

BLUE ANGEL

The German Ecolabel



Toasters

DE-UZ 167

Basic Award Criteria

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Version 4

The Environmental Label is supported by the following four institutions:



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.



The German Environmental Agency with its specialist department for "Ecodesign, Eco-Labeling 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.



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.



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

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

1 Introduction

1.1 Preface

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

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

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

1.2 Background

A toaster is one of the basic items that belongs to a German household. Usually these appliances have a very high power consumption, but since they are only used for a few minutes per day the total power consumption of a toaster is still relatively low. Nevertheless, with almost 50kWh per year the average power consumption of a regularly used toaster is almost as much as that of other small household appliances, such as steam irons, electric kettles and breadmakers. Blue Angel eco-labelled toasters usually consume about 50% less power than inefficient appliances. About 0.9 TWh/year could be saved and emissions of almost 540,000 tons of CO₂e could be avoided if all toasters in German homes were replaced by eco-labelled ones.

Moreover, Blue Angel eco-labelled toasters meet stringent requirements for plastics and feature very low formaldehyde emissions. Last but not least, the Operating Instructions of Blue Angel eco-labelled products must inform consumers about health and environmental aspects of toaster use and include instructions for using the product in an environmentally sound and healthy manner.

1.3 Objectives of the Blue Angel Eco-Label

Climate protection, reduction of power consumption, minimization of standby losses as well as avoidance of pollutants and waste are key objectives of environmental protection.

The Blue Angel eco-label for toasters may be awarded to devices with the following environmental properties:

- low power consumption;
- low pollutant contents and emissions;
- high safety standards;
- ease of use.

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



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- low energy consumption
- low level of harmful materials
- safe

1.4 Basic Legal Provisions

It is a matter of course for Blue Angel eco-labelled products to comply with current laws and regulations, especially with the following ones:

- EU Directives 2002/96/EC¹ and 2002/95/EC² - regulating the disposal of appliances - transposed into German law by the Elektro- und Elektronikgesetz (ElektroG) (Electrical and Electronic Equipment Act)³ are complied with. For precautionary reasons the product meets material requirements going beyond these provisions.
- The substance requirements defined by the EU Chemicals Regulation REACH (1907/2006/EC)⁴ as well as Regulation EC No. 1272/2008⁵ (or Directive 67/548/EEC) are met.

2 Scope

These Basic Criteria apply to commercial toasters used for toasting bread, above all sliced bread, and, possibly, to reheat and defrost bread.

Excluded from the scope are so-called sandwich toasters where slices of bread are fed into horizontal fixtures and covered by a lid in order to also toast complete sandwiches as well as combined appliances (e.g. combined toaster and grill).

¹ Directive on Waste Electrical and Electronic Equipment (WEEE), Directive 2002/96/EC of the European Parliament and of the Council, dated 27 January 2003

² Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, Directive 2002/95/EC, Official Journal No L 37, 13 February 2003

³ Gesetz über das Inverkehrbringen, die Rücknahme und die umweltverträgliche Entsorgung von Elektro- und Elektronikgeräten (Act on the placing on the market, return and environmentally sound disposal of waste electrical and electronic equipment), Federal Law Gazette 2005, Part I, No.17 (23 May 2005)

⁴ 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

⁵ 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, and amending Regulation (EC) No 1907/2006

3 Requirements

3.1 Power Consumption

The average power consumption for five toasting cycles must not exceed:

- 0,025 kWh for two-slice toasters (with two toasting slots side by side)
- 0,033 kWh for two slice toasters with one toasting slot (long-slot toasters)
- 0,05 kWh for four-slice toasters

Five measurements shall be made: The average power consumption per toasting cycle shall be calculated using the following formula:

$$\text{Power consumption (kWh)} = (E_1 + E_2 + E_3 + E_4 + E_5) / 5.$$

When setting the browning level to medium browning the respective power consumption for five toasting processes (E_1 to E_5) shall be measured in kWh according to DIN EN 60442⁶. Setting the browning level to medium browning corresponds to the NCS⁷ colour chart 8-10. The toasted bread and the sequence of toasting shall meet the DIN EN 60442 standard⁸.

Compliance Verification

The applicant shall declare compliance with the requirements in Annex 1 to the Contract and submit a corresponding test protocol prepared by a DIN EN ISO/IEC 17025 accredited testing laboratory (Annex 2). Test protocols prepared by the applicant will be accepted as equivalent if the latter uses a testing laboratory that has been accredited for these measurements by an independent body as SMT laboratory (supervised manufacturer testing laboratory).

3.2 Requirements for Designs and Components

3.2.1 Warranty

The applicant undertakes to offer a minimum 2-year warranty.
The product literature shall include warranty details.

Compliance Verification

The applicant shall declare compliance with the requirements in Annex 1 to the Contract and submit the relevant pages of the product literature in Annex 3 to the Contract.

3.2.2 Materials Selection and Labelling

- Plastic parts weighing more than 25 grams shall not consist of more than two separable polymers or polymer blends.
- Plastic components weighing more than 25 grams shall be marked in accordance with ISO 11469.
- It shall not be permitted to apply a metallic coating to plastic housing parts.

⁶ „Electric toasters for household and similar purposes - Methods for measuring the performance DIN EN 60442

⁷ NCS = National Colour System.

⁸ This corresponds to paras. 10 and 12.1 in the 2003 version.

Compliance Verification

The applicant shall declare compliance with the requirements in Annex 1 to the Contract. The applicant shall name the plastics used for parts > 25 grams and submit a list of plastics according to Annex 4 to the Contract (see form).

3.3 Material Requirements for the Plastics used in Housings and Housing Parts

The plastics must not contain as constituent parts any substances that are classified as

- a) carcinogenic in categories 1 or 2 according to Table 3.2 or categories 1A and 1B according to Table 3.1 of Annex VI to Regulation (EC) No 1272/2008⁹
- b) mutagenic in categories 1 or 2 according to Table 3.2 or categories 1A and 1B according to Table 3.1 of Annex VI to Regulation (EC) No 1272/2008
- c) reprotoxic in categories 1 or 2 according to Table 3.2 or categories 1A and 1B according to Table 3.1 of Annex VI to Regulation (EC) No 1272/2008
- d) persistent, bioaccumulative and toxic (PBT substances) or very persistent and very bioaccumulative (vPvB substances) according to the criteria of Annex XIII to the REACH Regulation or particularly alarming for other reasons and included into the List (so-called list of candidates¹⁰) set up in accordance with REACH, Article 59, paragraph 1.

Halogenated polymers shall not be permitted. Neither may halogenated organic compounds be added as flame retardants. Moreover, no flame retardants may be added which are labelled with Risk Phrase R50/53 or Hazard Phrase H410 pursuant to Part 3 of Annex VI to Regulation (EC) 1272/2008.

The following shall be exempt from this rule:

- process-related, technically unavoidable impurities;
- fluoroorganic additives (as, for example, anti-dripping agents) used to improve the physical properties of plastics, provided that they do not exceed 0.5 weight percent;
- plastic parts weighing less than 25 grams.

⁹ 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, and amending Regulation (EC) No 1907/2006, Annex VI Harmonized classification and labelling for certain hazardous substances, Part 3: Harmonized classification and labelling – (short: GHS Regulation). http://www.reach-info.de/ghs_verordnung.htm, as amended.

The GHS Regulation (Global Harmonization System), that has come into force on January 20, 2009, replaces the old Directives 67/548/EEC and 1999/45/EC. According to the said regulation, substances are classified, labelled and packed until December 1, 2010 according to Directive 67/548/EEC (Dangerous Substances Directive) while mixtures are classified, labelled and packed until June 1, 2015 according to Directive 1999/45/EC (Dangerous Preparations Directive). Notwithstanding this, the classification, labelling and packaging of substances and preparations may be performed according to the provisions of the GHS Regulation already before December 1, 2010 or June 1, 2015, respectively. In such case, the provisions of Dangerous Substances Directive or Dangerous Preparations Directive shall not be applicable.

¹⁰ Link to the list of candidates of Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH): http://echa.europa.eu/consultations/authorisation/svhc/svhc_cons_en.asp

Compliance Verification

The applicant shall declare compliance with the requirements and submit a written declaration from the plastic manufacturers or suppliers or request the latter to submit such declaration to RAL gGmbH (Annex 5). Such declaration shall confirm that the banned substances have not been added to the plastics and give the chemical designation of the flame retardants used, including CAS No. (Annex 5).

3.4 Formaldehyde Emissions

The following formaldehyde concentrations shall not be exceeded:

Measurement Cycle	Formaldehyde Concentration
1	0.3 ppm
2	0.1 ppm

A brand new toaster shall be used for measuring the formaldehyde emissions. Prior to starting the measurement, the toaster shall be heated up according to the Operating Instructions. The toaster's browning control shall be turned to the highest browning setting for measuring the formaldehyde concentrations. The toaster shall be started up in a test kitchen according to DIN EN 61591 (chamber volume 20 m³) in the middle of the room and at a height of 0.9 m. The room air shall be swirled to make sure the air is mixed according to DIN EN ISO 16000-9¹¹. Then, a defined air quantity of test chamber air shall be drawn through wash bottles (1st measurement cycle). For the 2nd measurement cycle the test shall be repeated.

The formaldehyde absorbed in the aqueous solution shall be determined photometrically according to the acetylacetone method. The method is – among other things - described in the VDI Guideline VDI 3484, Sheet 2 – Messen von gasförmigen Immissionen – Bestimmung der Formaldehydkonzentration nach der Acetylaceton-Methode – (Gaseous ambient air measurements - Indoor-air pollution measurements - Measurement of the formaldehyde concentration with the acetylacetone method)

The basic load of the standard kitchen shall be taken into account.

Compliance Verification

The applicant shall declare compliance with the requirements in Annex 1 to the Contract and submit a corresponding test protocol prepared by a DIN EN ISO/IEC 17025 accredited testing laboratory (Annex 6). Test protocols prepared by the applicant will be accepted as equivalent if the latter uses a testing laboratory that has been accredited for these measurements by an independent body as SMT laboratory (supervised manufacturer testing laboratory).

3.5 Safety Requirements

3.5.1 Temperature of the Side Surfaces

The maximum admissible surface temperatures or burn thresholds below which skin burns are not to be expected shall be determined as a function of material and contact time according to CENELEC Guide No. 29:2007 (Temperatures of hot surfaces likely to be touched). Testing shall

¹¹ Indoor air -- Part 9: Determination of the emissions of volatile organic compounds from building products and furnishing -- Emission test chamber method

be conducted in accordance with DIN EN 60335-2-9 and the limits shall be evaluated in accordance with DIN EN ISO 13732-1.

The calculation shall be based on a contact time of 5 seconds for non-functional contact (unintentional contact and extended reaction time) and 1 minute for functional contact.

Compliance Verification

The applicant shall declare compliance with the requirements in Annex 1 to the Contract and present a measurement protocol on the surface temperatures of plastic or metal components (Annex 7). It shall be apparent from the measurement protocol that the test method under DIN EN 60335-2-9 has been used and that the limits have been evaluated according to DIN EN ISO 13732-1.

3.5.2 Electrical Safety

The appliance shall meet the electrical safety requirements under DIN EN 60335-1; VDE 0700-1¹² and DIN EN 60335-2-9:2011; VDE 0700-9:2011-10¹³.

Compliance Verification

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

3.5.3 Other Safety Requirements

The toaster comes with:

- a removable crumb tray,
- an automatic pop-up mechanism that ejects the toasted bread,
- a cancel button which allows the user to interrupt the toasting process at any time.

Compliance Verification

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

3.6 Ease of Use

Also, Blue Angel eco-labelled products shall come with appropriate ease-of-use features. That is why the appliances shall feature:

- a bread centering function,
- an adjustable browning control,
- an integrated or removable bun warmer and
- readily identifiable and easy-to-read operating controls.

Compliance Verification:

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

3.7 Consumer Information

The documentation included with the appliances shall include both technical specifications and environmental and health-related user information. The following basic information shall be included in the product literature and available on the manufacturer's website:

¹² Household and similar electrical appliances - Safety - Part 1: General requirements

¹³ Household and similar electrical appliances - Safety - Part 2-9: Particular requirements for grills, toasters and similar portable cooking appliances.

- a) Power consumption (watts) in the operating mode
- b) Warranty according to para. 3.2.1
- c) Instructions for environmentally sound disposal at the end of the life cycle in accordance with the German Elektro- und Elektronikgesetz (ElektroG) (Electrical and Electronic Equipment Act),
- d) Instructions for first-time use (e.g. heat up the toaster empty before using it for the first time, make sure the toaster is well ventilated).
- e) Health warning not to eat burnt toast.
- f) Recommendation to regularly clean the crumb tray as a build-up of old crumbs is unhygienic and can potentially be a fire hazard.
- g) Information on the browning setting that will produce a "golden-brown" toast.
- h) Instruction not to use the toaster near any flammable materials (e.g. curtain, wall unit).

Compliance Verification

The applicant shall declare compliance with the requirement in Annex 1 to the Contract and submit the relevant pages of the product literature (Annex 8).

3.8 Outlook on Future Revisions of the Basic Criteria

The following criterion might be included when next revising the Basic Award Criteria:

- One-slot eco option. A special toasting function that allows to heat only one slot, while the other slot does not heat up.

4 Applicants and Parties Involved

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

Parties involved in the award process are:

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

5 Use of the Environmental Label

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

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

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until December 31, 2022. They shall be extended by periods of one year each, unless terminated in writing by March 31, 2022 or March 31 of the respective year of extension.

After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

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

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

- Applicant (manufacturer/distributor)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

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