BLUE ANGEL

The Environmental Label

Recycled Paper

DE-UZ 14

Basic Award Criteria

Edition July 2014

Version 1

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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Chance in section 3.2.

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1 Introduction

1.1 The Environmental Label Jury has set up these Basic Criteria for Award of the Blue Angel Eco-Label in co-operation with the Federal Minister for the Environment, Nature Conservation and Nuclear Safety, the German Umweltbundesamt (Federal Environmental Agency) and considering the results of expert hearings conducted by RAL gGmbH. 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 Blue Angel eco-label may be granted for all products, provided that they meet the requirements specified hereinafter.

1.2 The use of waste paper for the production of graphic paper, especially waste paper from household and commercial collections, helps to save resources, above all the forest ecosystem, and to reduce the amount of waste.

It also avoids the environmental impacts directly associated with the production of pulp and wood pulp.

In a comparison of ecological systems paper products made from post-consumer waste paper do much better than paper products made from virgin fibres using wood as a source of fibrous raw materials in terms of consumption of resources, wastewater load, water and energy consumption – while still maintaining a comparable level of product serviceability.

2 Scope

These Basic Criteria apply to recycled papers and finished products made from recovered paper. These are:

2.1 Recycled papers for the production of graphic papers according to the two Grades Statistics „Office and Administration Papers“ and „Printing and Press Papers“ of Verband Deutscher Papierfabriken e.V. (Association of German Paper Mills) (Appendices 1 and 2 to the Basic Criteria RAL-UZ 14).

2.2 Finished products made from recovered paper, e.g. for the product lines of exercise books, writing pads, drawing books, calendars, envelopes, mailing bags, manuals, invoice papers, posters, photo envelopes, masking papers (e.g. for painting and varnishing work) as well as print and press products (e.g. telephone books).

3 Requirements and Compliance Verifications

3.1 The paper fibres of the products under paragraph 2 must be made from 100 percent recovered post consumer paper. A tolerance of 5% shall be allowed for finished products under paragraph 2.2.

Waste paper is the generic term for papers and boards recovered in quantifiable amounts after use or processing. The specifications of the waste paper grades are listed in Appendix 3 to the Basic Criteria RAL-UZ 14.

3.2 At least 65% waste paper of ordinary, medium and kraft waste paper grades as well as of the special grades (groups 1, 2, 4 and 5 – except for the individual grades 2.05, 2.06, 2.14, 4.07 and 5.09[1]) – related to the total fibre content shall be used for the manufacturer of the products under paragraph 2.

3.3 The content of diisopropylnaphthalene (DIPN) in paper and board shall be kept as low as technically possible. That is why, principally, the above-mentioned waste paper grades 2.05, 2.06 and 5.09[1] oben „carbonless copy papers“ must, not be used.

Alternatively, DIPN-containing waste paper grades (2.05, 2.06 and 5.09) may be used if an efficient technical system (e.g. deinking process) makes sure that the major part of DIPN is removed from the fibre cycle and the DIPN content in the finished paper does not exceed 50mg/kg.

Compliance Verification

The applicant shall report the average percentage of the paper grades used belonging to groups 1, 2, 3, 4 and 5 in Survey A in Annex 1 to the Contract pursuant to RAL-UZ 14 and declare compliance with the requirements in paras. 3.1 to 3.3. The applicant shall also report the percentage of the individual grades 2.05, 2.06 and 5.09.

The correctness of the data in Annex 1a to the Contract shall be verified once a year by an external environmental auditor accredited to audit paper mills [1], an accredited FSC certifier or a UBA-acknowledged expert in the field of fibrous raw materials, waste paper grades and waste paper recycling in accordance with Annex 6 to the Basic Criteria.

If waste paper grades 2.05, 2.06 and 5.09 are used the applicant shall report the maximum DIPN content in the finished product in Annex 1 to the Contract and submit

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[1] In the revised DIN EN 643 the 2.09 grade (carbonless copy papers) is now referred to as 5.09.

[1], List of NACE codes: http://www.dehst.de/SharedDocs/Downloads/DE/DEV_2020/DEV2020_NACE.html

a test report prepared by an independent ISO 17025 accredited testing laboratory or a selected UBA-recognized testing laboratory, e.g. a testing laboratory in the field of paper production of Darmstadt Technical University.

The DIPN content shall be determined ***once a year in accordance with DIN EN 14719*** *(DIPN in acetone extract).*

The applicant shall present a product sample.

3.4 The bisphenol-A (BPA) content shall be determined in a cold water extract prepared according to EN 645 by HPLC with UV or fluorescence detection on the basis of CEN/TS 13130-13 “Materials and articles in contact with foodstuffs - Plastics substances subject to limitation – Part 13: Determination of 2,2-bis(4-hydroxyphenyl)propane (bisphenol A) in food simulants.

Compliance Verification

Once a year, *the applicant shall present, for statistical purposes, a test report prepared by an independent ISO 17025 accredited testing laboratory or a selected UBA-recognized testing laboratory, e.g. a testing laboratory in the field of paper production and mechanical process engineering of Darmstadt Technical University.*

3.5 Only process auxiliaries listed in the 36th Recommendation of BfR[2] (Federal Institute for Risk Assessment) may be used. The maximum quantities or concentrations specified therein shall not be exceeded. The products shall be manufactured without the use of glyoxal-containing auxiliaries.

3.6 The use of optical brighteners shall not be permitted.

Compliance Verification

The applicant shall declare compliance with the requirements in paras. 3.5 und 3.6 in Annex 1 to the Contract.

3.7 No azo colorants or pigments that may split off any of the amines listed in Directive 2002/61/EEC or TRGS 614[3] may be used as colorants.

3.8 No colorants (pigments or dyes) may be used which contain mercury, lead, cadmium or chromium (VI) compounds as constituent ingredients.

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[2] http://bfr.zadi.de/SEARCH/BASIS/kse1/all/blob_dt/DDD/360DEUTSCH.pdf

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

Compliance Verification

To verify compliance with the requirements in 3.7 and 3.8 the applicant shall submit a declaration from a colorant supplier using Annex 2 to the Contract pursuant to RAL-UZ 14.

3.9 No colorants, surface finishing agents, auxiliaries and coating materials may be used

a) which according to the criteria of Regulation (EC) No 1272/2008[4] (or Directive 67/548/EEC) are marked with the H-Phrases (R Phrases) listed in the following table or meet the criteria for such classification[5]

b) or which according to TRGS 905[6], as amended, are classified as carcinogenic, mutagenic or reprotoxic substances.

Regulation (EC) No 1272/2008 (GHS-Regulation)	**Directive 67/548/EEC (Dangerous Substances Directive)**	**Phrase**
Toxic, mutagenic and reprotoxic substances		
H340	R46	May cause genetic defects.
H341	R68	Suspected of causing genetic defects.
H350	R45	May cause cancer.
H350i	R49	May cause cancer by inhalation.
H351	R40	Suspected of causing cancer.
H360F	R60	May damage fertility.

[4] Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (GHS Regulation).
The GHS Regulation (Globally Harmonized System) that has come into force on January 20, 2009, replaces the old Directives 67/548/EEC (Dangerous Substances Directive) and 1999/45/EC (Dangerous Preparations Directive). According to the said regulation, substances are classified, labelled and packed until December 1, 2010 according to Directive 67/548/EEC while mixtures (formerly preparations) are classified, labelled and packed until June 1, 2015 according to Directive 1999/45/EC. After these dates the GHS Regulation shall be applied. Both the new indications of danger (H-Statements) and the hitherto applicable Risk or R-phrases shall be indicated for substances until the 1st of June 2015 (Material Safety Data Sheet).

[5] The harmonized classifications and labellings of dangerous substances can be found in Part 3 of Annex VI to Regulation (EC) No 1272/2008 (GHS Regulation). Table 3.1 lists classifications and labellings according to the new system using H Phrases; Table 3.2 lists classifications and labellings according to the old system using R Phrases. The GHS Regulation can be found, for example, at: http://www.reach-info.de/ghs

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

Regulation (EC) No 1272/2008 (GHS-Regulation)	Directive 67/548/EEC (Dangerous Substances Directive)	Phrase
Toxic, mutagenic and reprotoxic substances		
H360D	R61	May damage the unborn child.
H360FD	R60/61	May damage fertility. May damage the unborn child.
H360Fd	R60/63	May damage fertility. Suspected of damaging the unborn child.
H360Df	R61/62	May damage the unborn child. Suspected of damaging fertility.
H361f	R62	Suspected of damaging fertility.
H361d	R63	Suspected of damaging the unborn child.
H361fd	62/63	Suspected of damaging fertility. Suspected of damaging the unborn child.

Compliance Verification:

To verify compliance with the requirement the applicant shall submit declarations from the suppliers of chemical additives in accordance with Annex 3 to the Contract pursuant to RAL-UZ 14. The declarations shall be signed by the head of the company's product development unit or a comparable engineering department. The relevant Material Safety Data Sheets shall be made available to RAL gGmbH, if so requested.

3.10 Waste paper shall be processed without using chlorine, halogenated bleaching agents and not readily biodegradable complexing agents, such as, for example, ethylenediaminetetraacetic acid (EDTA) and diethylenetriaminepentaacetic acid (DTPA).

Compliance Verification

The applicant shall declare compliance with the requirement in Annex 1 to the Contract and also list in Survey B the bleaching and complexing agents used.

3.11 Only those substances may be used as biocides in product manufacturing which have been approved under the Biocidal Products Regulation - Regulation (EU) No 528/2012 - (EU List of approved active substances; formerly inclusion in Annex I of the Biocidal Products Directive 98/09 EC) or which are still being reviewed as notified existing active substances for the respective type of biocidal product under the EU Review Programme for Existing Active Substances.

Only those products may be used as biocidal products which have been approved for the respective field of use. Products containing existing active substances which are still under EU review may continue to be used without authorisation until a decision is reached.

Also, the products must not contain active substances considered as candidates for substitution in accordance with Article 10 of the EU Biocides Regulation (EU 528/2012).

Prior to the respective entry into force of the approval requirement for the use of biocidal products containing existing active substances only substances may be used which are additionally listed in the 36th Recommendation of BfR (Federal Institute for Risk Assessment).

Tetramethylthiuram disulfide (CAS No: 137-26-8) and **nano silver** (CAS No: 7440-22-4) must not be used.

Compliance Verification

The applicant shall declare compliance with the requirement in Annex 1 to the Contract and name the biocidal active substances used by indicating their IUPAC names and CAS Registry Numbers together with their quantities per kilogram of dry pulp.

3.12 Recycled paper should be manufactured without the use of mineral oil-based additives which contain aromatic hydrocarbons (having a minimum of 10 carbon atoms) as ingredients. Only aliphatic hydrocarbons with a chain length of C10 to C20 may be used. Plant-based substitutes for mineral oil should be free of genetic engineering and come from sustainable farming.

Compliance Verification

The applicant shall list the additives used.

3.13 Recycled paper designed for use on electrophotographic printers or copiers („Copying paper“) shall be tested with regard to its emission potential for the emission of volatile organic substances (TVOC and TSVOC and DIPN).

Testing shall be performed by thermal extraction (TE) on a batch of packaged paper in accordance with the test guidelines in Appendix 4 to these Basic Criteria RAL-UZ 14. The resulting TE values indicate the emission potential. They must not exceed the following limits:

TVOC: 60 micrograms per gram of paper (µg/g),

TSVOC 200 micrograms per gram of paper,

DIPN 20 micrograms per gram of paper.

Compliance Verification

The applicant shall - upon filing the application and thereafter ***every two years*** *- submit a test protocol prepared by a testing laboratory that has provided evidence of its qualification to do the testing to BAM (Bundesamt für Materialforschung und –prüfung, (Federal Institute for Materials Research and Testing), Division: „Umweltrelevante Material- und Produkteigenschaften/Emissionen aus Materialien“ (Environmental Material and Product Properties/Emissions from Materials). Three values shall be determined and reported for 1 batch on the occasion of each test.*

3.14 The applicants for finished products under paragraph 2.2 shall verify compliance with the requirements either by means of the compliance verifications according to paras. 3.1 - 3.20 or, alternatively, by written statement that the finished product has been made from Blue Angel-labelled recycled paper exclusively.

The applicant shall name the recycled paper, its manufacturer as well as the Contract Number in Annex 1 to the Contract.

Also, the applicant shall present compliance verifications according to paras. 3.7 to 3.9 and 3.15 to 3.20 for the finished products.

3.15 Products primarily intended for use by children must additionally meet the requirements of DIN EN 71, Part 3 „Safety of toys“.

Compliance Verification

The applicant shall confirm compliance with the requirements in Annex 1 to the Contract.

3.16 No mineral oil-based printing inks containing aromatic hydrocarbons as ingredients (with ≥ 10 carbon atoms) may be used for imprinting products.

Only aliphatic hydrocarbons with a chain length of C10 to C20 may be used. Plant-based substitutes for mineral oil should be free of genetic engineering and come from sustainable farming. This requirement also applies if the paper comes with a colour design or is coloured in the mass.

Compliance Verification

The applicant shall declare compliance with the requirement in Annex 1b to the Contract and submit Annex 4 to the Contract.

3.17 The printed paper product[7] shall be deinkable and possibly existing adhesive applications shall be removable. The product shall meet the recyclability requirements of the European Recovered Paper Council (ERPC).

Testing shall be based on INGEDE Methods 11[8] and 12[9] on the „Bewertung der Rezyklierbarkeit von Druckerzeugnissen – Prüfung der Deinkbarkeit " (Assessment of the Print Product Recyclability - Deinkability Test) (July 2012) and "Prüfung des Fragmentierverhaltens von Klebstoffapplikationen" (Testing of the Fragmentation Behaviour of Adhesive Applications) (January 2013)". The recyclability shall be assessed in accordance with the ERPC guidelines using the scorecards for deinkability[10] or the scorecards for the removability of adhesive applications[11].

Water-based adhesive shall be exempt from the testing requirement under INGEDE 12.

3.18 No diisobutyl phthalate-containing adhesives may be used in the manufacture of finished products.

Compliance Verification

The applicant shall declare compliance with the requirements of paras. 3.17 and 3.18 in Annex 1b to the Contract. Also, the applicant shall provide evidence of compliance with the requirement of para. 3.17 by means of a test report prepared by an independent testing laboratory on the deinkability and removability of adhesive particles confirming compliance with the requirement.

Also, the applicant shall and complete and submit Annex 5 to the Contract to verify compliance with the requirement of para. 3.18.

3.19 The serviceability of the products must be guaranteed. If technical requirements for individual products are governed by DIN Standards such standards shall be complied with in accordance with the version in effect on the date the contract is signed.

This applies, for instance, to:

Continuous paper: EN 12858

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[7] It doesn't apply for cardboard and kraft paper

[8] http://www.ingede.com/ingindxe/methods/ingede-method-11-2012.pdf

[9] http://www.ingede.com/ingindxe/methods/ingede-method-12-2013.pdf

[10] http://www.paperforrecycling.eu/uploads/Modules/Publications/ERPC-005-09-115018A.pdf

[11] http://www.paperforrecycling.eu/uploads/Modules/Publications/Removability%20Adhesive%20Applicationsfinal.pdf

Envelope paper: DIN 6733

Paper and Board – Office paper: DIN 19307

Copying paper: DIN EN 12281

Compliance Verification

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

3.20 Copying papers and papers intended for the manufacture of print products shall additionally meet at least the service life requirements of LDK 24-85 according to DIN 6738:1999. (LDK - lifespan class).

Compliance Verification

To verify compliance with the requirements the applicant shall submit a test report prepared by an independent testing laboratory.

4 Applicants and Parties Involved

4.1 Manufacturers of products under paragraph 2 shall be eligible for application.

4.2 Parties involved in the award process are:

- RAL gGmbH to award the Blue Angel eco-label,
- the federal state being home to applicant's production site,
- Umweltbundesamt, (Federal Environmental Agency) which after the signing of the contract receives all data and documents presented in a processed form (data base) in application for the Blue Angel in order to be able to further develop the Basic Award Criteria.

5 Use of the Blue Angel Environmental Label

5.1 The terms governing the use of the Environmental Label shown on page 1 by the applicant are stipulated by a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH.

5.2 If the Blue Angel eco-label is shown on printed products or similar products pursuant to para. 2.2 the applicant (publisher or editor) shall make sure that the eco-label stands out well against the contents of the printed products (e.g. by reproducing it in the imprint, in the top or bottom lines of the respective printed products or similar products) and that it is absolutely clear that only the recycled paper used has been awarded the Blue Angel eco-label).

The following note shall appear next to the Blue Angel eco-label on advertising leaf-

lets, brochures, catalogues, posters and the like: “Printed on a Blue Angel-Certified Product”.

5.3 Within the scope of such contract the applicant undertakes to meet the requirements under paragraph 3 for as long as the Blue Angel eco-label is used.

5.4 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, 2018.

They shall be extended by periods of one year each, unless terminated in writing by March 31, 2018 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.

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

5.6 The Contract on the Use of the Environmental Label shall specify:

5.6.1 Applicant (manufacturer)

5.6.2 Brand / trade name, product designation

5.6.3 Distributor (label user), i.e. the marketing organization under para. 5.5

Appendix 1 to the Basic Criteria RAL-UZ 14

Grades Statistics of Office and Administrative Papers
Verband Deutscher Papierfabriken e.V., as of November 2000
(Association of German Paper Mills)

	Data Papers and Data Cardboard
02050505	Accounting transparent paper
02051005	Other accounting papers
02051505	Tape paper
02052005	Cardboard for punched cards, magnetic strips
	OCR Paper
02052505	– - roll
02052510	– - sheet
02053005	Paper for other reading systems
	Continuous Form Printing Paper
02053510	– - wood-free
	Index Cardboard
02054005	– - wood-containing
02054010	– - wood-free
	Writing Papers
02101005	High-quality typewriter and writing papers
02101505	Writing paper for school purposes
	Typewriter, Duplication, Copying Papers, wood-free, two-sided, < 43 cm and corresponding rolls Typewriter, Duplicating and Copying Papers, wood-free, in rolls
02150510	– wood-free
	Typewriter, Duplicating and Copying Papers, wood-free, machine-finished, in sheets
02152005	– - wood-free, machine-finished (duplicating paper) white
02152010	– - wood-free, machine-finished (copying paper) white
02152015	– - wood-free, machine-finished (duplicating paper) coloured
	Typewriter, Duplicating and Copying Papers, wood-free, machine-finished, in sheets
02152505	– - wood-free, glazed (transfer paper) white
02152510	– - wood-free, glazed (copying paper) white
02152515	– - wood-free, glazed (transfer paper) coloured
02153005	Copy Paper
	Envelope Other wood-containing paper, incl. waste-paper-containing and sulphate-mixed paper
02200505	Other wood-containing dispatch bags
02200510	Other wood-containing envelopes
02201005	**Kraft Paper**
	Wood-free
02201505	– - white
02201510	– - coloured
02202005	**Tissue lining paper for envelopes**
	Envelope 100% recycled paper
02210505	Dispatch bags 100 recycled paper
02210510	Other envelopes 100 recycled paper

	Heliographic Paper and Copying Base Paper
02250505	Heliographic base paper
02251005	Copying base paper
	Special Office Base Papers
02200505	Base paper for offset foils, carbon base paper
02301005	- One-time carbon paper
02201010	- Multiple carbon base paper (inc. Blue-print base paper)
02301505	Base paper for prepared duplicating paper
02302005	Base paper and base cardboard for permanent stencils
02302505	Base paper for NON-IMPACT printing processes
02303005	Other base papers for special office papers
	Other Papers
02350505	Blotting paper
02351005	Banknote paper and document paper
02351505	Map paper and nautical map paper
02352005	Other papers for office and administration purposes
	Postcard Board **Postcard Board, wood-containing**
02400505	- white
02400510	- coloured
	Postcard Board, Wood-Free
02401005	- white
02401010	- coloured
02401505	Picture postcard board
	Other Wood-Containing Non-Coated Roll Printing Papers, White and Coloured
02450505	Other wood-containing continuous form printing paper
	Other Wood-Containing Non-Coated Papers, Cut-Size Sheet Paper, White and Coloured
02451005	Other wood-containing non-coated papers, cut-size sheet paper: Office, duplicating and cut-size offset papers
	Other Wood-Containing Graphic Papers > 169 g/m²
02451505	Other wood-containing cardboard, roll
02451510	Other wood-containing cardboard, cut to size
	Non-Coated Roll Printing Papers, White and Coloured, 100% Recycled
02460505	Continuous form printing paper, 100% recycled
	Non-Coated Papers, Cut-Size Sheet Paper, White and Coloured, 100% Recycled
02461005	Non-coated paper, cut-size sheet paper: Office, duplicating, cut-size offset paper, 100% recycled
	Graphic Papers > 169 g/m², 100% Recycled
02461505	Cardboard, roll, 100% recycled
02461510	Cardboard, cut to size, 100% recycled
	Other Cardboard for Office and Administration Purposes
02500505	Folder cardboard
02501005	Letter file folder
02502005	Ticket cardboard
02502505	Fancy board
02503005	Other cardboard for office and administration purposes

Appendix 2 to the Basic Criteria RAL-UZ 14
Grades Statistics of "Printing and Publication Papers"
Verband Deutscher Papierfabriken e.V., as of November 2000
(Association of German Paper Mills)

	Newsprint Paper
01050505	Standard
01051005	Improved
	Non-Coated Printing Paper (rolls)
01100505	SC-A rotogravure paper
01101005	SC-B rotogravure paper
01102005	SC-B offset paper
	Other Wood-Containing Non-coated Printing Papers, White/Coloured **Other Wood-Containing Non-Coated Roll Printing Papers, White/Coloured**
01150505	Other wood-containing thin printing papers < 46 g/m²
01150510	Other wood-containing volume-enlarged roll printing papers (book printing paper)
01150515	Other wood-containing writing/offset papers (roll)
	Non-Coated Printing Papers, White/Coloured, 100 % recycled **Non-Coated Roll Printing Papers, White/Coloured, 100 % recycled**
01160505	Thin printing papers < 46g/m², 100% recycled
01160510	Volume-enlarged Roll Printing Paper (book printing paper) 100%recycled
	Other Wood-Containing Non-Coated Papers, Large-Sized, White/Coloured
01200505	Other wood-containing volume-enlarged book printing papers
01200510	Other wood-containing writing/offset papers
	Non-Coated Papers, Large-Sized, White/Coloured, 100% Recycled
01210505	Volume-enlarged book printing papers, 100% recycled
01210510	Writing/Offset papers, 100% recycled
	Wood-Free Non-Coated Printing Papers **Wood-Free Machine-Finished Non-Coated Printing Papers in Rolls**
01300505	White – up to 80 g/m²
01300510	White – 81 – 149 g/m²
01300515	White – 150 g/m² and more
01300520	Coloured
	Wood-Free S.C. Non-Coated Printing Papers in Rolls
01301005	White – up to 80 g/m²
01301010	White – 81 – 149 g/m²
01301015	White – 150 g/m and more²
01301020	Coloured
	Book Printing Paper, Wood-Free
01301505	Roll
01301510	Sheet
	Wood-Free Machine-Finished Non-Coated Printing Papers, Sheets **(minimum 1 page > 43 cm)**
01302005	White – up to 80g/m²
01302010	White – 81 – 149 g/m²
01302015	White – 150 g/m² and more
01302020	Coloured

	Wood-Free S.C. Non-Coated Printing Papers in Sheets (minimum 1 page > 43 cm)
01302505	White + coloured up to 80 g/m²
01302510	White + coloured 81 g/m² and more
	Wood-Free Bible Papers, Thin Printing Papers and Special Printing Papers
01350505	- less than 40 g/m²
01350510	- 41 to 49 g/m²
01350515	- 50 g/m² and more
01351005	Other special printing papers
	Coating Base Paper and Board for Printing Papers and Boards
01400505	- Wood-containing
01401005	- Wood-free
	Two-Sided Coated Paper **Coated Wood-Containing Roll Printing Papers**
01450506	ULWC/LWC – rotogravure 35-70 g/m²
01450507	ULWC/LWC – offset printing 35-70 g/m²
01450511	MWC/HWC – rotogravure 75 g/m² and more
01450512	MWC/HWC – offset printing 75 g/m² and more
	Coated Wood-Free Roll Printing Papers
01451005	LWC, wood-free
01451010	Others, 75 g/m² and more
	Wood-Containing Two-Sided Coated Papers in Sheets
01451505	- Ordinary
01451510	- Standard
01451515	- Special coated
	Wood-free Two-Sided Coated Papers in Sheets
01452005	- Standard
01452010	- Special coated
01452015	- Art paper
	Pigmented Papers **Pigmented Papers in Rolls**
01500505	- Wood-containing
01500510	- Wood-free
	Pigmented Papers in Sheets
01501005	- Wood-containing
01501010	- Wood-free

Appendix 3 to the Basic Criteria RAL-UZ 14

Extract from „Altpapier, Liste der Deutschen Standardsorten und ihre Qualitäten" (Waste Paper, List of German Standard Grades and their Qualities) (as of June 2000) in accordance with DIN EN 643, as amended.

Published by: **Bundesverband der Deutschen Entsorgungswirtschaft e.V., Köln**
(Association of German Disposal Management - Cologne)
Bundesverband Sekundärrohstoffe und Entsorgung e.V., Bonn
(Association of Secondary Raw Materials and Disposal)
Verband Deutscher Papierfabriken, Bonn
(Association of German Paper Mills)

Waste Paper Grades

Group 1:	Ordinary Grades
1.01	**Mixed paper and board, unsorted, but unusable materials removed** Mixture of various grades of paper and board, without restriction on short fibre content.
1.02	**Mixed papers and board (sorted)** Mixture various qualities of paper and board, containing a maximum of 40% of newspapers and magazines.
1.03	**Grey board** Printed and unprinted white lined and unlined grey board or mixed board, free from corrugated material.
1.04	**Supermarket corrugated paper and board** Used paper and board packaging, containing a minimum of 70% of corrugated board, the rest being solid board and wrapping papers.
1.05	**Old corrugated containers** Used boxes and sheets of corrugated board of various quality.
1.06	**Unsold magazines** Unsold magazines, with or without glue.
1.06.01	**Unsold magazines without glue**
1.07	**Telephone books** New and used telephone books, with unlimited content of pages coloured in the mass, with and without glue. Shavings allowed.
1.08	**Mixed newspapers and magazines I** A mixture of newspapers and magazines, containing a minimum of 50% of newspapers, with or without glue.
1.09	**Mixed newspapers and magazines II** A mixture of newspapers and magazines, containing a minimum of 60% of newspapers, with or without glue.
1.10	**Mixed magazines and newspapers** A mixture of newspapers and magazines, containing a minimum of 60% of magazines, with or without glue.

1.11	**Sorted graphic paper for deinking**1 Sorted graphic paper from households, newspapers and magazines, each at a minimum of 40%. The percentage of non-deinkable paper and board should be reduced over time to a maximum level of 1.5%. The actual percentage is to be negotiated between buyer and seller.

[1] For the current special agreement on the share of contraries (Störstoffgehalt) please see the original list.

Group 2:	Medium Grades
2.01	**Newspapers** Newspapers containing a maximum of 5% of newspapers or advertisements coloured in the mass.
2.02	**Unsold Newspapers** Unsold daily newspapers, free from additional inserts or illustrated material coloured in the mass.
2.02.01	Unsold newspapers, no flexographic printing allowed Unsold daily newspapers, free from additional inserts or illustrated material coloured in the mass, strings allowed. No flexographic printed material allowed.
2.03	**Lightly printed white shavings** Lightly printed white shavings, mainly mechanical pulp-based.
2.03.01	**Lightly printed white shavings without glue** Lightly printed white shavings, mainly mechanical pulp-based paper, without glue.
2.04	**Heavily printed white shavings** Heavily printed white shavings, mainly mechanical pulp-based paper.
2.04.01	**Heavily printed white shavings without glue** Heavily printed white shavings, mainly mechanical pulp-based paper, without glue.
2.05	**Sorted office paper** Sorted office paper.
2.06	**Coloured letters** Correspondence, in mixed papers coloured in the mass, with or without print, of printing or writing paper. Free from carbon paper and hard covers.
2.07	**White woodfree books** Books, including misprints of books, without hard covers, mainly of woodfree white paper, black printed only. Containing a maximum of 10% of coated paper.
2.08	**Coloured woodfree magazines** Coated or uncoated magazines, white or coloured in the mass, free from non-flexible covers, bindings, non-dispersable inks and adhesives, poster papers, labels or label trim. May include heavily printed circulars and coloured in the mass shavings. Containing a maximum of 10% mechanical pulp based papers.
2.09	**Carbonless copy paper** Carbonless copy paper.
2.10	**Bleached woodfree PE-coated board** Bleached woodfree PE-coated board from board manufacturers and converters.
2.11	Other PE-coated board Other PE-coated board. May contain unbleached board and paper from board manufacturers and converters.
2.12	**Mechanical pulp-based computer print-out** Continuous computer print-out, mechanical pulp based, sorted by colours, may include recycled fibres.

Group 3:	High Grades
3.01	**Mixed lightly coloured printers shavings** Mixed shavings of printing and writing papers, lightly coloured in the mass, containing a minimum of 50% of woodfree paper.

3.02	**Mixed lightly coloured woodfree printer shavings** Mixed shavings of printings and writing papers lightly coloured in the mass, containing a minimum of 90% of woodfree paper.

3.03	**Woodfree binders** White woodfree lightly printed shavings with glue, free from paper coloured in the mass. May contain a maximum of 10% of mechanical pulp based paper.
3.04	**Tear white shavings** White woodfree lightly printed shavings without glue, free from wet-strength paper and paper coloured in the mass.
3.05	**White woodfree letters** Sorted white woodfree writing papers, originating from office records, free from cash books, carbon paper and non water soluble adhesives.
3.06	**White business forms** White woodfree printed business forms.
3.07	**White woodfree computer print-out** White woodfree computer print-out, free from carbonless paper and glue.
3.08	**Printed bleached sulphate board** Heavily printed sheets of bleached sulphate board, without glue, polycoated or waxed materials.
3.09	**Lightly printed bleached sulphate boards** Lightly printed sheets of bleached sulphate board, without glue, polycoated or waxed materials.
3.10	**Multi printing** Woodfree, coated, lightly printed, free from wet-strength paper or paper coloured in the mass.
3.11	**White heavily printed multiply board** New cuttings of heavily printed white multiply board, containing woodfree, mechanical or thermo-mechanical pulp plies, but without grey plies.
3.12	**White lightly printed multiply board** New cuttings of lightly printed white multiply board, containing woodfree, mechanical or thermo-mechanical pulp plies, but without grey plies.
3.13	**White unprinted multiply board** New cuttings of unprinted white multiply board, containing woodfree, mechanical or thermo-mechanical pulp plies, but without grey plies.
3.14	**White newsprint** Shavings and sheets of white unprinted newsprint, free from magazine paper.
3.15	**White mechanical pulp based coated and uncoated paper** Shavings and sheets of white unprinted coated and uncoated mechanical pulp based paper.
3.15.01	**White mechanical pulp based paper containing coated paper** Shavings and sheets of white unprinted mechanical pulp based coated paper.
3.16	**White woodfree coated paper, without glue** Shavings and sheets of white unprinted woodfree coated paper, without glue
3.17	**White shavings** Shavings and sheets of white unprinted paper, free from newsprint and magazine paper containing a minimum of 60% of woodfree paper; may contain a maximum of 10% of coated paper. Without glue.
3.18	**White woodfree shavings** Shavings and sheets of white unprinted woodfree paper; may contain a maximum of 5% of coated paper. Without glue.
3.18.01	**White woodfree uncoated shavings** Shavings and sheets of white unprinted woodfree paper, free from coated paper. Without glue.
3.19	**Unprinted bleached sulphate board** Unprinted sheets of bleached sulphate board, without glue, polycoated or waxed materials.

Group 4:	Kraft Grades
4.01	**New shavings of corrugated board** Shavings of corrugated board, with liners of kraft or testliner.
4.01.01	**Unused corrugated kraft** Unused boxes, sheets and shavings of corrugated board, with kraft liners only, the fluting made from chemical or thermo-chemical pulp.
4.01.02	**Unused corrugating material** Unused boxes, sheets and shavings of corrugated board, with liners of kraft or testliner.
4.02	**Used corrugated kraft I** Used boxes of corrugated board, with kraft liners only, the fluting made from chemical or thermo-chemical pulp.
4.03	**Used corrugated kraft II** Used boxes of corrugated board, with liners of kraft or testliners but having at least one liner made of kraft.
4.04	**Used kraft sacks** Clean used kraft sacks. Wet-strength and non wet-strength.
4.04.01	**Used kraft sacks with polycoated papers** Clean used kraft sacks. Wet-strength and non wet-strength. May include polycoated papers.
4.05	**Unused kraft sacks** Unused kraft sacks. Wet-strength and non wet-strength.
4.05.01	**Unused kraft sacks with polycoated papers** Unused kraft sacks. Wet-strength and non wet-strength. May include polycoated papers.
4.06	**Used kraft** Used kraft paper and board of a natural or white shade.
4.07	**New kraft**, Shavings and other new kraft paper and board of a natural shade.
4.08	**New carrier kraft** New carrier kraft, may include wet-strength paper.

Group 5:	Special Grades
5.01	**Mixed recovered paper and board** Unsorted paper and board, separated at source.
5.02	**Mixed packaging** A mixture of various qualities of used paper and board packaging, free from newspapers and magazines.
5.03	**Liquid board packaging** Used liquid packaging board including used PE-coated liquid packaging board (with or without aluminium content), containing a minimum of 50% by weight of fibres, and the balance being aluminium coatings.
5.04	**Wrapper kraft** Poly-lined, sprayed, or laminated used kraft. Must not contain bitumen or wax coatings.
5.05	**Wet labels** Used wet labels from wet-strength papers, containing a maximum of 1% glass content, and a maximum of 50% moisture, without other unusable material.
5.06	**Unprinted white wet-strength woodfree papers** Unprinted white wet-strength woodfree papers.
5.07	**Printed white wet-strength woodfree papers** Printed white wet-strength woodfree papers.

Appendix 4 to the Basic Criteria RAL-UZ 14

Method for the Testing of the Emission Potential of Volatile Organic Compounds from Copying Paper for the Award of the Blue Angel Eco-Label pursuant to RAL-UZ 14

Table of Contents

1. Definitions

Test specimen

A part of the paper sample that has been prepared for thermal extraction (TE) for determining the emission potential of the paper.

VOCs, Volatile Organic Compounds

Organic compounds emitted from the test specimen and detected by thermal extraction. These are, in terms of this test method, the identified and unidentified organic compounds eluting between and including n-hexane and n-hexadecane.

TVOCs (Total Volatile Organic Compounds)

The sum of all concentrations (µg/g) of identified and unidentified volatile organic compounds eluting between and including n-hexane and n-hexadecane - quantified as toluene equivalent according to formula 1.

SVOCs (Semi-Volatile Organic Compounds)

Semi-volatile organic compounds (identified and unidentified) eluting between n-hexadecane (excluded) and n-docosane (included).

TSVOCs (Total Semi-Volatile Organic Compounds)

The sum of all concentrations (µg/g) of identified and unidentified semi-volatile organic compounds that elute after n-hexadecane up to n-docosane, quantified as alkane equivalent, according to formula 2.

2. Testing Instruments

- Scalpel or scissors to cut out a strip of paper from the middle of a sheet of paper
- A pair of tweezers to pick up the strip of paper and place it into the TE glass tube
- GERSTEL thermal extractor (TE)
- Gas chromatograph with thermal desorption unit, coupled to a mass spectrometer equipped with an analyzer unit

3. Test materials

3.1 Selection

Samples produced no longer than 4 weeks ago shall be selected for the test. The party ordering the test shall be responsible for supplying fresh test material. As a rule, a sample shall be supplied in its original package (500 sheets). Date of manufacture and batch number shall be indicated.
Samples from three different batches per type of paper shall be supplied for testing.

3.2 Specimen Production

Care should be taken not to contaminate the specimen in producing the specimen. It must not be touched with fingers but only with clean tweezers.
A sheet of paper is taken from the middle of the original package. This sheet is placed on an inert support. In the next step, three strips of about 3 mm x 60 mm are cut out from the middle of this sheet using a scalpel. One strip of paper should weigh about 13 ± 1 mg. The weight shall be determined accurate to 0.1 mg.
The strip of paper is placed in the TE glass tube using a pair of tweezers.

4. Analysis Method and Evaluation

4.1 Principle

The analysis method of thermal extraction is based on the principle of dynamic headspace analysis. The specimen is heated from 40°C to 180°C in a stream of nitrogen. This temperature is maintained for a period of 12 minutes. The substances extracted by this process are collected on a Tenax tube doped with an internal standard (ISTD) and, subsequently, analysed using thermal desorption. In doing so, the substances are separated using gas chromatography and identified and quantified by the mass spectrometer. The emission potential of the paper can be deduced therefrom and given as a TE value.

4.2 Example of a proven Analysis Method:

GERSTEL TDS-2 / KAS-4 thermal desorption/cold injection system with a glass wool liner (temperature programme 40-180°C with 40°C/min, maintain at 180°C for 5 minutes / cryofocussing at -100 °C, heat up at a rate of 12°C/sec to 300°C / He flow rate: 51 ml/min)
Agilent GC 7890 / MSD 7973 (column DB 5 1; 30 m; 0.25 mm; 1 µm; temperature programme 40°C for 6 minutes, 4°C/min up to 80°C for 0 minute, 10°C/min up to 110°C for 0 min, 30°C/min up to 300°C, maintain for 5 min / MSD: scan 35 - 550; 2 scans/sec; transfer line: 300°C; NIST02 – data base)
This method can also be used to detect semi-volatile compounds, such as, for example, diisopropylnaphthalene and dibutyl phthalate [1].
When using a thermal extractor from another manufacturer the equivalence to the GERSTEL TE must be guaranteed. Evidence of equivalence shall be provided to BAM as specified in para. 6.

4.3 Evaluation

For all substances in the VOC range, the TVOC cumulative value shall be determined as a toluene equivalent in µg/g. The TSVOC cumulative value shall be determined as an alkane equivalent in µg/g for all substances in the SVOC range. For diisopropylnaphthalene, the cumulative value of all isomers shall be determined by means of an external calibration using 2,6-diisopropylnaphthalene or a mixture of diisopropylnaphthalene isomers in µg/g.
Tenax TA-filled desorption tubes are spiked with calibration solutions of ISTD, toluene, alkane and 2,6- diisopropylnaphthalene in methanol or ethanol, respectively. For this purpose, a microlitre of the solution is sprayed onto the glass wool plug or glass frit in front of the Tenax TA and 1 litre of VOC-free air is sucked through the tube to remove the solvent. The calibration standard is ana-

lysed following the thermal desorption of the Tenax using gas chromatography coupled with mass spectrometry.
For determining the TVOC and TSVOC sum parameters, the total area of all substance peaks extracted from the specimen shall be determined, see also [2]. The course of the base line must be known by analysis of empty glass tubes (blanks).

The TE value which is a measure of the emission potential of the paper is calculated in microgram per gram using the following formula:

$$EP_{VOC} = R_T \times \frac{A_S}{m_P}$$ Formula 1

EP: Emission potential in µg/g (here: TE value)
R_T: Toluene response factor = Toluene mass in nanogram (ng) / toluene peak area
A_S: Peak areas (VOC)
m_P: Weighed portion of the sample in mg

$$EP_{SVOC} = R_A \times \frac{A_S}{m_P}$$ Formula 2

EP: Emission potential in µg/g (here : TE value)
R_A: Toluene response factor = Toluene mass in nanogram (ng) / alkane peak area
A_S: Peak areas SVOC
m_P: Weighed portion of the sample in mg

5. Test Report

The test report shall include all test data and the full test evaluation for the product.
It shall contain the following minimum information:
Manufacturer
Exact product designation (including batch number and date of manufacture)
Date of receipt, date/period of testing
Specimen production (dimensions, weight)
Testing and analysis conditions
TE TVOC in µg/g = cumulative value of extracted VOCs as TVOC in toluene equivalents
TE SVOC in µg/g = cumulative value of extracted SVOCs as TSVOC in alkane equivalents

TE DIPN in µg/g = cumulative value of extracted diisopropylnaphthalene isomers quantified as 2,6-diisopropylnaphthalene or diisopropylnaphthalene isomers
The cumulative value is the average value of three measurements of the three batches.
Tester's signature.

6. Testing laboratories

The emission test required for applying for the Blue Angel eco-label for recycled copying paper under RAL-UZ 14 may only be performed by qualified laboratories.
Testing laboratories shall be considered qualified if they possess the necessary apparatus and a quality management system (or are accredited for these tests) and have demonstrated their qualification to do such testing by successfully participating in relevant ring tests. Verification of compliance with these requirements shall be submitted to Bundesanstalt für Materialforschung und -prüfung - Fachbereich 4.2 „Materialien- und Luftschadstoffe (Federal Institute for Materials Research and Testing, Division 4.2 „Materials and Air Pollutants").

7. Literature

[1] Jann, O., Wilke, O.: Möglichkeiten und Grenzen bei der Bestimmung von SVOC-Emissionen aus Materialien und Produkten (Methods and limits of determining SVOC emissions from materials and products). VDI-Kolloquium „Neuere Entwicklungen bei der Messung und Beurteilung der Luftqualität" (Recent developments in measuring and evaluating air quality), 11.-13.06.2002, Schwäbisch Gmünd, VDI-Bericht 1656 p:357 -367, VDI-Verlag, 2002

[2] DIN ISO 16000-6: Indoor Air – Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA sorbent, thermal desorption and gas chromatography using MS or MS-FID (ISO/DIS 16000-6:2012).