies this compliance.

b) Composite packaging or coating of the paper/cardboard with plastics or metals are not permitted.

Plastic packaging must also comply with the following requirement:

c) It is only permitted to use unmixed plastic without any coating.

Compliance verification [2]

The applicant shall declare compliance with the requirement in Annex 1 and state, if applicable, the type of plastic used from section (c). In addition, the applicant shall submit a description of the process for determining the recyclable content or the recyclability as Annex 20 (explanatory text). Verification of compliance can also be submitted in the form of confirmation from the packaging suppliers.

[3] Obligation to provide information on the sales packaging

In the application, the applicant shall also provide information on the design of the sales packaging for the product to be certified.

Compliance verification [3]

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit a description of the sales packaging as Annex 21.

3.12.2 Repackaging

[1] Bio-based plastic packaging; the criteria in Paragraph 3.6 apply to the plastics used in packaging.

Compliance verification [1]

The applicant shall declare compliance with the requirements in Annex 1 and state whether renewable raw materials are used to produce the plastics. If this is the case, the applicant shall document the origins and proportions by mass of the renewable raw materials used for the plastics in Annex 12 and submit the required certificates or verifications (Annex 13).

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[28] The available recyclable content according to the currently valid version of the "Minimum standard for determining the recyclability of packaging subject to system participation".

[29] Available at: https://www.verpackungsregister.org/stiftung-behoerde/mindeststandard-21-verpackg

[2] Requirements for the recylability of the packaging

The packaging must comply with the following requirements:

a) The content of the packaging that is available for recycling must exceed 95%[30]. The recyclability of the packaging must be determined in accordance with the currently valid version of the "Minimum standard for determining the recyclability of packaging subject to system participation"[31] from the Zentrale Stelle Verpackungsregister (Central Agency Packaging Register – ZSVR); the recyclability should be expressed in percent. It can also be determined based on a method that complies with the minimum criteria in the minimum standard from the ZSVR and also verifies this compliance.
b) Composite packaging or coating of the paper/cardboard with plastics or metals are not permitted.

Plastic packaging must also comply with the following requirement:

c) It is only permitted to use unmixed plastic without any coating.

Compliance verification [2]

The applicant shall declare compliance with the requirement in Annex 1 and state, if applicable, the type of plastic used from section (c). In addition, the applicant shall submit a description of the process for determining the recyclable content or the recyclability as Annex 19 (explanatory text). Verification of compliance can also be submitted in the form of confirmation from the packaging suppliers.

[3] Proportion of recycled material in the repackaging

Repackaging should be avoided or preferably consist of paper and cardboard. The following requirements must be fulfilled:

- Recycled fibres must account for at least 80% by mass of the total repackaging.
- The approved proportion of virgin fibres must not be sourced from forests that are particularly worthy of protection e.g. tropical or boreal forests.

If plastic repackaging is used, it must contain > 80% recycled plastic (PCR materials according to ISO-14021, 7.8.1.1 a, 2).

Compliance verification [3]

The applicant shall declare compliance with the requirements in Annex 1 to the contract and, if plastic packaging is used, state the polymer used and the recycled content.

[30] The available recyclable content according to the currently valid version of the "Minimum standard for determining the recyclability of packaging subject to system participation".
[31] Available at: https://www.verpackungsregister.org/stiftung-behoerde/mindeststandard-21-verpackg

3.12.3 Transport packaging

In the application, the applicant shall also provide information on the design of the business-to-business transport packaging for the product to be certified.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit a description of the packaging for business-to-business transport as Annex 22.

3.13 Consumer information

The sales packaging must contain consumer information (e.g. printed on the sales packaging) that includes the following information for the disposal of the used products:

- The hygiene products must not be thrown into the toilet.
- The hygiene products should be disposed of with the household waste.

In addition, the packaging must include information for consumers on the correct disposal of the packaging.

The terms "Bio" and "Eco" should not be used on the front of the packaging or in combination with the product designation. If individual materials produced in accordance with ecological and/or social standards are used, these materials and the proportions used should be stated on the rear of the packaging.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit a sample of the sales packaging (photo) on which the consumer information is printed as Annex 21.

3.14 Quality and fitness for use

The products must be of a high quality and fit for use. The applicant must verify this by submitting suitable test results.

At least the following test results must be provided for every product size and/or fluid absorption capacity:

- Product description
  - Weight
  - Dimensions
  - Design features of the product
- Quality test
  - Absorption test
  - Absorption rate
  - Rewetting test (except for tampons)
  - Skin dryness (e.g. TEWL (transepidermal water loss))
- Skin tolerance test (patch test or clinical test)
- Application test, using one product size as an example. If different product sizes exist, the similarity of these products to the tested product size must be demonstrated. At least 80%

of the test subjects must grade the performance of the product (including the leakage protection, absorption, wearability, skin dryness, overall performance) as good. For example, this could mean that 80% of the test subjects grade the relevant product as "good" or "very good" (from the five options "very bad", "bad", "satisfactory", "good" and "very good")

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit the relevant test reports in Annex 23. The tests must be product-relevant, repeatable and based on strict methods.
At least five samples must be used for the quality tests. The average results and the standard deviation must be stated.
The recommendations published by EDANA for application tests[32] [33]must be taken into account when carrying out the application tests. In particular, at least 100 test subjects should be used for products that are not specifically designed for one gender. For incontinence products and for products that are specifically designed for one gender at least 30 test subjects should be included.
The test report must be produced by a testing laboratory accredited according to DIN EN ISO/IEC 17025 (general requirements for the competence of testing and calibration laboratories) or with official accreditation as a GLP laboratory[34]. Application tests and clinical-dermatological tests are exempt from this requirement.
In-house laboratories are recognised as being of an equivalent standard when they have been accredited by an independent body as an SMT laboratory (supervised manufacturer testing laboratory).

3.15 Outlook

The outlook describes aspects that may be examined in the next revision of the Basic Award Criteria:

- With respect to the test methods for the pollutant criteria, a review will be carried out to determine whether the pollutants still need to be determined based on extraction and measurement standards as previously. It can be assumed that they will be totally excluded from the product and will also not be present during production. Alternatively, the aim may be to carry out measurements that are as "real" as possible using extraction methods for simulated urine and blood.
- The packaging criteria will be reviewed, e.g. with the aim of promoting the use of a high recycled content in the plastic and paper used for sales packagings for products that are also individually packaged. This requirement has only applied to repackaging up to now. A review will be carried out to determine whether additional criteria for a returnable transport packaging system and/or for testing the ratio between the filling volume and the packaging volume should be added.

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[32] www.edana.org/docs/default-source/international-standards/edana-diaper-test-protocol-2-0-final.pdf?sfvrsn=213c4e0_2
[33] www.edana.org/docs/default-source/international-standards/femcare-testing-guidelines-final.pdf?sfvrsn=b3f31df6_2
[34] see footnote 14

- In addition, it will be examined whether products with unbleached fluff pulp and unbleached cotton are offered on the market and accepted by consumers.
- The general issue of material efficiency will also be examined.

4 Applicants and Parties Involved

Manufacturers or distributors of final products according to Paragraph 2 shall be eligible for application.

Parties involved in the award process are:
- RAL gGmbH to award the Blue Angel Environmental Label,
- the federal state being home to the applicant's production site,
- Umweltbundesamt (German Environmental Agency) which after the signing of the contract receives all data and documents submitted in applications for the Blue Angel in order to be able to further develop the Basic Award Criteria.

5 Use of the Environmental Label

The use of the Environmental Label by the applicant is governed by a contract on the use of the Environmental Label concluded with RAL gGmbH.

Within the scope of such contract, the applicant undertakes to comply with the requirements under Paragraph 3 while using the Environmental Label.

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until December 31, 2027.
They shall be extended by periods of one year each, unless terminated in writing by March 31, 2027 or March 31 of the respective year of extension.
After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

The applicant (manufacturer) shall be entitled to apply to RAL gGmbH for an extension of the right to use the ecolabel on the product entitled to the label if it is to be marketed under another brand/trade name and/or other marketing organisations.

The Contract on the Use of the Environmental Label shall specify:
- Applicant (manufacturer/distributor)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

Appendix A Carcinogenic aromatic amines

Table 4: Azo dyes – list of aromatic amines

Carcinogenic aromatic amines	**CAS no.**
biphenyl-4-ylamine / 4-aminobiphenyl / xenylamine	92-67-1
benzidine	92-87-5
4-chloro-o-toluidine	95-69-2
2-naphthylamine	91-59-8
o-aminoazotoluene / 4-amino-2',3-dimethylazobenzene / 4-o-tolylazo-o-toluidine	97-56-3
5-nitro-o-toluidine	99-55-8
4-chloroaniline	106-47-8
4-methoxy-m-phenylenediamine	615-05-4
4,4'-methylenedianiline / 4,4'-diaminodiphenylmethane	101-77-9
3,3'-dichlorobenzidine / 3,3'-dichlorobiphenyl-4,4'-ylenediamine	91-94-1
3,3'-dimethoxybenzidine / o-dianisidine	119-90-4
3,3'-dimethylbenzidine / 4,4'-bi-o-toluidine	119-93-7
4,4'-methylenedi-o-toluidine	838-88-0
6-methoxy-m-toluidine / p-cresidine	120-71-8
4,4'-methylene-bis-(2-chloro-aniline) / 2,2'-dichloro-4,4'-methylene-dianiline	101-14-4
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
o-toluidine 2-aminotoluene	95-53-4
4-methyl-m-phenylenediamine	95-80-7
2,4,5-trimethylaniline	137-17-7
o-anisidine / 2-methoxyaniline	90-04-0
4-amino azobenzene	60-09-3
2,4-xylidine	95-68-1
2,6-xylidine	87-62-7

Source: REACH Regulation (1907/2006/EC), Annex XVII, Appendix 8

Appendix B Phthalates

Table 5: Phthalates - list of substances

Phthalates	Abbreviation	CAS no.
Di-(2-ethylhexyl)-phthalate	DEHP	117-81-7
Benzylbutylphthalate	BBP	85-68-7
Dibutylphthalate	DBP	84-74-2
Diethylphthalate	DEP	84-66-2
Dimethylphthalate	DMP	131-11-3
Dicyclohexylphthalate	DCHP, DCP	84-61-7
Di-(2-methoxyethyl)phthalate	DMEP	117-82-8
Diethyl phthalate, branched and linear	DHxP	68515-50-4
Di-C6-8 branched and linear alkyphthalates, C7 rich	DIHP	71888-89-6
Di-C7-11 branched alkylphthalates	DHNUP	68515-42-4
Di-n-propylphthalate	DPrP	131-16-8
Di-n-hexylphthalate	DHP, DNHP	84-75-3
Di-n-octylphthalate	DNOP	117-84-0
Di-n-nonylphthalate	DNP	84-76-4
Di-iso-butylphthalate	DIBP	84-69-5
Di-iso-hexylphthalate	DIHxP	71850-09-4
Di-iso-octylphthalate	DIOP	27554-26-3
Di-iso-nonylphthalate	DINP	28553-12-0, 68515-48-0
Di-iso-decylphthalate	DIDP	26761-40-0, 68515-49-1
Di-pentylphthalate (N-,iso-, mixed)	PiPP; DnPP, DPP	131-18-0, 605-50-5
1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters		68515-51-5
1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters		68648-93-1

Source: REACH Regulation (1907/2006/EC)

Appendix C Analysis methods for testing for certain chemical substances in the end product

In accordance with Paragraph 3.3 "Testing for certain chemical substances in the end product", laboratory tests must be carried out for certain substances and substance groups to verify that the products do not contain these pollutants.
Table 3: Requirements for the test objects specifies the test object and requirement in each case.
This appendix includes a list of analysis methods that have been approved for carrying out the measurements. If other test methods are used, these must be stated by the applicant and the equivalence of the test method must be verified (e.g. new version of a testing standard with a different name; description of an in-house method).

Table 6: Accepted test methods

Substance	Test method	Name of the standard
1,3 DCP and 3 MCPD	BVL B 80.56-2 revision: 2004-06	Testing of consumer goods – determining 1,3-dichloro-2-propanol and 3-monochloro-1,2-propandiol in water extracts from paper, paperboard and cardboard
	DIN 645	Paper and board intended to come into contact with foodstuffs; preparation of a cold water extract
Chlorophenols	DIN EN ISO 17070	Leather - Chemical tests - Determination of tetrachlorophenol-, trichlorophenol-, dichlorophenol-, monochlorophenol-isomers and pentachlorophenol content
DMAc & DMF	DIN 54439	Textiles - Methods for the determination of N,N-dimethylacetamide (DMAc) and N,N-dimethylformamide (DMF) in man-made fibres of polyacrylonitrile, polyurethane and aromatic polyamide fibres
Formaldehyde	EN ISO 14184-1	Textiles - Determination of formaldehyde - Part 1: Free and hydrolysed formaldehyde (water extraction method)
	EN 1541	Paper and board intended to come into contact with foodstuffs - Determination of formaldehyde in an aqueous extract
Glyoxal	DIN 54603	Testing of paper, paperboard and board - Determination of glyoxal content
Carcinogenic aromatic amines	DIN EN 14362-1	Textiles - Methods for determination of certain aromatic amines derived from azo colourants - Part 1: Detection of the use of certain azo colourants accessible with and without extracting the fibres
	DIN EN 14362-2	Textiles - Methods for determination of certain aromatic amines derived from azo colourants - Part 2: Detection of the use of certain azo colorants accessible by extracting the fibres
	DIN EN 14362-3	Textiles - Methods for determination of certain aromatic amines derived from azo colourants - Part 3: Detection of the use of certain azo colourants, which may release 4-aminoazobenzene

Substance	Test method	Name of the standard
Nonylphenol	DIN EN ISO 18857-1	(ISO 14362-3:2017); German version EN ISO 14362-3:2017 Water quality - Determination of selected alkylphenols - Part 1: Method for non-filtered samples using liquid-liquid extraction and gas chromatography with mass selective detection
PAH	AfPS GS 2019:01 PAK	Product Safety Commission (AfPS) Testing and assessment of polycyclic aromatic hydrocarbons (PAHs) in the course of awarding the GS mark – specification according to § 21 (1) No. 3 ProdSG -
Phthalates	DIN EN ISO 6427	Plastics - Determination of matter extractable by organic solvents (conventional methods)
PCB	BVL B 80.56-1	Analysis of consumer goods – determination of PCB in paper and cardboard (Untersuchung von Bedarfsgegenständen - Bestimmung von PCB in Papier und Pappe)
Heavy metals	DIN EN 16711-2	Textiles - Determination of metal content - Part 2: Determination of metals extracted by acidic artificial perspiration solution; German version EN 16711-2:2015
Resistance to saliva and perspiration	ISO 105-E01	Textiles - Tests for colour fastness - Part E01: Colour fastness to water
	ISO 105-E04	Textiles - Tests for colour fastness - Part E04: Colour fastness to perspiration
	DIN 53160 Part 1	Determining the colour fastness of consumer goods - Part 1: Test with artificial saliva
	DIN 53160 Part 2	Determining the colour fastness of consumer goods - Part 2: Test with artificial sweat
	BVL B 82.10-1	Analysis of commodity goods - Testing of coloured children's toys with respect to their resistance to saliva and perspiration (adoption of the German standard DIN 53160 with the same name, edition June 1974)
Organotin compounds	NWSP 351.0.R0 (15)	Nonwovens Standard Procedures NWSP 351.0.R0 (15) Determination of Ethanol- Extractable Organotin Species in Absorbent Hygiene Products and Materials; Absorbent Hygiene Products – Organotin l
	DIN SPEC 91179	Footwear - Critical substances potentially present in footwear and footwear components - Determination of organotin compounds in footwear materials (ISO/TS 16179:2012)

Appendix D Measurement of emissions to waste water

Measurement of emissions to waste water must be carried out on unfiltered and unsettled samples, either after preparation at the production plant or after preparation at an urban waste water treatment plant.

The measurements must be carried out over a production period of 12 months. The frequency of the measurements must be at least monthly (once a month). In the case of new or renovated production plants, the measurements must be based on at least 45 consecutive days of continuous plant operation. The measurements must be representative for the relevant periods.

Accepted test methods include:

- COD: ISO 6060, ISO 15705, NS 4748, SFS 3020 SFS 5504, SS 028142, DIN 38409 part 41, NFT 90101, ASTM D 1252 83, EPA SM 5220D or HACH 8000
- Total N: EN ISO 11732, EN 10304-2, EN ISO 13395, SFS 5505, SS 0280101
- Total P: ISO 6878, SS 028102, SFS 3026, NS 4725, EN 1189:1993, SM4500, APAT IRSA CNR 4110 or Dr Lange LCK 349
- An equivalent test method whose scope and requirement standards is equivalent to one of the named national and international standards. The equivalence of the certification system must be confirmed by an independent environmental verifier.
- Alternatively, individual verifications in accordance with the criteria and verification requirements of one of the named test methods may be presented if an equivalent level of protection can be achieved. The equivalence of the individual verifications must be confirmed by an independent environmental verifier.

Appendix E Measurements of emissions to air

The measurements of the emissions to air are carried out over a production period of 12 months. Unless the regulatory requirements at the site of the fluff pulp production prohibit such measurements, measurements of the emissions to air must be completed at least every six months in addition to any measurements stipulated in the regulatory requirements. Written verification must be provided if the production site for the fluff pulp is exempt from this requirement for six monthly measurements. Emissions associated with the generation of electrical energy do not need to be taken into account. The S-emissions associated with the generation of heating energy from oil, coal and other external fuels with known S-contents can be measured or calculated and must be taken into account. In the case of new or renovated production plants, the measurements must be based on at least 45 consecutive days of continuous plant operation. The measurements must be representative for the relevant periods.

Accepted test methods include:

- Gaseous sulphur compounds: NS 4859, SFS 5265, SS 028421, EPA 8, EPA 16A
- NOx: ISO 11564, ISO 10849, EN 14792, SS 028425, EPA 7E
- Dust: EN 13284-1, SFS 3866
- An equivalent test method whose scope and requirement standards is equivalent to one of the named national and international standards. The equivalence of the certification system must be confirmed by an independent environmental verifier.

Alternatively, individual verifications in accordance with the criteria and verification requirements of one of the named test methods may be presented if an equivalent level of protection can be achieved. The equivalence of the individual verifications must be confirmed by an independent environmental verifier.

Appendix F Changes to the product (during the term of the contract)

The following procedure is designed to ensure that all new materials are taken into account in the pollutant tests and also to allow already tested materials to be flexibly used in the products.

A test report for the product composition defined in Annex 2 must be submitted for every new application. Providing a link to a similar, already tested product is not permitted.

Changes to the materials used in the product can be accepted during the term of the contract if:

a) The replacement material has already been tested in a product with the same design and accounts for the same proportion of the total mass of the product (tolerance of +/- 5%).

   In this case, the licence holder must register the new composition of the product in Annex 2, highlight the changes and state in which of its products this replacement material was already tested.

b) All of the required verifications have been submitted for the new material and the product with the new material composition.

   In this case, the licence holder must register the new composition of the product in Annex 2, highlight the changes and submit all of the required compliance verifications for Paragraphs 3.1 – 3.11.

   Test reports for the end product must be submitted when:
   - *a new material that accounts for more than 5% of the total mass of the end product has been added.*
   - *up to 3 materials that account for ≤ 5% (in total) of the total mass of the end product have been added.*

   A two-stage process is possible. After registering the change and receiving approval for the use of the material following an examination of the documents by RAL, the test reports can be submitted at a later date within a period of 5 months.

RAL gGmbH reserves the right to invoice the additional costs for examining the new materials that have been subsequently registered by the applicant in accordance with the current schedule of fees.