The German Ecolabel

BLUE ANGEL

Printing and publication paper made primarily from recovered paper

DE-UZ 72

Basic Award Criteria

Edition January 2026

Version 2

The Environmental Label is supported by the following four institutions:

Federal Ministry
for the Environment, Climate Action,
Nature Conservation and Nuclear Safety

The Federal Ministry for the Environment is the owner of the label, defines the fundamental guidelines for the award of the Blue Angel ecolabel and appoints the Environmental Label Jury.

Umwelt Bundesamt

The German Environment Agency with its specialist department for "Ecodesign, Eco-Labelling and Environmentally friendly Procurement" acts as the office of the Blue Angel ecolabel. It develops the technical criteria including the required compliance verifications in cooperation with relevant interest groups.

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, churches, young people and the German federal states.

RAL gGmbH

RAL gGmbH is the awarding body for the environmental label. It examines the applications submitted by companies for the use of the Blue Angel ecolabel and concludes the "Contracts on the Use of the Environmental Label". It also monitors correct use of the ecolabel.

Please use the following format when adding citations:
German Environment Agency (2026): Blue Angel ecolabel – Title of the Basic Award Criteria (DE-UZ 72). Edition January 2026, Version 2. RAL gGmbH (Publisher). Bonn. Available online at: www.blauer-engel.de/uz72 (accessed on x/y/20xy).

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Edition January 2026 (New edition), Version 2 (03/2026): term of validity until 31/12/2030
Changes compared to the previous versions can be found in Appendix G.

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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, the German Environment Agency and considering the results of hearings held with relevant interest groups conducted by RAL gGmbH, the Environmental Label Jury has set up these criteria for the award of the ecolabel (Basic Award Criteria). RAL gGmbH has been tasked with awarding the ecolabel.
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 ecolabel 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 these conditions.

1.2 Background

The use of a high proportion of recovered paper in the production of printing and publication paper contributes to the preservation of resources, especially ecosystems such as forests, and thus helps to protect species and the climate. It also reduces the amount of waste, especially when using recovered paper from household and commercial collections. In a comparison of their impact on ecological systems, those paper products made from recovered paper perform significantly better in terms of their use of resources, waste water load and water and energy consumption than paper products that are made primarily from virgin fibres – when the products have comparable performance characteristics.

In Germany, the average consumption of semi-finished paper products and finished paper products per capita after deducting export surpluses is approximately 190 kg of paper, paperboard and cardboard[1]. This figure also includes consumption outside of the home, such as in commerce, media and administration. According to a recent study conducted by INTECUS GmbH in 2019 on behalf of the German Paper Industry Association, a total of between 95 and 105 kg of paper is consumed per person in German households.

The proportion of recovered paper used in the German paper industry is increasing continuously. It stood at 49% in 1990 but had already risen to 84% in 2024.[2] A significantly higher proportion of recovered paper is also being used for graphic paper. According to statistics from the German Paper Industry Association, the proportion of recovered paper used for graphic paper had risen from 33 percent in 1995 to 60 percent in 2024. The collection and sorting of recovered paper are important prerequisites for making the recovered paper available to the paper industry. This process involves removing non-paper substances from the collected materials and then sorting the paper into defined grades of recovered paper (according to DIN EN 643). The Blue Angel promotes printing and publication paper made primarily from recovered paper in its criteria (>80 %).

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1 Study 18-11-60 on paper consumption per capita in the Federal Republic of Germany, INTECUS GmbH Dresden, Jörg Wagner, commissioned by the German Paper Industry Association (Verband Deutscher Papierfabriken e.V.), May 2019

2 DIE PAPIERINDUSTRIE e.V. 2025

If some virgin fibres sourced from wood are used in the production of printing and publication paper to achieve certain mechanical properties for the printing process or to recycle particularly low grades of recovered paper, it is imperative from an ecological viewpoint that the wood is sourced from certified, sustainably managed forests and forestry companies with high ecological standards. Harvesting timber from forests that are particularly worthy of protection e.g. tropical or boreal forests is not acceptable.

In Germany, three forest certification systems have become established. The "Programme for the Endorsement of Forest Certification Schemes" (PEFC) is the system with the largest certified area, covering around 7.6 million hectares out of a total of 11.4 million hectares of forests in Germany. The system operated by the "Forest Stewardship Council®" (FSC) currently certifies an area of around 1.43 million hectares, while around 54,000 hectares are certified according to the criteria for ecological forest management from Naturland. The latter are also FSC certified. Compliance with the PEFC criteria largely corresponds to the minimum requirements found in the applicable legal regulations in Germany or the Helsinki and Vienna criteria from FOREST EUROPE. By certifying their forests in accordance with especially demanding certification systems such as the FSC or Naturland, forest owners indicate their willingness to comply with requirements for sustainability and nature and species protection that go far beyond the legally prescribed standards[3]. All three systems are recognised by the Blue Angel for certifying the proportion of virgin fibres.

The Blue Angel restricts the addition of critical production aids and paper refining agents in its criteria in order to, on the one hand, minimise the pollution of waste water and, on the other hand, reduce the pollutant load in the paper. For example, the use of optical brighteners and halogenated bleaching agents is prohibited except for in a few exceptional cases. The Basic Award Criteria have also set requirements on waste water emissions from paper production since 2020. As part of the revision in 2025, further production-related requirements have now been placed on the emissions to air, energy consumption and waste management.

1.3 Objectives of the Environmental Label

The requirements in these Basic Award Criteria are intended, in particular, to promote the use of lower grades of recovered paper and prevent the use of substances that are not required for technical reasons during production. The use of recycled paper that has been awarded the Blue Angel makes an important contribution to the preservation of forests and thus also to the protection of species and the climate.

[3] UBA: Umweltschutz, Wald und nachhaltige Holznutzung in Deutschland (Environmental protection, forests and the sustainable use of Wood in Germany) https://www.umweltbundesamt.de/publikationen/umweltschutz-wald-nachhaltige-holznutzung-2021

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

1.4 Definitions

Recovered paper according to DIN 6730 is the term used for paper, paperboard and cardboard, based on natural fibres, that is suitable for recycling and consists of:

- paper, paperboard and cardboard in any form,
- products primarily made of paper, paperboard and cardboard, which contain other components that cannot be separated using dry sorting, such as coatings and composite materials, spiral bindings, etc.

Recovered paper is also used as the umbrella term for paper, cardboard and paperboard that is collected after use or processing. Refer to DIN EN 643 for specifications about the different grades of recovered paper.

Post-consumer recovered paper describes material generated by households or by commercial, industrial and institutional facilities in their role as end users of the goods or service which can no longer be used for its intended purpose. This includes returns of material from the distribution chain. It does not include the reuse of virgin fibre scraps that are generated during a process and then fed back into the same process from which they were generated (mill broke/paper machine scrap – either self-generated or purchased scraps). On the other hand, the use of scraps from production processes (either self-generated or purchased scraps) can be included when calculating the proportion of recycled fibres in the product if the company has a delivery note according to EN 643 for these scrap fibres.

LWC paper (lightweight coated paper) is lightweight roll printing paper, coated on both sides, containing either wood or recovered paper and with a basis weight of > 75g/m².

Recycled paper describes paper and cardboard produced using fibres sourced 100% from recovered paper (secondary fibres), whereby any scrap fibres used in the production process may only be sourced from a production plant for recycled paper.

Newsprint paper is machine-smooth or calendered paper with a high wood content, often produced from deinked recovered paper, and with a basis weight of between 40 and 65 g/m². The paper is characterised by its good printability.

2 Scope

These Basic Award Criteria apply to printing and publication paper up to a maximum weight of 75 g/m^2 and for the grades of paper listed in Appendix B according to the grade statistics for "Graphic Paper" from the German Paper Industry Association (DIE PAPIERINDUSTRIE e. V.).

3 Requirements

3.1 Use of fibrous raw materials and grades of recovered paper

A minimum of 800 kg of post-consumer recovered paper per 1000 kg of new paper (air dry) must be used in the production of the paper.
Refer to DIN EN 643 for specifications about the different grades of recovered paper.
The proportion of virgin fibres added to the product must not exceed a maximum of 250 kg per 1000 kg of new paper (air dry).
If virgin fibres are used, they must comply with the requirements in Paragraphs **Fehler! Verweisquelle konnte nicht gefunden werden.**, 3.17 and 3.18.
At least 80 % of the recovered paper used for the product must be sourced from **group 1** of the grades of recovered paper.

Compliance verification

The applicant shall characterise the paper in Annex 2 by stating the sort key, format, weight, surface treatment (coated or uncoated), whiteness and opacity.

The applicant shall state the average percentage of the recovered paper grades from groups 1, 2, 3, 4 and 5 used in the product in Annex 2 to the contract and declare compliance with the requirement in Paragraph 3.1.
The applicant shall also state the percentages of the individual grades 2.05.00, 2.05.01, 2.06.00, 2.06.01 and 5.09.00.

The correctness of the data provided in Annex 2 to the contract shall be verified on request once a year in accordance with Annex 6 to the Basic Award Criteria by:

- *a certification body for ISO 14001 accredited by the German Accreditation Body (DAkkS) or an EA/IAF-recognised 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 accredited FSC/PEFC certification body or an accredited FSC or PEFC certifier with valid accreditation or*
- *an expert recognised by the UBA in the areas of fibrous raw materials, grades of recovered paper and the recycling of recovered paper.*

3.2 Diisopropylnaphthalene (DIPN)

The content of diisopropylnaphthalene (DIPN) in paper and cardboard should be kept as low as technically possible. It is thus generally not permitted to use the grades of recovered paper 2.05.00 ordinary sorted office paper, 2.05.01 sorted office paper, 2.06.00 ordinary sorted coloured letters, 2.06.01 sorted coloured letters and 5.09.00 "carbonless copy paper (NCR)".
Alternatively, grades of recovered paper containing DIPN (2.05.00, 2.05.01, 2.06.00, 2.06.01 and 5.09.00) may be used if an efficient technical system (e.g. deinking) exists that largely removes the DIPN from the fibre cycle and the DIPN content in the finished paper does not exceed a maximum of 50 mg/kg.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract.
If the grades of recovered paper 2.05.00, 2.05.01, 2.06.00, 2.06.01 and 5.09.00 have been used, the applicant shall state the maximum DIPN content in the finished product in Annex 2 to the contract and submit a test report from an independent testing institution accredited according to DIN EN ISO/IEC 17025 or a testing institution recognised by the UBA.
The DIPN content shall be determined ***once a year*** *in accordance with EN 14719 (DIPN in acetone extract).*

The applicant shall submit a product sample.

3.3 Colour developers from thermal paper

The use of recovered paper could transfer colour developers from thermal paper to the finished paper. Therefore, the content of bisphenol A (BPA), bisphenol S (BOS) and N-(p-toluolsulfonyl)-N'-(3-(p-toluolsulfonyloxy)phenyl)urea[4] in the finished paper must be determined in a cold water extract once a year.

Depending on the type of product, the content of BPA (CAS no. 80-05-7), BPS (CAS no. 80-09-1) and N-(p-toluolsulfonyl)-N'-(3-(p-toluolsulfonyloxy)phenyl)urea (CAS no. 232938-43-1) must be determined in a cold water extract prepared according to DIN EN 645 using liquid chromatography and UV/fluorescence detection or MS detection in accordance with CEN/TS 17497.

Compliance verification

The applicant shall confirm in Annex 1 to the contract that a test report from an independent testing institution accredited according to DIN EN ISO/IEC 17025 or a testing institution recognised by the UBA will be submitted once a year for statistical purposes and shall state the measurement results in Annex 2. If multiple products are produced based on the same composition of recovered paper (Annex 2), it is sufficient to submit an analysis of a sample of the paper once a year.

[4] N-(p-toluolsulfonyl)-N'-(3-(p-toluolsulfonyloxy)phenyl)urea (also commonly known under the trade name Pergafast 201) has not been proven to be an endocrine disrupter but is considered a not readily biodegradable substance with a high toxicity for water organisms.

3.4 General exclusion of substances with certain properties

No substances may be added as colourants, coating materials, production aids and paper refining agents that have the following properties:

a) It is prohibited to add substances of very high concern (SVHC) that have been identified as being particularly alarming in accordance with Article 57, Paragraph 1 of Regulation (EC) No 1907/2006 (REACH) and added to the so-called "candidate list" according to Article 59, Paragraph 1 of the same regulation.

b) No substances may be added to the product that

- according to the criteria of Regulation (EC) No 1272/2008 (CLP) are classified with the following H Phrases named in Table 1 or which meet the criteria for such classification.
- are classified as carcinogenic, mutagenic or reprotoxic substances in the currently valid version of TRGS 905[5].

Table 1: H Phrases according to the CLP Regulation

H Phrases according to the CLP Regulation	Wording
H340	May cause genetic defects.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H350i	May cause cancer if inhaled.
H351	Suspected of causing cancer.
H360F	May damage fertility.
H360D	May damage the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H361f	Suspected of damaging fertility.
H361d	Suspected of damaging the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract.
The applicant shall verify compliance with the requirement by listing the colourants, coating materials, production aids and paper refining agents used and submitting declarations from the suppliers of the colourants, coating materials, production aids and paper refining agents in accordance with Annex 3 to the contract pursuant to DE-UZ 14a. If requested to do so by RAL gGmbH, the applicant shall submit the relevant safety data sheets.

[5] http://www.baua.de/nn_16812/de/Themen-von -A-Z/Gefahrstoffe/TRGS/pdf/TRGS-905.pdf

3.5 Further requirements for production aids and paper refining agents

Only those production aids and paper refining agents that are listed in Recommendation XXXVI from the BfR (Federal Institute of Risk Assessment) for "Paper and board for food contact"[6] (positive list) in sections B (production aids) and C (special paper refining agents) may be added to the product. The maximum quantities and concentrations stated in this list must be observed. No production aids containing glyoxal may be used to manufacture the recycled paper.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract.
The applicant shall verify compliance with the requirement by listing the production aids and paper refining agents used and submitting declarations from the suppliers of the production aids and paper refining agents in accordance with Annex 3 to the contract pursuant to DE-UZ 14a. If requested to do so by RAL gGmbH, the applicant shall submit the relevant safety data sheets.

3.6 Bleaching and complexing agents

The recovered paper must be processed without the use of chlorine, halogenated bleaching agents and not readily biodegradable complexing agents such as e.g. ehylenediaminetetraacetic acid (EDTA) and diethylenetriaminepentaacetic acid (DTPA).

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and also state the bleaching chemicals and complexing agents used in Annex 3.

3.7 Biocides

In the production of the recycled paper, only those slimicides (substances in product type 12) and preservatives for fibres (substances in product type 9) that have been approved in accordance with the Biocidal Products Regulation (EU) No. 528/2012 (EU list of approved active substances) or are still being examined as a notified existing active substance for the relevant type of biocides as part of the EU work programme for the systematic examination of all existing active substances may be used.

Accordingly, it is only permitted to use those biocidal products classified in product types 9 and 12 that have been explicitly approved for the desired application.
For a transitional period, biocidal products that contain notified existing active substances of product types 9 and 12 that are still being examined as part of the EU examination process can also be used without approval if they have been registered in accordance with the German ordinance on the notification of biocidal products pursuant to the German Chemicals Act (Biocide Notification Ordinance – ChemBiozidMeldeV) and can thus be made available on the market.

[6] http://bfr.ble.de/kse/faces/DBEmpfehlung.jsp

Until the approval requirements for the biocidal products containing notified existing active substances come into force, however, only those substances that are also listed in Recommendation XXXVI from the BfR are permitted.
In addition, the biocidal products used in the product must not contain any substances that have been considered as candidates for substitution according to Article 10 of the EU Biocidal Products Regulation 528/2012.

It is also possible that production aids and paper refining agents used for the production of the recycled paper contain biocidal products in product type 6 (preservatives for products during storage) that have been made available on the market. Residual content of these biocidal products will be accepted.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract, submit the safety data sheet and state which biocidal substances from which product type have been used with their IUPAC names and CAS numbers, as well as the quantities used per kilogram of dry pulp in Annex 2.

3.8 Optical brighteners

The use of optical brighteners is not permitted.

An exception applies for the production of SC and LWC paper (according to Appendix B). The following optical brighteners may be added to these products:

- C.I.220, benzenesulfonic acid, 2,2'-(1,2-ethenediyl) bis[5[4-[bis(2-hydroxyethyl) amino]-6-[(4-sulfophenyl)amino]- 1,3,5-triazin-2-yl]amino]-, tetra sodium salt (CAS no. 16470-24-9);
- C.I. 113 or C.I. 28 disodium salt 4,4'-bis[6-anilino-4-[bis(2-hydroxyethyl)amino]-1,3,5-triazin-2-yl]amino]stilbene-2,2'-disulphonate; sulfonated stilbene derivatives may be used up to a maximum level of 0.3%;
- Tetrasodium 4,4'-{ethene-1,2-diylbis[(3-sulfonato-4,1-phenylene)imino{6-[bis(2-hydroxyethyl)amino]-1,3,5-triazine-4,2-diyl}imino]}dibenzoate (CAS no. 32257-57-1) and isomeric mixtures of Tetrasodium 4,4'-{ethene-1,2-diylbis[(3-sulfonato-4,1-phenylene)-imino{6-[bis(2-hydroxyethyl)amino]-1,3,5-triazine-4,2-diyl}imino]}dibenzoate (CAS no. 32257-57-1), Tetrasodium 2,2'-{ethene-1,2-diylbis[(3-sulfonatobenzene-4,1-diyl)imino{6-[bis(2-hydroxyethyl)amino]-1,3,5-triazine-4,2-diyl}imino]}dibenzoate (CAS no. 158256-89-4) and Tetrasodium 2-({4-[bis(2-hydroxyethyl)amino]-6-[(4-{2-[4-({4-[bis(2-hydroxyethyl)-amino]-6-[(4-carboxylatophenyl)amino]-1,3,5-triazin-2-yl}amino)-2-sulfonatophenyl]-ethenyl}-3-sulfonatophenyl)amino]-1,3,5-triazin-2-yl}amino)benzoate (CAS no. 1271742-13-2);
- C.I.397 (benzenesulfonic acid, 2,2`-(1,2-ethenediyl)bis[5-amino-, reaction products with aniline, diethanolamine, ethanolamine and 2,4,6-trichloro-1,3,5-triazine, sodium salts, 2-(Dimethylamino) ethanol compounds (CAS no. 1627851-12-0).

Compliance verification

The applicant shall state the grade of manufactured paper based on the grade statistics (according to Appendix B) in Annex 2 to the contract and name the optical brighteners used.
In addition, the applicant shall verify compliance with the requirement by submitting a test report from an independent testing institute certifying compliance with the bleeding test according to DIN EN 648 or DIN EN 646 and achievement of valuation level 5. Alternatively, the applicant shall submit a declaration from the manufacturer of the optical brightener as Annex 3 to the contract stating that at least 95% of the optical brighteners cling to the substrate to be brightened.

3.9 Azo dyes and pigments in colourants

No azo dyes or pigments may be added in colourants that can cleave into one of the amines stated in Regulation (EC) No. 1907/2006, Annex XVII, No. 43, Appendix 8 or 9, or in TRGS 614[7] (see Appendix C).

Compliance verification

The applicant shall verify compliance with the requirement by submitting a declaration from the colourant supplier in Annex 3 to the contract pursuant to DE-UZ 72.

3.10 Mercury, lead, cadmium or chromium VI compounds in colourants

It is not permitted to add any colourants (pigments or dyes) containing mercury, lead, cadmium or chromium (VI) compounds as constituent ingredients.

Compliance verification

The applicant shall verify compliance with the requirement by submitting a declaration from the colourant supplier in Annex 3 to the contract pursuant to DE-UZ 72.

3.11 Substitution of mineral oil-based additives and base oils

No mineral oil-based additives or base oils that contain aromatic hydrocarbons (with ≥ 10 carbon atoms) as a component may be added during the production of the recycled paper. In the case of aliphatic hydrocarbons, only those substances with a chain length of C10 to C20 may be used. Plant-based base oils designed for use as a foodstuff or as a material that comes into contact with foodstuffs are exempt from this requirement. Plant-based substitutes for mineral oil should be free of genetic engineering and sourced from sustainable cultivation[8].

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[7] https://www.baua.de/DE/Angebote/Rechtstexte-und-Technische-Regeln/Regelwerk/TRGS/TRGS-614.html

[8] The following certification systems are considered suitable for renewable raw materials: RSPO (Roundtable on Sustainable Palmoil), ISCC+ (International Sustainable & Carbon Certification), RSB (Roundtable on Sustainable Biomaterial), Roundtable Responsible Soy (RTRS) or a comparable certification system whose scope and requirement standards are equivalent to one of the named certification systems.

Compliance verification

The applicant shall state the additive used in the product in Annex 3.
The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit Annex 3 to the contract. If plant-based substitutes have been used, the applicant shall state in Annex 3 which substitutes (which plant-based raw material) are added and where they are sourced.

3.12 Waste water

The following requirements apply with respect to waste water:

3.12.1 Direct discharge

In the production of the paper, including the relevant share of the pulp production (wood pulp or TMP), the emission limits for the waste water load that are listed by the EU Commission in the "Best Available Techniques (BAT) Reference Document for the Production of Pulp, Paper and Board PP BREF" must be complied with by direct dischargers. These limits have been implemented in Germany in Appendix 28 of the German Waste Water Ordinance. The values stated in Table 2 go above and beyond the statutory requirements in some cases.

Table 2: Maximum limits for the average annual emission parameters (waste water) in the paper production process

Parameter	**Maximum limit for waste water emissions (average annual value as a load or concentration)**
Volumetric flow rate of waste water[9]	15 m3/Adt
COD	3 kg/Adt
BSB5	0.15 kg/Adt or 25 mg/l
AOX	< 0.01 kg/Adt
Total N (inorganic + organic N) (TNb)	0.07 kg/Adt or 15 mg/l
Total P	0.008 kg/Adt or 1.2 mg/l

Adt = air dried ton

TNb = total nitrogen bound. This parameter defines the total pollution of water by nitrogen compounds, which can appear in the form of e.g. ammonia, nitrites, nitrates or organic nitrogen compounds. This parameter must be determined using the method described in DIN EN ISO 20236.

3.12.2 Indirect discharge

Indirect dischargers must declare compliance with the emission limits for the parameters stated in Table 2 after treatment.

[9] Exemption for factories with special circumstances (e.g.: frequent changing of the type of paper, annual average of >=5 per day): When calculating the specific volume of waste water per day, any days without production and days with a production volume < 50% of normal production should not be included in the calculation of the annual average.

Compliance verification

*If the manufacturer of the recycled paper is a **direct discharger**, he/she shall declare compliance with the emission limits according to Table 2 in Annex 1 to the contract and state the measured emission values in Annex 4 to the contract.*

*If the manufacturer of the recycled paper is an **indirect discharger**, he/she shall declare compliance with the limit values in Annex 1 to the contract pursuant to DE-UZ 14a.*
The volumetric flow rate of waste water and the AOX value at the mixing location must be stated in Annex 2.
The manufacturer shall submit a confirmation from the operator of the waste water treatment plant that provided the emission values for the other parameters in the downstream waste water treatment plant as Annex 5 to the contract (mixed values for all dischargers). If the operator of the waste water treatment plant refuses to submit a declaration in accordance with Annex 5, the applicant can submit Annex 5 based on their own calculations. If requested by RAL gGmbH, the calculations must be submitted.

Direct and indirect dischargers:
The correctness of the data on the waste water provided in Annexes 2, 4 and 5 to the contract shall be verified for both direct dischargers and indirect dischargers at the time of application and then once a year in accordance with Annex 6 to the Basic Award Criteria by:

- a certification body for ISO 14001 accredited by the German Accreditation Body (DAkkS) or an EA/IAF-recognised 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 accredited FSC/PEFC certification body or an accredited FSC/PEFC certifier with valid accreditation or
- an expert recognised by the UBA in the areas of fibrous raw materials, grades of recovered paper, the recycling of recovered paper and waste water treatment.

If there is a closed water circuit (no waste water), Annex 4 (direct discharger of waste water) and Annex 5 (operator of the waste water treatment plant) are not required.

3.13 Emissions to air

Requirements are placed on the emissions to air in the production of recycled paper, including the relevant share of the pulp production (wood pulp or TMP). The emissions to air include both the emissions from the plants generating the steam needed for the production of the paper and also the emissions from the plants used to prepare the recovered paper as well as the paper machine. Emissions during production of the fibrous raw materials (DIP) also have to be taken into account. The limits listed here in Table 3 are based on the EU criteria for the award of the EU Ecolabel for graphic paper (Annex I) in the Official Journal of the European Union of 17 January 2019.

The applicant must determine the levels of the following pollutants in the emissions to air at the paper factory and should[10] comply with the limits stated in Table 3 (measurement specifications, see Appendix D "Measurement of emissions to air in the production of paper"):

Table 3: Maximum limits for the average annual emission parameters (emissions to air) in the paper production process (average annual value (AAV) in kg/air dry tonne)

	Sulphur (S) as AAV	**NOx as AAV**
Preparation of the recovered paper	0.20 kg/t	0.25 kg/t
Production of recycled paper	0.30 kg/t	0.50 kg/t

Compliance verification

The applicant shall declare compliance with the requirement according to Table 3 in Annex 1 to the contract and submit reports and 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 requirements in the measurement specifications in Appendix D "Measurement of emissions to air in the production of paper" and a new test report must be submitted ***every 3 years****. 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[11]. 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). It is recommended that an auditor confirms the measurements of the emissions to air, as is the case for the verifications in Paragraphs 3.1 and 3.12.*
The measurements of the sulphur emissions in the air should include oxidised and reduced sulphur. The sulphur emissions associated with the generation of heating energy from gas, oil, coal and other external fuels with known sulphur contents can be calculated instead of measured and must also be taken into account.

3.14 Waste

To promote the avoidance of waste and in the spirit of a circular economy, the waste generated during the production process must be minimised. The following waste materials can be generated in the production of the paper: Fibrous sludge and sludge from the treatment of the process water. The following waste materials are also generated during the production of paper from recovered paper: Residues from the treatment of the recovered paper and deinking sludge. The remaining waste materials should be recycled as far as possible.

[10] This is considered a "should" requirement and not a "must" requirement, i.e. the measurements must be carried out but it is not necessary to comply with the limits.
[11] http://www.oecd.org/chemicalsafety/testing/oecdseriesonprinciplesofgoodlaboratorypracticeglpandcompliancemonitoring.htm

In the production of paper, the following waste material limits, including sludge from the treatment of the process water, given as an annual average figure as a dry mass, must not be exceeded[12]:
Paper factory with deinking: 250 kg/t of product
Paper factory without deinking: 135 kg/t of product.

These limits were derived from the data collected for the BAT reference document for the paper and pulp industry (PP BREF[13], Section 6.2.1., Table 6.1).

Compliance verification

The manufacturer of the recycled paper shall declare compliance with the stated values and state the amount of waste recorded in Annex 2.

3.15 Energy consumption and origin of the electricity

The paper industry is one of the six most energy-intensive industries in Germany. The Blue Angel also sets incentives in its Basic Award Criteria for companies to further reduce the consumption of heat and electricity at the production sites. For the production of paper, including the relevant share of the pulp production (wood pulp or TMP), the limits for the consumption of electricity and process heat in the following table must not be exceeded as an annual average:

If deinked recovered paper (DIP) or pulp is purchased as a semi-finished product, the energy consumption for additional drying and transport processes must also be taken into account.
The sum of the process heat and electrical power is permitted to exceed the limit by a total of 10%.

In addition, the applicant must state the energy mix used at the plant based on the type and origin of the energy. The consumed electricity should be sourced from renewable energies. The applicant must also state when he or she will stop using coal as an energy source, if this has not already occurred.

Table 4: Maximum limits for the consumption of process heat and electricity in the production of paper (annual average value in kWh/t)

	Process heat (including power-to-heat) in kWh/t	**Electrical energy (excluding power-to-heat) in kWh/t**
Paper factory with deinking	1550	900
Paper factory without deinking	1550	600
Paper factory including pulp production	1550	2000

[12] This does not include waste generated in other areas of the company, such as in administration, waste generated during structural changes or any coarse contaminants removed during treatment of the recovered paper (e.g. stones or steel elements).

[13] BREF (Best Available Techniques Reference Document) full version and BAT conclusions in German and English at https://www.umweltbundesamt.de/themen/wirtschaft-konsum/beste-verfuegbare-techniken/sevilla-prozess/bvt-merkblaetter-durchfuehrungsbeschluesse

These limits were derived from the data collected for the BAT reference document for the paper and pulp industry (PP BREF, Section 6.2.1, Table 6.7) and for PTS Munich: Report No. 2 Use of energy saving techniques, for the revision of the BAT reference document for the pulp and paper industry 2009, Table 14, EU Ecolabel criteria for newsprint paper with pulp content).

Compliance verification

The manufacturer of the recycled paper shall declare compliance with the emission values in Table 4 in Annex 1 to the contract pursuant to DE-UZ 72 and state the measured energy consumption values and the measurement period used in Annex 2. In addition, the manufacturer shall state all of the energy sources used, their proportions and origins (own generation/third party generation) and the proportion of green electricity in the electricity consumed (notifications from the energy supply company) and, if relevant, the proportion of self-generated green electricity. If available, the applicant shall submit a transformation plan for the reduction of CO2 emissions.

3.16 Origin of the virgin fibres

It must be possible to verify the origin of the wood for the virgin fibres added to the product. The wood must be sourced from forests that are able to verify that they have been 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. The certification systems from the Forest Stewardship Council® (FSC), the Programme for the Endorsement of Forest Certification Schemes (PEFC) and the Naturland standard will be accepted.
Wood sourced from regional forestry businesses that remain close to nature also helps to avoid long transport routes, which have a negative ecological impact.

Compliance verification

The applicant shall state the manufacturer(s) of the virgin fibres and provide information on the origin of the wood added to the product in Annex 2 to the contract. The applicant shall submit corresponding certificates for the fibres.
The correctness of the data provided in Annex 2 to the contract will be verified once a year in accordance with Annex 6 to the Basic Award Criteria by:

- *a certification body for ISO 14001 accredited by the German Accreditation Body (DAkkS) or an EA/IAF-recognised 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 accredited FSC/PEFC certification body or an accredited FSC or PEFC certifier with valid accreditation or*
- *an expert recognised by the UBA in the areas of fibrous raw materials, grades of recovered paper and the recycling of recovered paper.*

3.17 Requirements for the virgin fibres

Virgin fibres may only be added to products certified according to DE-UZ 72 up to the maximum amount permitted if they are produced without the use of any chlorine, halogenated bleaching agents and optical brighteners.

Compliance verification

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

3.18 Requirements placed on the production of the virgin fibres

3.18.1 Waste water emissions in the production of the pulp

The applicant must determine the levels of the following chemical substances in the emissions to waste water at the pulp plant (measurement specifications, see Appendix E "Measurement of emissions to waste water in the production of the pulp"):

- Chemical oxygen demand (COD) in kg O[14] per air dry tonne[15]
- 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 (NH_4+-N), nitrites (NO_2--N) and nitrates (NO_3--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: $P_{Reference}$ = 0.030 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:

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

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

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

[14] O stands for oxygen
[15] air dry: air dried pulp

The following requirements apply:
For each of the emission points P_COD, P_N and P_P, a value of 1.5 must not be exceed in each case and the sum of the emission points for the emissions to waste water (P_COD, P_N, and P_P) must not exceed a value of 3.0.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit Annex xy (emission values) completed by the producers of the pulp. In addition, the applicant shall enclose the test reports as an annex and submit 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 requirements in the measurement specifications in Appendix E "Measurement of emissions to waste water in the production of the pulp". 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. 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's Testing Laboratory). It is recommended that the wastewater measurements be verified by auditors in the same way as the evidence in sections 3.1 and 3.12.

3.18.2 Emissions to air in the production of the pulp

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 pulp plant (measurement specifications, see Appendix F "Measurement of emissions to air in the production of the pulp"):

- 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 pulp production process: 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:

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

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

The following requirements apply:
For each of the emission points $P_{Sulphur}$ and P_{NOx}, a value of 1.5 must not be exceed in each case and the sum of the emission points for the emissions to air ($P_{Sulphur}$ and P_{NOx}) must not exceed a value of 2.0.

Dust emissions must not exceed the limit value of 0.35 kg dust/air dry tonne.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit Annex xy (emission values) completed by the producers of the pulp. In addition, the applicant shall enclose the test reports as an annex and submit 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 requirements in the measurement specifications in Appendix F "Measurement of emissions to air in the production of the pulp". 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[16]. 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's Testing Laboratory). It is recommended that the exhaust air measurements be verified by auditors in the same way as the evidence in sections 3.1 and 3.12.

3.18.3 Energy consumption in the pulp production process

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

- Electrical energy: ≤1,000 kWh/air dry tonne
- Heating energy: ≤4,000 kWh/air dry tonne

[16] Principles of good laboratory practice are defined in a series of publications by the OECD (Organisation for Economic Co-operation and Development): https://www.oecd-ilibrary.org/environment/oecd-series-on-principles-of-good-laboratory-practice-and-compliance-monitoring_2077785x

a) Electrical energy (electricity):
The electricity consumed in the production of the pulp must be measured over a period of 12 months and stated in relation to the 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 at the treatment plant
- less the electricity consumed for processes not related to the pulp production at the plant

b) Heating energy (fuel):
The heating energy consumed in the production of the pulp must be measured over a period of 12 months and stated in relation to the 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.

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 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 in the pulp production process in the form of an energy statement together with the calculation parameters used. If the applicant does not have their own heat values for the fuels used, the heat values documented in the Nordic ecolabel for paper products (Nordic Swan Ecolabel)[17] may be used.

Compliance verification

The applicant shall state the specific energy consumption (Annex 2) and declare compliance with the requirement in Annex 1 to the contract. In addition, the applicant shall submit an energy statement, which documents the energy consumption over a period of 12 months, the heat

[17] Refer to the latest version of the "Nordic Ecolabelling for Paper Products – Basic Module" (https://www.svanen.se/en/for-companies/criteria-application/paper-modules/; last accessed on 06/05/2024)

values for the relevant fuels used, the annual production of the pulp and the calculation of the specific energy consumption values.

3.19 Outlook

Any future revision of the environmental label will require verifications that renewable raw materials, which are used e.g. for the production of mineral oil-free additives, are obtained from responsible, GMO-free sources that are located in the local region as far as possible and have been tested by a suitable certification system. The extent to which transformation plans to reduce CO_2 emissions are being implemented in industry will also be examined in the next revision.

4 Applicants and Parties Involved

Manufacturers (paper mills) 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.

The compliance verifications submitted by the applicant will be handled with complete confidentiality.

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, 2030.
They shall be extended by periods of one year each, unless terminated in writing by March 31, 2030 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)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

Appendix A Quoted laws and standards, literature

The currently valid versions of the relevant regulations and standards at the time of application apply, unless reference is made to a particular version of the regulation or standard in the criteria.

Directive (EU) 2024/1785 of the European Parliament and of the Council of 24 April 2024 amending Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC on the landfill of waste

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, as well as amending Regulation (EC) No. 1907/2006

Regulation (EU) No. 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products

DIN EN 643 Paper and board - European list of standard grades of paper and board for recycling, version 2014-11

ISO 14001 Environmental management systems - Requirements with guidance for use, version 2015-11

DIN EN ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories, version 2018-03

DIN EN 14719 Pulp, paper and board - Determination of the Diisopropylnaphthalene (DIPN) content by solvent extraction, version 2005-10

DIN EN 645 Paper and board intended to come into contact with foodstuffs; preparation of a cold water extract, version 1994-01

DIN EN 646 Paper and board intended to come into contact with foodstuffs - Determination of colour fastness of dyed paper and board, version 2019-02

DIN EN 648 Paper and board intended to come into contact with foodstuffs - Determination of the fastness of fluorescent whitened paper and board, version 2019-02

DIN CEN/TS 13130-13:2005-05 Materials and articles in contact with foodstuffs - Plastic substances subject to limitation - Part 13: Determination of 2,2-bis(4-hydroxyphenyl)propane (Bisphenol A) in food simulants

DIN EN ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories, version 2018-11

TRGS 905 Directory of carcinogenic, mutagenic or teratogenic substances

TRGS 614 Restrictions on use for azo dyes, which may release aromatic amines classified as carcinogens

DIN EN 12260 Water quality - Determination of nitrogen - Determination of bound nitrogen (TNb), following oxidation to nitrogen oxides, version 2003-12

UBA Forest Paper
https://www.umweltbundesamt.de/sites/default/files/medien/376/publikationen/umweltschutz_wald_und_nachhaltige_holznutzung_in_deutschland_web.pdf

Appendix B Grades of graphic paper

The grades of graphic paper listed below are a selection from the grade statistics published by the German Paper Industry Association (Verband Deutscher Papierfabriken e.V.), version 2025, that are made out of recycled paper and can be awarded the Blue Angel.
As paper made out of secondary fibres/recovered paper is by definition wood-containing paper (irrespective of the grade of recovered paper), any wood-free grades of paper are not listed here because they cannot be awarded the Blue Angel. The composition and the proportions of pulp and cellulose fibre may vary greatly between the different grades of recycled paper.

Press and catalogue paper

Newsprint paper

01 05 05 05 Standard newsprint paper
01 05 10 05 Improved newsprint paper

Non-coated magazine paper (rolls)

01 10 05 05 SC-A rotogravure paper
01 10 10 05 SC-B rotogravure paper
01 10 15 05 SC-A offset
01 10 20 05 SC-B offset

Wood-containing printing and writing paper

Other wood-containing, non-coated paper

01 80 05 05 Wood-containing printing and writing paper, in rolls
01 80 10 05 Wood-containing printing and writing paper, in formats

Coated, wood-containing roll printing paper

01 85 05 06 Wood-containing printing and writing paper, coated on two sides, in rolls, LWC for rotogravure printing
01 85 05 07 Wood-containing printing and writing paper, coated on two sides, in rolls, LWC for offset
01 85 05 11 Wood-containing printing and writing paper, coated on two sides, in rolls, HWC for rotogravure printing
01 85 05 12 Wood-containing printing and writing paper, coated on two sides, in rolls, HWC for offset

Coated, wood-containing format paper

01 85 10 05 Wood-containing printing and writing paper, coated on two sides, in formats, consumption, standard and special coating

Appendix C Dyes and pigments that are not permitted

In accordance with Paragraph 3.9, the azo dyes listed below may not be added.

Azo dyes that may cleave to one of the following aromatic amines (according to Directive (EC) No. 1907/2007, Annex XVII, No. 43)

4-aminobiphenyl	(92-67-1)
benzidine	(92-87-5)
4-chloro-o-toluidine	(95-69-2)
2-naphtylamine	(91-59-8)
o-amino-azotoluene	(97-56-3)
2-Amino-4-nitrotoluene	(99-55-8)
p-chloroaniline	(106-47-8)
2,4-diaminoanisol	(615-05-4)
4,4′-diaminodiphenylmethane	(101-77-9)
3,3′-dichlorobenzidine	(91-94-1)
3,3′-dimethoxybenzidine	(119-90-4)
3,3′-dimethylbenzidine	(119-93-7)
3,3′-dimethyl-4,4′-diaminodiphenylmethane	(838-88-0)
p-cresidine	(120-71-8),
4,4'-methylene-bis-(2-chloro-aniline)	(101-14-4)
4,4′-Oxydianiline	(101-80-4)
4,4′-Thiodianiline	(139-65-1)
o-toluidine	(95-53-4)
2,4-diaminotoluene	(95-80-7)
2,4,5-trimethylaniline	(137-17-7)
4-aminoazobenzene	(60-09-3)
o-anisidine	(90-04-0).
2,4-xylidine	(95-68-1)
2,6-xylidine	(87-62-7)

Appendix D Measurement of emissions to air in the production of the paper

Unless the regulatory requirements at the paper production site prohibit such measurements, measurements of the emissions to air must be completed at least every three years in addition to any measurements stipulated in the regulatory requirements. Written verification must be provided if the production site is exempt from this requirement for annual measurements. (The first measurements submitted should be based on the last official measurements by the regulatory authorities and then new measurements should be submitted every three years). Emissions associated with the generation of electrical energy do not need to be taken into account. The sulphur 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 used to calculate the specific emission data must have been carried out on at least 45 consecutive days. The measurements must be representative for the relevant periods.

The measurement points should be the plants for generating steam (boiler house).

Accepted test methods include:
1. Gaseous sulphur compounds: NS 4859, SFS 5265, SS 028421, EPA 8, EPA 16A, EN 14791
2. NOx: ISO 11564, ISO 10849, EN 14792, SS 028425, EPA 7E
3. 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.
4. 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.
5. ISO 10396:2007 Unless the regulatory requirements at the paper production site prohibit such measurements, measurements of the emissions to air must be completed at least every three years in addition to any measurements stipulated in the regulatory requirements. Written verification must be provided if the production site is exempt from this requirement for annual measurements. (The first measurements submitted should be based on the last official measurements by the regulatory authorities and then new measurements should be submitted every three years). Emissions associated with the generation of electrical energy do not need to be taken into account. The sulphur 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 used to calculate the specific emission data must have been carried out on at least 45 consecutive days. The measurements must be representative for the relevant periods.

The measurement points should be the plants for generating steam (boiler house).

Accepted test methods include:
1. Gaseous sulphur compounds: NS 4859, SFS 5265, SS 028421, EPA 8, EPA 16A, EN 14791
2. NOx: ISO 11564, ISO 10849, EN 14792, SS 028425, EPA 7E

3. 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.
4. 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.
5. ISO 10396:2007

Appendix E Measurement of emissions to waste water in the paper production process or pulp production process

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:

- 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 F Measurement of emissions to air in the pulp production process

The measurements of the emissions to air must be carried out over a production period of 12 months. Unless the regulatory requirements at the site of the 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 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 sulphur 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 G Version history

The following changes were made to ecolabel DE-UZ 72 "Printing and publication paper made primarily from recovered paper, Edition January 2026, Version 1" and required the issuing of an updated version in each case. The version at the time of application is valid. If the changes were required for the implementation of new legal regulations, they apply to all certified products.

Verstion 2 (03/2026): Changes to the compliance verification in 3.3.